



Trustworthy **AI**

# Conducting Ethical AI Hackathons

A Guide



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Section 1

# Introduction

## Introduction

### *What is a hackathon?*

"Hackathon" combines the terms "hacking" and "marathon", and, in its original terms, it implies an intense, uninterrupted, period of programming. More specifically, a hackathon is a highly engaging, continuous event in which people in small groups produce a working software prototype in a limited amount of time. Hackathons vary wildly in their purpose and execution but generally have a common structure and characteristics. These continuous events are made to engage people in small groups to solve a problem in a limited amount of time, typically in the 1 to 3 days range. Hackathons became popular in the 2000s when technology companies started using them as a means of promoting exploratory coding, new idea generation and, overall, low-risk prototyping.

### *Hackathons as learning tools*

Performing codefests or hackathons has become widespread very rapidly in recent years and they are present in various fields<sup>1</sup>. Fowler et al.<sup>2,3</sup> studied the potential of these activities in fields related to research and teaching and they found these tools to provide "a strong venue/method for learning, especially regarding the whole process rather than special skills." Traditionally, hackathons have been used as a pedagogical tool to deepen important concepts for the area of Software Engineering, encouraging the student to practice the concepts learned in the classroom. As an example, Sadovykh et al.<sup>4</sup> report the experience of adding educational hackathons as a curricular practice to foster students' contact with the technology industry, and state:

*"The gamification aspect of hackathons promotes faster learning of new technologies, encourages the practice of soft skills and engagement with curricula. Students get exposed to the business domain and technology challenges of companies in real-life settings in an entertaining and stimulating environment".*

They also highlight how "the connection between academic educational programs and the current industrial practice is valuable for faculty, students and industry", although they also recognize the difficulty of its implementation. Steglich et al.<sup>5</sup> also studied how an educational hackathon can support students to adopt software engineering practices in problem-solving. In their conclusions, they highlight a few relevant aspects of hackathons as learning tools. Textually:

- A hackathon can be used, in a complementary way, as a promising teaching tool in an environment that simulates configurations of an industrial real environment, with students solving real problems. Another

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<sup>1</sup> Guerrero, C., del Mar Leza, M., González, Y., & Jaume-i-Capó, A. (2016, September). Analysis of the results of a hackathon in the context of service-learning involving students and professionals. In 2016 International Symposium on Computers in Education (SIIE) (pp. 1-6). IEEE

<sup>2</sup> Fowler, Allan, et al. "The global game jam for teaching and learning." Proceedings of the 4th Annual Conference on Computing and Information Technology Research and Education New Zealand. 2013.

<sup>3</sup> A. Arya, J. Chastine, J. Preston, and A. Fowler. "An international study on learning and process choices in the global game jam". International Journal of Game-Based Learning (IJGBL), 3(4):27–46, 2013.

<sup>4</sup> Andrey Sadovykh, Maria Beketova, and Mansur Khazeev. 2019. Hackathons as a Part of Software Engineering Education: CASE in Tools Example. In Proceedings of the International Workshop on Frontiers in Software Engineering Education. Springer, Villebrumier, France, 232–245

<sup>5</sup> Caio Steglich, Larissa Salerno, Thaís Fernandes, Sabrina Marczak, Alessandra Dutra, Ana Paula Bacelo, and Cássio Trindade. 2020. Hackathons as a Pedagogical Strategy to Engage Students to Learn and to Adopt Software Engineering Practices. In Proceedings of the Brazilian Symposium on Software Engineering. ACM, Natal, Brazil, 670–679.

impact is that the students learn without realizing that they are in a learning process, unlike a traditional method that, although useful, can generate a series of blocks in the students that can be undone in an informal teaching environment.

- When students allow themselves to participate once, they recognize the positive impact that this competition can bring, such as the possibility of working with friends and improving technical skills in a more relaxed environment, but which still has a focus on teaching.
- Working in teams helps students to learn from their peers, and if the group has different backgrounds, students can complement each other. Hackathon, despite being an informal event for learning in this context, presents different mechanisms for the dissemination of knowledge, in addition to the possibility for students to test what they have learned in the formal teaching environment.
- Teamwork is also a motivating factor for students to participate, as they have the possibility to work with friends and meet new people to create a network of professionals.
- This event offers a safe learning environment, technological resources, and teaching materials so that teams can organise themselves, a support team that can answer questions about the competition, accompanying professors and industry professionals to support learning and the possibility of exchange information even with students from other teams.
- Individually, a Hackathon does not solve the learning or teaching difficulties present in the academy, but it helps both teachers and students to observe the problems from a different perspective, in which the student approaches reality to test their knowledge.
- A hackathon allows students to evaluate themselves during the learning process, being the true owners of their learning process, realizing where their strengths and weaknesses are while developing a real project. In addition, teachers can understand their students' difficulties and propose activities aiming to support them in these difficulties.

These learnings have been confirmed by other experiences and studies, such as Renning et al.<sup>6</sup>, who in their events found that "students find the events to be highly creative, and fun/engaging. Further, students are highly motivated to participate in them despite the relatively small number of marks assigned to the event. Students agree that the events allowed them to integrate knowledge from their courses." Similar findings are reported in Steglich et al.<sup>7</sup>,

- The students consider that the most developed skills during this hackathon were: Communication Skills, Initiative/Motivation to Work, Creativity and Innovation, Interpersonal Relationships, Teamwork, Autonomy.
- The students considered that the skills they had least developed during this hackathon were: Self-Esteem, Stress Tolerance, Flexibility, Attention to Details / Organised.
- The synergy of the teams, the organisation strategies during the event, and the establishment of simple protocols among teammates supported the collaboration, improving the teams' performance.

Hackathons are not limited to Software Engineering. Linnell et al.<sup>8</sup>, for instance, describe the experience of performing a hackathon with a social objective. It was dedicated to improving the living conditions of homeless people through the use of ICT. In this case, it was attended by university students and, as they report, the hackathon

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<sup>6</sup> Rennick, C., Hulls, C., Wright, D., Milne, A. J., Li, E., & Bedi, S. (2018, June). Engineering design days: Engaging students with authentic problem-solving in an academic hackathon. In 2018 ASEE Annual Conference & Exposition.

<sup>7</sup> Steglich, C., Marczak, S., Guerra, L., Trindade, C., Dutra, A., & Bacelo, A. (2021, September). An Online Educational Hackathon to Foster Professional Skills and Intense Collaboration on Software Engineering Students. In Brazilian Symposium on Software Engineering (pp. 388-397).

<sup>8</sup> Linnell, N., Figueira, S., Chintala, N., Falzarano, L., & Ciancio, V. (2014, October). Hack for the homeless: A humanitarian technology hackathon. In *IEEE Global Humanitarian Technology Conference (GHTC 2014)* (pp. 577-584). IEEE.

"was successful in exposing students to the social impact of technology, giving them practice with development, and identifying new directions and collaborations" in their ongoing project. A more detailed account of a successful hackathon in other fields (healthcare, in this case) can be found, for instance, in Yarmohammadian et al.<sup>9</sup>, who report:

*"Conducting a hackathon in the healthcare education system can create and reinforce active learning, creative thinking, multidisciplinary team working, innovation, and generation of new ideas. It also incorporates multiple knowledge processes of sharing, integration, and creation, as well as a learning environment that allows the students to exploit their factual and procedural knowledge in funny, motivating, and collaborative ways. In addition, the hackathons offer the students a chance to train the presentation skills of pitching, which is currently a vital skill for professional life in all branches. Overall, we can conclude that running hackathon in the pre-hackathon, hackathon, and post-hackathon stages is a functional method for teaching and learning according to university–industry collaboration in the healthcare field, providing pedagogic ideas that can improve teaching this field."*

In summary, hackathons represent an opportunity for HEI in involving students and teachers in their learning processes, reinforcing theoretical concepts while applying such knowledge to real-life problems. Ethical AI is no exception to that, as even fields outside the traditional STEM disciplines can greatly benefit from this methodology.

### **Ethics, AI and Trustworthiness**

AI ethics is a sub-field of applied ethics, focusing on the ethical issues raised by the development, deployment and use of AI. Its central concern is to identify how AI can advance or raise concerns to the good life of individuals, whether in terms of quality of life, or human autonomy and freedom necessary for a democratic society. Ethical reflection on AI technology can serve multiple purposes. First, it can stimulate reflection on the need to protect individuals and groups at the most basic level. Second, it can stimulate new kinds of innovations that seek to foster ethical values, such as those helping to achieve the UN Sustainable Development Goals<sup>10</sup>, which are firmly embedded in the EU Agenda 2030. Trustworthy AI can improve individual flourishing and collective wellbeing by generating prosperity, value creation and wealth maximisation. It can contribute to achieving a fair society, by helping to increase citizens' health and well-being in ways that foster equality in the distribution of economic, social and political opportunity.

It is therefore imperative that we understand how to best support AI development, deployment and use to ensure that everyone can thrive in an AI-based world, and to build a better future while at the same time being globally competitive. As with any powerful technology, the use of AI systems in our society raises several ethical challenges, for instance relating to their impact on people and society, decision-making capabilities and safety. If we are increasingly going to use the assistance of or delegate decisions to AI systems, we need to make sure these systems are fair in their impact on people's lives, that they are in line with values that should not be compromised and able to act accordingly, and that suitable accountability processes can ensure this.

Europe needs to define what normative vision of an AI-immersed future it wants to realise, and understand which

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<sup>9</sup> Yarmohammadian, M. H., Monsef, S., Javanmard, S. H., Yazdi, Y., & Amini-Rarani, M. (2021). *The role of hackathon in education: Can hackathon improve health and medical education?*. *Journal of Education and Health Promotion*, 10.

<sup>10</sup> European Commission. (2019, September 2). *A Sustainable Europe by 2030*. European Commission - European Commission. Retrieved March 8, 2022, from [https://ec.europa.eu/commission/publications/reflection-paper-towards-sustainable-europe-2030\\_en](https://ec.europa.eu/commission/publications/reflection-paper-towards-sustainable-europe-2030_en)



notion of AI should be studied, developed, deployed and used in Europe to achieve this vision. In its Communication of 25 April 2018 and 7 December 2018, the European Commission set out its vision for artificial intelligence (AI), which supports “ethical, secure and cutting-edge AI made in Europe”<sup>11</sup>. Three pillars underpin the Commission’s vision: (i) increasing public and private investments in AI to boost its uptake, (ii) preparing for socio-economic changes, and (iii) ensuring an appropriate ethical and legal framework to strengthen European values.

To support the implementation of this vision, the Commission established the High-Level Expert Group on Artificial Intelligence (AI HLEG), an independent group mandated with the drafting of two deliverables: (1) AI Ethics Guidelines and (2) Policy and Investment Recommendations. The current Guide is based in the recommendations of the AI HLEG Group and their reports.

While offering great opportunities, AI systems also give rise to certain risks that must be handled appropriately and proportionately. We now have an important window of opportunity to shape their development. We want to ensure that we can trust the socio-technical environments in which they are embedded. We also want producers of AI systems to get a competitive advantage by embedding Trustworthy AI in their products and services. This entails seeking to maximise the benefits of AI systems while at the same time preventing and minimising their risks. This is the path that we believe Europe should follow to become the home and leader of cutting-edge and ethical technology. It is through Trustworthy AI that we, as European citizens, will seek to reap its benefits in a way that is aligned with our foundational values of respect for human rights, democracy and the rule of law.

Trustworthiness is a prerequisite for people and societies to develop, deploy and use AI systems. Without AI systems – and the human beings behind them – being demonstrably worthy of trust, unwanted consequences may ensue, and their uptake might be hindered, preventing the realisation of the potentially vast social and economic benefits that they can bring. To help Europe realise those benefits, our vision is to ensure and scale Trustworthy AI.

Trustworthy AI has three components, which should be met throughout the system's entire life cycle:

1. it should be lawful, complying with all applicable laws and regulations;
2. it should be ethical, ensuring adherence to ethical principles and values; and
3. it should be robust, both from a technical and social perspective, since, even with good intentions, AI systems can cause unintentional harm.

Each of these three components is necessary but not sufficient in itself to achieve Trustworthy AI. Ideally, all three work in harmony and overlap in their operation. In practice, however, there may be tensions between these elements (e.g., at times the scope and content of existing law might be out of step with ethical norms). It is our individual and collective responsibility as a society to work towards ensuring that all three components help to secure Trustworthy AI.

### ***Why do we need an Ethical AI Hackathon Guide?***

The Ethical AI Hackathons guide wants to introduce the concept of Ethical AI Hackathons to both higher education students and teachers through the multiple steps to organise one as a complementary strategy to their courses. In the following sections, we will conceptualize hackathons (and, in particular, Ethical AI hackathons) and we will proceed to detail the process of running one, either in offline, online or hybrid form.

The Guide for Conducting Ethical AI Hackathons stands out as an innovative element of Trustworthy AI because

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<sup>11</sup> COM(2018)237 and COM(2018)795.

despite being a widely used strategy in the technology sector and in civil society, it is still little known in higher education. It is also innovative because hackathons are typically used by STEM students to solve technical problems; in this version we will pioneer how to adapt the format to generate solutions that strike a balance between technological and civic-social aspects.

The medium-and long-term impact will be evidenced by the increased capacity of teachers to develop digital skills and transversal competences in students, and the development of competences such as problem solving, teamwork and creativity among students, all with a process of consolidation of ethical and civic values. For universities, the exercise of a hackathon allows them to better contribute to the formation of students prepared to be responsible citizens and contribute to European values.

The hackathon model has a high potential for transferability, and we are confident that - thanks to the very practical aspect of this guide - it will inspire teachers and HEI leaders to evaluate how it can be used in various aspects of higher education. We foresee a high potential for its use in strengthening ethical and trust issues in other advanced technologies and even in other types of community engagement projects and social issues.

### *Who is the Trustworthy AI Hackathon guide for?*

The guide will target HEI teachers and students across Europe and beyond.



For **HEI teachers**, the Guide will introduce them to a new pedagogical strategy that allows the consolidation of learning and skills through the practical application of acquired knowledge.



For **students** who have participated in Trustworthy AI related activities, participating in a hackathon allows them to apply their knowledge to real problems encountered in society and democratic life, thus reinforcing their values.

This resource responds to the need of both groups to update and innovate in their learning strategies so that digital competences and values are reinforced through contact with real life and do not remain only as theoretical elements. On a broader level, it responds to the need for HEIs to develop individuals with critical thinking and social values in order to make a positive contribution to society. The Guide will ensure a rigorous approach so that Hackathons really do contribute to skills development and can be used as part of the student assessment.

Section 2

# Organising Ethical AI Hackathons

## 0. Organising a hackathon: introduction

Organising a hackathon is not, by any means, an easy task. The idea of gathering people together for a few days, and work together might look appealing, but for it to be successful and productive, scrupulous planning and different resources are needed. Last minute issues always arise, so as an organiser you should plan accordingly. Even though the hackathon might last for one to a few days, much more time will be spent in organising it. Before its start, one must think about ideas, teams, and all the things that will keep being needed for the actual hackathon. Technical support, getting the premises ready and the rest of resources (hardware, food, beverages, supplies...) are also in the list. After the event, the winning ideas or solutions should go for further development; the outputs, of course, vary depending on the hackathon final objective.

In this section of the guide, we highlight the 6 crucial steps for the organisers to follow to successfully kick off a hackathon. The first step focuses on definition of an ethical within the organisers' institutions. Given the broadness of the topic, organisers will be received practical support on (a) content definition for their hackathon (e.g., Ethical AI issue they want to address, HLEG requirement); (b) target groups (e.g., what type of HE students are going to be involved); (c) expected deliverables.

In section two of the guide, the organisers are presented with admirative and/or bureaucratic that they will encounter during the organisation of the hackathon. These include format and duration of the hackathon, venue (if hosted onsite), date, mentors and speakers, sponsorships, etc.

Step three of the guide provides suggestions of models for organisers to choose in the planification of hackathon. The idea is that organisers must provide the hackathon participants with a framework and/or instrument for them to use in the development of their idea/solution.

Step four consists of a checklist and suggestions, such as the organisation of dedicated workshops, to prepare the participants on what is a hackathon, the topic of ethical AI, and HLEG requirements, as well as the methodology (mentioned in step 3) that is going to apply during the hackathon. Here a suggestion of timeline is also provided.

Finally, steps five and six provide practical and operational guidelines to for the organisers to follow on the day of the hackathon and after its completion.

# 1. Defining the Ethical AI Hackathon

Time frame: 4-6 months before the hackathon.

## Summary

Upon completion of this step, organisers will be able to:

- Define a real use case that presents issues in relation to Ethical AI / Trustworthy AI.
- Decide how the HLEG requirements will be included in the Ethical AI Hackathon.
- Select one or a few requirements and state how these and their sub-requirements link to the real use case.
- Think about the possible implementations and solutions. (e.g., Is there enough room to be creative? How creative do you want your target audience to be?)
- Visualize HEI students' (potential) profiles.
- Define expected deliverables and outcomes of the hackathons, as well as the depth of the results expected.

## How to define your Ethical AI Hackathon?

Hackathons are a great example of a methodology or strategy that brings together all the concepts that lead to an engaging learning experience: practical, contextual, and social aspects are mixed to facilitate significant learning. One could relate hackathons to PBL (project-based learning) methodologies that can be found in the literature, as both highlight the self-regulated learning that takes places during their execution<sup>12</sup>. However, hackathons present subtle differences that make them perfect for the current objective: students can be put in contact with professionals and experts from the field – even relevant stakeholders – so they can work on the relevant issues together<sup>13</sup>. Hackathons have also been found to foster work-integrated learning and to stimulate students during their learning. Furthermore, peer learning is a by-product of hackathons in higher education, where students can teach and learn from their diverse peers<sup>14</sup> <sup>15</sup> while improving on other skills such as problem-solving, project management and task priority – all in a short event; previous studies show how learning even happens incidentally and opportunistically, with students motivated by both social and technical reasons.

In the current case, the theme is a given: Ethical AI. Clearly defined goals will be needed in a themed hackathon such as the one we aim to build. Themed hackathons expect participants to work on specific projects; Ethical AI hackathons need to work on the ethical issues that arise from the use of AI in real-life. While the diversity of creative ideas could be limited for this fact, it might be more amenable to first-time participants (and we expect most of the students to be novice) and to get sponsors/experts in the field.

In an Ethical AI hackathon, the organiser or committee will need to identify key areas that are suffering because of

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<sup>12</sup> La Place, C., Jordan, S. S., Lande, M., & Weiner, S. (2017, June). Engineering students rapidly learning at hackathon events. In 2017 ASEE Annual Conference & Exposition.

<sup>13</sup> Mtsweni, J., & Abdullah, H. (2015). Stimulating and maintaining students' interest in Computer Science using the hackathon model. *The Independent Journal of Teaching and Learning*, 10(1), 85-97.

<sup>14</sup> Nandi, A., & Mandernach, M. (2016, February). Hackathons as an informal learning platform. In *Proceedings of the 47th ACM Technical Symposium on Computing Science Education* (pp. 346-351).

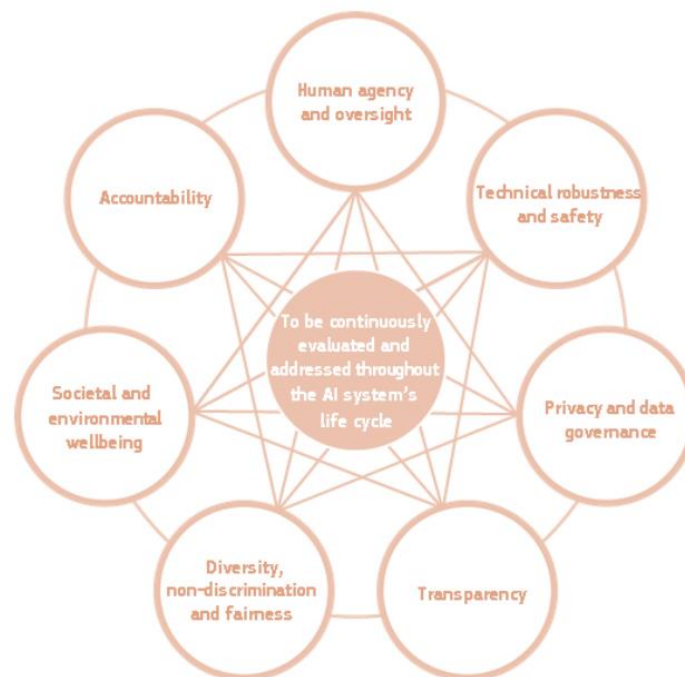
<sup>15</sup> Warner, J., & Guo, P. J. (2017, August). Hack. edu: Examining how college hackathons are perceived by student attendees and non-attendees. In *Proceedings of the 2017 ACM Conference on International Computing Education Research* (pp. 254-262).

definite challenges that have not been addressed satisfactorily. A well-defined problem statement will define your hackathon strategy. Focusing on the challenge during the event will require mentors in the form of managers, experts, or speakers to provide real-time feedback to guarantee solutions are designed keeping in mind the end user.

Fortunately, there are two works that can be used as starting points for the definition of the Ethical AI hackathon:

1. The High-Level Expert Group's Guidelines on Trustworthy AI<sup>16</sup>
2. The Framework for Trustworthy AI Education<sup>17</sup>

This last document has been developed in the context of the Erasmus+ project "Trustworthy AI" with the goal of facilitating the introduction of the High-Level Expert Group's Guidelines on Trustworthy AI<sup>18</sup> into Higher Education across disciplines. This goal is aligned with the EU's digital strategy, which emphasizes the need to train professionals that can "shape technology in a way that respects European values<sup>19</sup>". Towards this purpose, the High-Level Expert Group's Guidelines on Trustworthy AI outline the necessary requirements for responsible and trustworthy development and identified a gap in the real use cases available and in the teaching of the guidelines; the goal of this project is therefore to use them as a starting block for the introduction of ethical and socio-legal competences in Higher Education topics related to AI. HLEG Guidelines define seven requirements for Trustworthy AI (pictured in Figure 1):



*Figure 1 - Interrelationship of the seven requirements: all are of equal importance, support each other, and should be implemented and evaluated throughout the AI system's lifecycle*

<sup>16</sup> [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=60419](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=60419)

<sup>17</sup> <https://www.trustworthyaiproject.eu/framework-for-trustworthy-ai-education/>

<sup>18</sup> EU. (2020). WHITE PAPER On Artificial Intelligence - A European approach to excellence and trust).

<sup>19</sup> EU Commission. (2018). ETHICS GUIDELINES FOR TRUSTWORTHY AI. High-Level Expert Group on Artificial Intelligence, (December). Retrieved from <https://ec.europa.eu/digital-single-market/en/news/ethicsguidelines-trustworthy-ai>

To complement and explain such requirements, the Assessment List for Trustworthy AI (ALTAI)<sup>20</sup> is also available. ALTAI was developed by the High-Level Expert Group on Artificial Intelligence set up by the European Commission to help assess whether the AI system that is being developed, deployed, procured or used, complies with the seven requirements of Trustworthy AI, as specified in the Ethics Guidelines for Trustworthy AI.

1. Human Agency and Oversight.
2. Technical Robustness and Safety.
3. Privacy and Data Governance.
4. Transparency.
5. Diversity, Non-discrimination and Fairness.
6. Societal and Environmental Well-being.
7. Accountability.

ALTAI aims to provide a basis evaluation process for Trustworthy AI self-evaluation. Organisations can draw elements relevant to the AI system from ALTAI or add elements to it as they see fit, taking into consideration the sector they operate in. It helps organisations understand what Trustworthy AI is, what risks an AI system might generate. It raises awareness of the potential impact of AI on society, the environment, consumers, workers and citizens (children and people belonging to marginalised groups). It promotes involvement of all relevant stakeholders (within as well as outside of your organisation). It helps gain insight on whether meaningful and appropriate solutions or processes to accomplish adherence to the requirements are already in place (through internal guidelines, governance processes etc.) or need to be put in place.

A trustworthy approach is key to enabling “responsible competitiveness”, by providing the foundation upon which all those using or affected by AI systems can trust that their design, development and use are lawful, ethical and robust. ALTAI helps foster responsible and sustainable AI innovation in Europe. It seeks to make ethics a core pillar for developing a unique approach to AI, one that aims to benefit, empower and protect both individual human flourishing and the common good of society. We believe that this will enable Europe and European organisations to position themselves as global leaders in cutting-edge AI worthy of our individual and collective trust. Therefore, the combination of the HLEG requirements and the ALTAI list is the starting point for our definition.

Related to this, the Framework for Trustworthy AI Education identified recommendations in multiple aspects that are relevant for the definition of the hackathon (and, also, for later aspects that should be considered in this ideation stage). In particular:

- The HLEG Requirements must be included explicitly in the Ethical AI Hackathon.
- How such requirements are being tackled is also important to define the theme.

The most relevant part of the framework for the task at hand is the definition of the learning outcomes and the assessment of the learning. Participants should be able to achieve the following three outcomes:

1. Appreciation: Identifying the applicability of the requirement in different contexts and its different dimensions for different stakeholders.
2. Analysis: Deliberating about possible implementations of the requirement, how they relate to ethical guidelines and codes of conduct, and their possible consequences.
3. Application: Selecting and technically implementing a solution in response to analysis in terms of the requirement.

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<sup>20</sup> ALTAI Centre. (n.d.). *The assessment list for Trustworthy Artificial Intelligence*. ALTAI. Retrieved March 8, 2022, from <https://altai.insight-centre.org/>

Even though these will be outcomes of the Ethical AI Hackathon as a whole, they need to be considered in the ideation phase to assess whether they will be achievable in the allocated time by the target audience. As already mentioned before, the target audience of the guide are HE students; this is, however, not a homogenous group by any means, as students might come from many different disciplines and backgrounds. It is important to decide how creative and how technically competent do we want them to be depending on the requirement and the issue that we want to tackle. It is also important to consider the type of deliverable expected from these groups: is it an idea, a scenario, a prototype, an app, a proof of concept? Different levels of completion are appropriate for different kinds of participant groups and, therefore, need to be defined.

### Online and hybrid definition of the ethical hackathon

If the hackathon is planned online, or in its hybrid format, organisers should keep in mind the following:

- **Theme:** there should be no differences in choice of theme. Yet, it is important to avoid “hardware” related themes that require some sort of physical prototyping or interaction.
- **Target group/audience:** when organising an online (or hybrid) hackathon, you can potentially reach a more widespread and heterogenous target group, attracting talents from outside your regional borders. Hence, it is even more crucial to define the audience that you want to reach for your hackathon and their expectations.

### Examples

To support the organisation of your hackathon, we prepared a table with some examples of ethical AI hackathons.

Context	Title	Description	Relation to HLEG Requirements (Example)
Education	Real-time classroom behaviour alert	<p>Think about a referral process platform that helps teachers to raise and escalate major behaviour issues in the classroom in real-time.</p> <p>The platform (or other solution) would work like a classroom management tool that will help teachers to share real-time information on their student’s classroom behaviours with students, other teachers, parents, and administrators.</p> <p>The system should record all assessments made by the teachers for future reference and annual evaluations.</p>	<p>Human Agency and Oversight</p> <p>Is the AI system designed to interact, guide or take decisions by human end-users that affect humans or society?</p> <p>Could the AI system generate confusion for some or all end-users or subjects on whether a decision, content, advice or outcome is the result of an algorithmic decision?</p> <p>Are end-users or other subjects adequately made aware that a decision, content, advice or outcome is the result of an algorithmic decision?</p>
Health	Virtual health assistant	<p>Design a device that can help people living with chronic medical conditions to regularly monitor their health parameters and vitals in order to live a healthy life.</p> <p>The device should monitor health conditions like diabetes and should alert family members and relatives if the patient’s health deteriorates. The device should also send timely reminders to the patient to take medication.</p>	<p>Technical Robustness and Safety</p> <p>Could the AI system have adversarial, critical or damaging effects (e.g., to human or societal safety) in case of risks or threats such as design or technical faults, defects, outages, attacks, misuse, inappropriate or malicious use?</p> <p>Did you assess the dependency of a critical AI system’s decisions on its stable and reliable behaviour?</p> <p>Did you align the reliability/testing requirements to the appropriate levels of stability and</p>



			reliability?
<b>Tech</b>	Autonomous Drones	<p>Imagine an AI-powered drone camera, design it with object tracking data from proximity sensors, GPS sensors, and motion sensors.</p> <p>With the autonomous drone, people won't need to pilot the drone camera. This will help people to take professional vacation photos and videos, this will especially be helpful for solo travelers.</p>	<p>Privacy and Data Governance</p> <p>Did you consider the impact of the AI system on the right to privacy, the right to physical, mental and/or moral integrity and the right to data protection?</p> <p>Did you align the AI system with relevant standards (e.g., ISO, IEEE) or widely adopted protocols for (daily) data management and governance?</p>
<b>Mobility</b>	Pedestrian safety	<p>Can you imagine a system that helps passenger vehicles to reduce the speed of the car or bring the car to a halt upon detecting pedestrians?</p> <p>Using infrared, proximity, and motion sensors, the solution should make vehicles safer for pedestrians.</p> <p>The prototype can also use AI and GPS to reduce the speed based on the location of the vehicle. For instance, the speed can be reduced if the vehicle is in a locality where there are only schools or hospitals.</p>	<p>Accountability</p> <p>Did you ensure that the AI system can be audited by independent third parties?</p> <p>Did you establish a process for third parties (e.g., suppliers, end-users, subjects, distributors/vendors or workers) to report potential vulnerabilities, risks or biases in the AI system?</p> <p>For applications that can adversely affect individuals, have redress by design mechanisms been put in place?</p>
<b>Fintech</b>	Calculate credit score	<p>Design a more complete, data-driven, real-time credit score software that considers a borrower's financial and credit history from the beginning of time. Additionally, the software should also be equipped to consider bill payments, rent, utilities, subscriptions, and more.</p> <p>The idea is to make the credit score software that can be used to qualify borrowers for credit and loans in real-time by considering all their financial history.</p>	<p>Transparency</p> <p>Did you put in place measures that address the traceability of the AI system during its entire lifecycle?</p> <p>Did you put in place measures to continuously assess the quality of the input data to the AI system?</p> <p>Can you trace back which data was used by the AI system to make a certain decision(s) or recommendation(s)?</p> <p>Can you trace back which AI model or rules led to the decision(s) or recommendation(s) of the AI system?</p> <p>Did you put in place measures to continuously assess the quality of the output(s) of the AI system?</p>
<b>Retail</b>	Digital Shopping Performance	<p>The shopping experience is more diverse than ever. Customers can search for products on Google, buy products on social media, and can even shop directly on a store's app.</p> <p>But it's the tech team's job to know where exactly customers are finding products. The tech team can collaborate with retail marketing professionals to test the performance of your websites and apps as well as tracking the effectiveness of app push notifications.</p>	<p>Societal and Environmental Well-being</p> <p>Could the AI system have a negative impact on society at large or democracy?</p> <p>Did you assess the societal impact of the AI system's use beyond the (end-)user and subject, such as potentially indirectly affected stakeholders or society at large?</p> <p>Did you take action to minimize potential societal harm of the AI system?</p>
<b>Human</b>	"Fair"	Many companies evaluate their workers and	Diversity, Non-discrimination

resources	worker rating	<p>take decisions depending on such evaluations. Smaller companies, in many cases, would also like to do that but lack the necessary resources.</p> <p>In both cases, however, the evaluation is often unfair. Hard workers that get less exposure might be evaluated worse than employees with less workload but higher exposure or better image.</p> <p>Design a HR system that can automatically obtain the results of the worker depending on as many parameters as you need: worktime, productivity, hourly wage, emails sent and received, etc.</p>	<p>and Fairness</p> <p>Did you establish a strategy or a set of procedures to avoid creating or reinforcing unfair bias in the AI system, both regarding the use of input data as well as for the algorithm design?</p> <p>Did you consider diversity and representativeness of end-users and/or subjects in the data?</p> <p>Did you test for specific target groups or problematic use cases?</p> <p>Did you research and use publicly available technical tools, that are state-of-the-art, to improve your understanding of the data, model and performance?</p>
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## 2. Administration and organisation

### Where? When? How?

Time frame: 2-3 months before the hackathon.

#### Summary

Upon the completion of this step, organisers will be able to:

- Define the format of the hackathon (onsite, face-to-face, or hybrid; public or private; registration fee; etc.)
- Define the value and date (or other online delivery tools/platforms)
- Define who your mentors and helpers will be (and the different approaches for onsite or online/hybrid)
- Think about potential sponsors for their hackathon
- Think about a code of conduct
- Define incentives and prizes for the participation to the hackathon
- Think about other optional administrative initiatives (website, social media, etc.)

#### 2.1.1. Format and duration

Will the Ethical AI hackathon be held physically (face-to-face), virtually, or hybrid? Private or public? Will registration be free? How many stages will be planned? What is the optimal duration for your hackathon?

Some definitions	
<i>Onsite, online, hybrid</i>	<p>These refer to different settings:</p> <ul style="list-style-type: none"> <li>• Onsite events happen face-to-face, and all participants share the premises and rooms.</li> <li>• Online events happen completely in virtual environments; these can range from dedicated hackathon sites to the institution’s own LMS (Learning Management System) or platform.</li> <li>• Hybrid events can combine both; for instance, local participants might be onsite while international participants could be online.</li> </ul>
<i>Public and private events</i>	<p>They are equivalent to open or closed events, so:</p> <ul style="list-style-type: none"> <li>• Public events (or open events) are those where registration is open</li> </ul>

	<p>to any interested participant, be they part of the organising institution or not.</p> <ul style="list-style-type: none"> <li>• Private events (or closed events) are restricted to a particular population, such as one class students or employees of one institution.</li> </ul>
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Recommendations	
<b>Delivery</b> <i>Onsite, online, hybrid</i>	Different settings (physical, virtual, or hybrid) come without an inherent loss in the learning outcomes. Hence, it is up to the organiser's preference and regulations. In some cases, a hybrid setting (both physical and virtual) could be considered, as it allows to involve high level or international experts. For considerations on the virtual (online) case, please see section below "online and hybrid format and duration".
<b>Format</b> <i>Private</i>	Ethical AI Hackathons for students in HE should be private, limited to a cohort of students, or open to more students within the university. It is advised to avoid public hackathons as they might add undesired interferences to the learning outcomes. Keep in mind that the aim here is not to produce fully functional prototypes or solutions but to learn along the way. It is also important to know the profiles of the participant students to tailor the hackathon to them. A controlled environment is, thus, preferable.
<b>Registration</b> <i>Free of charge</i>	Registration should be free in general, or symbolic in case some extras – merchandising, food, beverages – are provided for the participants. If possible, however, this should be financed by the organising institution or other sponsors.
<b>Hackathon structure/plan</b> <i>Three stages</i>	Three stages are recommended: a preparation (warming up) where expectations are set and groups are formed, the core event and the post-event evaluation.
<b>Duration</b> <i>24/36h</i>	As the aim is less on the technical (prototype building or coding) and more on the learning (understanding Ethical implications), Ethical AI Hackathons can be shorter. In general, it is suggested to aim for a 24/36h period, with sufficient time allocated to the groups to warm up, to develop the core work and to present their proposals.

### 2.1.2. Online and hybrid hackathons: format and duration

When it comes to the organisation of online, or hybrid hackathons, although most activities are similar, some processes such as registration, rules, and promotion will have noticeable changes. Managing participants should be easier in online setting but ensuring a significant outcome both in learning and networking will be harder, so all details need to be carefully planned.

The table below outlines some overall advantages and disadvantages of online (or hybrid) format.

Advantages	Disadvantages
Less overhead costs (venue, transportation, staff).	Participants could feel less involved.
Larger and more diverse audience (no geographical constraints).	Group collaboration can suffer.
Challenges can run for a longer duration – and even be asynchronous.	Digital literacy is important to obtain high quality deliverables (e.g., collaboration tools).
Improved chances of success via social media (sharing, reach).	It is harder to monitor what participants are doing.

Community creation.	If synchronous, feedback becomes more complex. This can be solved in asynchronous settings, giving time to the mentor or expert to assess the partial deliverables before coming back to the group.
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Additionally, a hybrid/online hackathon, through a redefinition of the structure, offers the opportunity to maximize the learning experience over time, getting the most value out of online Ethical AI hackathons. How?

**Think about three phases:**

- First, an idea submission phase (online) where participants submit their draft ideas after the presentation of the problem.
- The development/prototyping phase (online or offline), where groups can work together asynchronously to build their solution. Experts can be consulted via email or forums, and feedback can be provided over a few days or weeks.
- The presentation and final phase (online or offline), where groups present their ideas to the jury.

Note how these can be combined, for instance with an all-online event or with the first phases online and the presentations offline in a final face-to-face event that will double as a celebratory event.

### 2.2.1. Venue & date

It is important to find and reserve an appropriate place for the event and reserve the date. The earlier the better. For Ethical AI Hackathons directed to HE students, the obvious choice is a place on campus, so you will need collaboration from the administration of the University. If there is insufficient or no available space on campus for the hackathon needs, you can either approach companies that could sponsor/lend space for the hackathon. Differently, you can try to find a paid space if there is budget allocated for that or you can go online (see Section 3).

Venue requirements based on European Commission (2020)<sup>21</sup>:

- Proper seating (see below)
- Power strips in each table
- Wi-Fi (it is important to have reliable Wi-Fi)
- Projector
- A microphone, at least in large rooms
- Accessible entrances and wheelchair-friendly seating space (and if there is a stage, check if it is accessible, if applicable)
- Gender-neutral, single-occupancy, accessible bathrooms
- If you are running a large event, also check all the potential accessibility concerns<sup>22</sup>.

Seating requirements are different for hacking and workshops. For hacking, you will want a banquet-style setup with large circular tables that seat about 10 people each. Rooms in banquet-setup hold the fewest number of people compared to other table/chair arrangements, so take that into account when computing capacity. For workshops you will want classroom-style seating, i.e., rectangular tables with chairs on one side.

<sup>21</sup> EU. (2020). WHITE PAPER On Artificial Intelligence - A European approach to excellence and trust).

<sup>22</sup> <http://conference.hopper.org.nz/#environment>

Choose the date of your event carefully. Avoid the summer, holidays, and other major events in your field. Also avoid peak student workload (e.g., exams period or beginning of the semester). Weekends are hard for people who are attending in their professional capacity, for instance. It is also important to ask your venue about permissible start and end times. Set times for when you will arrive/leave and for when participants will arrive/leave. Plan at least 30 minutes before and after the event for you to set up and tear-down/cleanup. Make sure you can get in and that your participants can get in. If the building’s front door is locked, make sure you have a key and that you have someone posted at the door to let in participants (you may need a team of people to rotate at the front door throughout the day).

Check whether the venue permits you to have food in the room. If holding the event outside of business hours, check that the venue will have air conditioning/heating.

Recommendations	
<p><b>Appropriate space</b> <i>Follow EU requirements</i></p>	<p>Checklist all the EU requirements:</p> <ul style="list-style-type: none"> <li>• Proper sitting</li> <li>• Power strips</li> <li>• Wi-Fi</li> <li>• Projector</li> <li>• Microphone</li> <li>• Accessible to all</li> <li>• Gender neutral</li> </ul>
<p><b>Date</b> <i>Avoid all troubling dates</i></p>	<p>Take into consideration:</p> <ul style="list-style-type: none"> <li>• National holidays</li> <li>• Institutional holidays</li> <li>• Exam days (for HE Hackathons)</li> </ul>

### 2.2.2. Online and hybrid hackathons: ‘Venue’ & Date

When organising an online (or hybrid) hackathon, it is relevant to choose online tools to support the delivery of your event. In the case of an online hackathon, the success of your hackathon will entirely depend on the effectiveness of the tools chosen. Differently, when organising a hybrid event, its success depends both on the venue and tool choice.

In this section we propose three **tools that will help the organisation of your online and hybrid hackathon**, serving as your ‘virtual venue.’ Dedicated platforms to conduct hackathons are available in the market. These customised tools publish your hackathons, and they manage them. They ensure optimum integration with internal social networks, IT systems, and other existing tools. From an organiser’s perspective, the platforms give easy access to participant data and submissions, allow external voting, offer a forum for discussion, let mentors easily help the hackers online, offer customisation of platform design, allow export of projects, and offer real-time stats dashboard. Some examples include [Devpost](#), [Kreativdistrikt](#), [TaiKai](#) and [Mercer - Mettl](#).

However, these platforms have a major disadvantage: the cost, being them commercial platforms. Additionally, they require external people to have access and login credentials, which might not always be supported by your institution.

When it comes to choosing the date of your online (or hybrid) hackathon, no major differences are identified here. Organisers should however keep in mind that if they expand the geographical scope of their hackathon outside their institution and/or national borders, different national holidays and exam session periods will apply.

In the table below, you can find several tools, divided by six categories – project management, registration, communication, briefing session, interactive engagement, team submission and voting:

Category	Tools
<p><b>Project management</b> <i>ensuring that the event runs smoothly and that tasks are delegated to the right people</i></p>	<ul style="list-style-type: none"> <li>• <b>Monday:</b> very easy and visual tool where you can set up tables to get yourself organised with a to-go list and delegate tasks.</li> <li>• <b>Trello:</b> These boards are simple so you can keep track on what needs to get done and what has not been done yet.</li> </ul>
<p><b>Registration</b> <i>ensuring participants register to the event so you have their contact details and keep in contact with them</i></p>	<ul style="list-style-type: none"> <li>• <b>Humantix:</b> Aussie startup where a percentage of each ticket sale will go to a social cause.</li> <li>• <b>Eventbrite:</b> event management system that has large reach and can help with marketing your event.</li> <li>• <b>Marketing:</b> telling people what you'll be doing and encouraging them to participate.</li> </ul>
<p><b>Communication</b> <i>give updates to participants so they know what is happening and how to get the most out of their hacker experience</i></p>	<ul style="list-style-type: none"> <li>• <b>Slack:</b> fantastic tool where you can create channels for different purposes so that participants can be notified with what is coming up on the agenda</li> <li>• <b>Discord:</b> awesome for sessions with hundreds of people, keep them informed, can do online chats, pinging mentors</li> <li>• <b>Email:</b> sounds old school, but sending important information to an inbox can be beneficial</li> <li>• Forums in the online platform or LMS available in your institution.</li> </ul>
<p><b>Briefing Sessions</b> <i>Hackathons hold a session to inform the participants what is happening, and at the start of the event do a 'kick off'</i></p>	<ul style="list-style-type: none"> <li>• <b>Google Hangouts:</b> Easy link to spin up if you use the Google Suite</li> <li>• <b>Zoom:</b> Allow participants to enter your Zoom room, you can share screen and record the session</li> <li>• <b>Other platforms</b> (e.g., BlackBoard, Moodle, etc.) in your institution can be used for this purpose.</li> </ul>
<p><b>Interactive Engagement</b></p>	<ul style="list-style-type: none"> <li>• <b>Menti:</b> easy, visual and compelling. Lots of features including ranking, quizzes, polls, word clouds, etc</li> <li>• <b>Slido:</b> Use this if you want people to ask questions and vote on the questions/comments. The more votes it gets, the higher up the ranking it will go</li> </ul>
<p><b>Team Submissions and Voting</b> <i>groups can put in their submissions for the hack - whether it be a video via YouTube, GitHub depository, or link to the working prototype.</i></p>	<ul style="list-style-type: none"> <li>• <b>DevPost:</b> You can see all the submissions that come through and judges can go in and vote based on customised criteria</li> <li>• <b>Google Forms:</b> Put in your team's group name, participants, and a link to what you have created over the period of time. Judges can go in and click on the links to either rank or score them</li> <li>• Activities in your online platform or LMS,</li> </ul>

	where students can send their deliverables.
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### 2.3.1. Mentors & other helpers

Ethical AI Hackathons will have two groups of people that will be close to the organisation and will be critical for success.

- **Mentors.** These experts in the field (preferably related to the chosen topic and requirement) will become consultants to the participant groups, acting as “shared” resources. You need to find these people in advance and make sure they are available on the chosen date, but you also need to provide them with some training on the methodology and dynamic of the event. Mentors will listen to each group’s discussion or concerns and provide invaluable feedback to them, to make sure they are headed in an appropriate direction. They can also be the judges at the end of the hackathon.
- **Judges.** Developer evangelists, university deans, celebrated subject matter experts, and local management of top organisations can be excellent choices. Tell them about the relevant criteria, emphasize the relevance of the learning above winning and, above all, remind them of the importance of fair and constructive judging.
- **Speakers.** These can also double as mentors or judges. The difference of this role is that speakers should be relevant voices that can inspire students and their solutions, while also providing some extra learning to them.
- **Helpers.** These volunteers will be present at the registration table or at the venue’s doors, will take care of the photography and social media of the event, will help with participants accommodation and can also act as moderators in online events – especially if attendance is high. In “classroom” sized hackathons, helpers might not be needed, but if all students from the institution are invited, they will be critical.

Recommendations	
<b>List of speakers/mentors</b> <i>Make a list of people</i>	Prepare a list of potential mentors and contact them to see their availability. Provide them with details about the event, their role and the dynamic that they are expected to follow.
<b>Helpers/volunteers</b>	Consider involving helpers (volunteers) if many participants are expected.

### 2.3.2. Online and hybrid hackathons: mentors & other helpers

If the hackathon is held online, keep in mind that expert’s/speaker’s **workshops** can be held asynchronously. For instance, experts can check the forums periodically to provide feedback, or use their email directly. Speakers can record their speech and even add additional layers of complexity (interactivity or giving time to students to try some game or read some article in-between the talk). Workshops can be also uploaded as resources that can be reviewed over and over when needed over the course of the hackathon.

### 2.4.1. Sponsorship

Sponsors should not be required (if the hackathon is held on campus and internal financing is available) but in case it is not or additional budget is needed, potential sponsors in the field of AI can be approached. If that is the case, be sure all basic information has been chalked out (hackathon objectives, date, expected participation, venue, value propositions, website, etc. and the differentiating factors). Potential future employers could be interested in raising awareness of their companies, but also keep in mind smaller local companies or administrations (e.g., restaurants that could provide food for the event or the local government, which probably has some budget allocated for cultural/educative events).

In any case, make sure your sponsors are happy so that they are likely to back more events in the future. Regular professional communication is key to convincing them they got their money's worth and more. For instance, once the event is done, remember to thank your sponsors publicly on your website and via social media, if they allow it.

Recommendations	
<b>Budget</b> <i>Understand you budget for planning</i>	Understand your budget and assess whether external sponsors are needed.
<b>Identification of sponsors</b> <i>Identify potential sponsors</i>	In case the budget provided by your institution is not sufficient, identify potential sponsors for your hackathon. In this case, you might want to consider AI companies in your region.
<b>Satisfaction of sponsors</b> <i>Ensure sponsors' satisfaction</i>	Make sure your sponsors feel happy (e.g. include their logo in material circulated, etc.) to fuel future collaborations.

### 2.4.2. Online and hybrid hackathon: sponsorship

When organising an online (or hybrid hackathon) it might be more difficult to secure a sponsorship from external organisations. However, online and hybrid hackathons require a lower budget, as explained in section 2.1.2.

### 2.5.1. Code of conduct

Technology events (and AI in this case) have a history of not always being welcoming to women and minorities. We need to change that – and an Ethical AI Hackathon is not only the perfect place to do it, but also becomes a mandatory requirement given the theme chosen. A step towards more inclusivity and fairness is the drafting of a code of conduct. A code of conduct is not just about enforcing rules. It sets community norms and sends a signal to would-be participants that you are trying to create a welcoming environment. And, of course, if there is a problem at your event having a code of conduct ahead of time will help you resolve the issue. To maintain a welcoming environment, formulate policies to deal with all kinds of harassment and lack of respect for others' opinions, and remind all attendees that it is up to them to make the experience amazing.

Recommendations	
<b>Sharing</b> <i>Share the code of conduct beforehand</i>	Share the code of conduct via the website, posters, and any other published material sent to sponsors, participants, speakers, hosting team members, and make people acknowledge their agreement to the terms and conditions.
<b>Communication</b> <i>Communicate expectations</i>	All attendees need to understand what behaviour is expected of them.
<b>Reporting policy or channel</b> <i>Create a reporting mechanism for participants and mentors</i>	Have a proper reporting policy or channel by mentioning in the document whom to contact and how. Train your team before the event and designate some people specifically to deal with any kind of crisis and escalation.
<b>Violations</b> <i>Deal with violations</i>	All violations should be kept private, if possible, and handled impartially by following a clearly defined chain of custody.
<b>Penalties</b> <i>Establish penalties for the violations</i>	Decide what the outcome of the breach of conduct will entail for the person.
<b>Victims</b>	Most important tip of all: Do not judge the victim.



<i>Support the victims without judgement</i>	Once the details have been noted, offer support, arrange escort, or contact law enforcement if required.
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### 2.5.2. Online and hybrid hackathons: code of conduct

Here, we might find the most differences as the rules are unique to online (and hybrid) events. Hence, rules need to be more clearly stated and communicated and many cases considered:

- Define and share the rules established.
- Add a FAQ section to the platform. An example of the common questions and rulings can be found [here](#)<sup>23</sup>.
- Be clear (and decide) what deliverable is expected on each stage, if any, and how should they be delivered (shared, sent, hosted in GitHub or similar...).
- Give clear directions to participants on what is expected from them learning-wise. For instance, give them a daily or weekly guide with the activities they are expected to complete (workshops, videos, etc.).
- You can either let your judges pick winners or you can have a voting system where others (employees, public, sponsors, consumers, etc.) can also help select the best projects. If you opt for the traditional jury approach, pick your jury members and mentors as you would for offline hackathons mentioned earlier.
- Keep the number of groups and/or participants manageable; experts and judges will have to allocate time to evaluate and give feedback to all submissions and these could be overwhelming in some cases.
- Keep in mind that prizes will need to be more digital than physical; also try to find some smaller reward for all participants.
- Ensure your website has all details pertinent to the hackathon<sup>24</sup>—registration, eligibility, requirements, timelines, learning resources, judges, winning criteria, prizes, swags, referral programs, etc.

### 2.6. Incentives & prizes

Incentives and prizes should not be, in this case, the main objective or motivator, but they can help as a recognition for a work well done. These should be awarded regardless of whether the hackathon is delivered online, onsite, or in a hybrid setting. Think about giving all participants something (rather than awarding only the winner). In HE, incentives can range from a simple credit recognition for participating to gifts from the sponsors. Look for popular gifts (gift cards, technology) or opportunities (e.g., internship opportunities or mentoring by experts), but try to avoid advertising them too much: you want your Ethical AI hackathon to be focused on offering superb opportunities to learn and network with peers.

Recommendations	
<b>Target group</b> <i>Award prizes to all participants</i>	Everyone should be awarded with a prize, even if symbolic, as an incentive of their work.
<b>Prizes</b> <i>Define the prizes beforehand</i>	Think about different prizes. Not only material prizes can be used, opportunities within your organisation are also valuable.
<b>Networking</b> <i>Enable networking</i>	Do not focus on the prizes as the reason to participate. The end goal is to incentivize participants to network. If not chosen carefully, prizes can drive participants away from networking and push a toxic

<sup>23</sup> Bots for Good. (n.d.). *A developer circles supported, Intercity Challenge in India to recognize and reward developers who build the most innovative bots that solve local challenges - devpost*. Bots for Good Challenge. Retrieved March 8, 2022, from <https://bots-for-good.devpost.com/rules>

<sup>24</sup> An example can be found [here](#).

	environment for collaboration.
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### 2.7. Website & social media (optional)

If the scope of the event or the number of participants expected is high, you can let the World know about the event (and even, manage it) using some low-cost channels such as:

- A simple website to advertise the event and provide the basic information and/or register.
- Social media: Twitter, Facebook, LinkedIn, etc. might work perfectly for that matter, especially if the attendees have accounts in these networks.

### 2.8. Merchandising (optional)

Some events like to provide merchandising, like t-shirts, stickers, or stationery. Think whether this is the best way to spend the budget here, but if you want to add some “branding” to the event, keep these other materials in mind. Sponsors or the University might also provide some items. If they have notebooks and pens available, for instance, this could make for a nice starting kit for the event.

## 3. Participants’ processes

Time frame: 1-2 months before the hackathon

### Summary

Upon the completion of this step, organisers will be able to choose between:

- Business Model Canvas
- Double Diamond Model
- Design Thinking

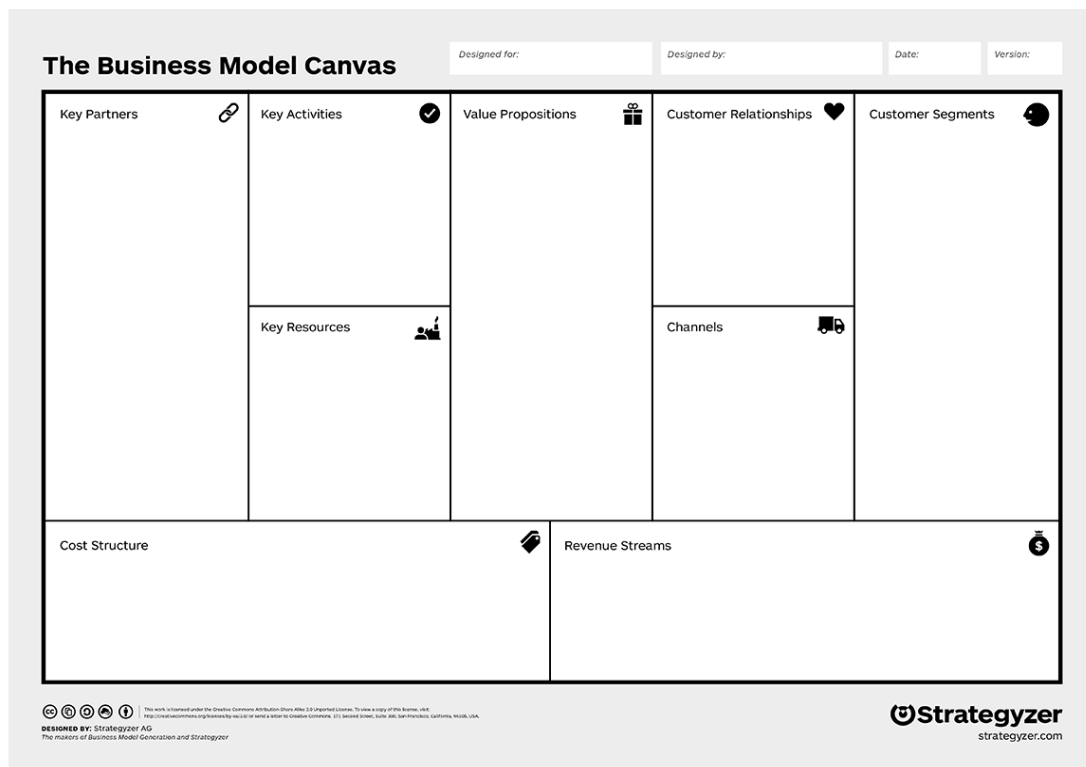
### 3.1. Introduction

Once the topic is established, and the basic elements of the hackathon have been organised, for the participants to thrive, it is necessary to outline processes for them to follow when they start their group work. This is a fundamental step in the organisation of the hackathon, as it enables participants’ critical and creative thinking, whilst providing them with a step-by-step framework on how to approach and concretise their ideas.

To this end, the Trustworthy AI hackathon guide proposes three models for the participants to use: Business Model Canvas, Double Diamonds, and Design Thinking. The three models are applicable for an online, hybrid, and onsite setting.

### 3.2. Business Model Canvas

The Business Model Canvas is a one-page digital (or printed) canvas that supports participants to define and communicate their new idea and/or concept. By filling in each block of the Canvas, hackathon participants work through the fundamental elements of a business, product, or idea, structuring their ethical AI solution in coherent

way<sup>25</sup>.

Picture 2. Business Canvas Model

Based on the Oxford University<sup>26</sup> Model Canvas Explanation, the Trustworthy AI consortium has adapted some questions that participants should answer when filling in the Canvas. Here we present the blocks in alphabetical order:

- **Customer Segments:** Who are the costumers/target groups? What do they think? See? Feel? Do? How is artificial intelligence breaching fundamental EU rights<sup>27</sup>?
- **Value Propositions:** What is compelling about the solution proposed? Why do users of artificial intelligence buy, use it? Why does it add value for them? How does it protect fundamental EU right?
- **Channels:** How are these propositions of ethical artificial intelligence promoted, sold and delivered? Why? Will it work working?
- **Customer Relationships:** How do you interact with the customer through their 'journey'?
- **Revenue Streams:** How does your idea earn revenue from the value propositions?
- **Key Activities:** What uniquely strategic things does your idea do to deliver its proposition?
- **Key Resources:** What unique strategic assets must your idea have to compete?
- **Key Partnerships:** What can be outsources so that you can focus on your Key Activities?
- **Cost Structure:** What are your idea's major cost drivers? How are they linked to revenue?

### 3.3. Double Diamond Model

<sup>25</sup> [https://medium.com/seed-digital/how-to-business-model-canvas-explained-ad3676b6fe4a#:~:text=The%20Business%20Model%20Canvas%20\(BMC,of%20a%20Business%20Model%20Canvas.](https://medium.com/seed-digital/how-to-business-model-canvas-explained-ad3676b6fe4a#:~:text=The%20Business%20Model%20Canvas%20(BMC,of%20a%20Business%20Model%20Canvas.)

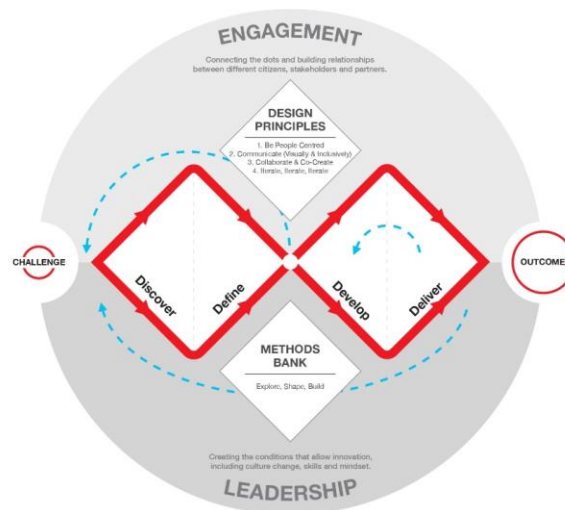
<sup>26</sup> <https://eship.ox.ac.uk/business-model-canvas-explained/>

<sup>27</sup> Click here to learn more about the EU Charter of fundamental rights

The Double Diamond Model is another tool that supports its users to explore an issue more widely or deeply (divergent thinking) and then to take focused action (convergent thinking)<sup>28</sup>. It was created by the British Design Council for Innovation in 2005, after observing similar pathways amongst different companies in the steps they take to conceptualise and create an innovative idea and/or products<sup>29</sup>. According to the Double Diamond Model, participants should follow four the following stages to spark innovative ideas:

- **Discover:** in this stage, participants focus on the definition of the problem. This entails zeroing in on the people that are affected by the issue, understanding the context, and discovering the problem. e.g. participants should imagine a scenario where the use of AI breaches fundamental European Union (EU) rights for its users/beneficiaries/target audience. In what ways is the technology misused? What are the rights that are being breached?
- **Define:** in the define phase, participants are expected to define from the different perspective the challenge identified in the previous step. E.g. Participants should answer the questions: in what ways is the misuse of AI problematic? How is it problematic?
- **Develop:** at this stage, participants are invited to provide different answers/solutions to a clearly defined problem, co-designing with a different range of people. e.g. Participants should propose solutions that can counter/prevent the misuse of AI.
- **Deliver:** this stage entails testing out the different solutions identified, eliminating the ones that are not working and improving the ones that do. e.g. participants should test their solutions with a broader audience.

The Double Diamond Canvas is not a linear model. The testing phase can underline certain problems that send back the participants to the initial stage. Hence, iteration through making a prototype and testing it from a very early stage of the hackathon is crucial for the success of this model and for the delivery of a solution.



© Design Council 2019

Picture XX, Double Diamond Model, British Design Council (2019)

### 3.4. Design Thinking

Design Thinking is a process for solving an issue that focus on the end-user’s needs. The process relies on “observing,

<sup>28</sup> Design Council (2019) <https://www.designcouncil.org.uk/news-opinion/what-framework-innovation-design-councils-evolved-double-diamond>

<sup>29</sup> See 1

with empathy, how people interact with their environments, and employs an iterative, hands-on approach to creating innovative solutions<sup>30</sup>. Design Thinking uses a human-centred approach, as it starts from the end-users' problem and/or experienced issues to then build on a product or service. Participants should approach Design Thinking as an iterative process that consists of five steps:

- **Empathise:** in this step, participants need to generate an understanding of how the target group of their idea is affected by the misuse of AI. It is crucial for the hackathons participants to observe with empathy, withholding judgement and avoiding preconceived notions of what users need.
- **Define:** in the second step, participants, based on the notions that are gathered in the “empathise step” you define the problem. In doing so, think about the problems that the end users struggle with every day, how they are affected by the issue.
- **Ideate:** in this phase, participants brainstorm as group on possible solutions to the problem that has been identified in the previous stage. The idea is to put forward as many solutions as possible, to then select the best ones to proceed forward.
- **Prototype:** during this stage of Design Thinking, participants are invited to come forward with a concrete version of their idea and to understand how this could be possibly accepted by its end users.
- **Test:** once participants came up with an idea, they need to test their idea with the end users, understanding how these are going to interact with it and collect feedback for improvement.

Design Thinking is not a linear approach. Once participants reached the last phase of the Design Thinking process, they are likely to go back to one or more of the steps and to adjust your solution.

### 3.5. 7-step method

The method was developed as part of the Trustworthy AI Intellectual Output 2, and it has the goal to:

- identify, apply and balance ethical, moral and social elements and dilemmas relating to AI in general
- convincingly communicate and defend their positions
- design ideas for technical solutions and/or organisational processes

The 7 steps are organised as follow:

1. **Stating the problem:** describe case, identify problem, check the facts
2. **Identify relevant factors and stakeholders**
3. **Think of possible solutions** or approaches to the problem
4. Go through the ethical requirements and **reshape/adapt your solutions** accordingly
5. **Make a tentative** choice based on step 4
6. **Test your choice** using tests like harm test, publicity test, reversibility test
7. **Review** steps 1-6

## 4. Getting ready for the event

### Summary

Upon the completion of this step, organisers will:

- Have a clear overview of the final steps needed in the organisation of the event.

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<sup>30</sup> <https://www.wework.com/ideas/professional-development/creativity-culture/what-is-design-thinking#what-is-design-thinking>

### 4.1.1. Warming up – The month before the event

Ethical AI Hackathons have a peculiarity to be considered. As they are strongly themed around Trustworthy AI, all groups need to be at least familiar with some of the concepts. A successful Ethical AI hackathon not only involves hacking but also training. As in many courses a significant number of newcomers will be expected (both to the methodology and its theme), having training workshops is a great opportunity to make participants more comfortable with the topic. These workshops can be:

- Run in advance for any student that requires it before the event.
- Included as part of the event – preferably at the start and using a speaker.
- Run in parallel to the main event so groups can change activities and get a more dynamic experience.

Workshops should introduce participants to the subject of the hackathon (Ethical AI and the related requirement in specific) and to technical skills useful for the hackathon (e.g., organisation, management, collaboration tools, etc.). Workshops can also be places to discuss issues in Ethical AI, which would be related to the hackathon. Workshops should be interactive as much as possible, as the rest of the event. Doing so will also address one of the gaps detected in the Learning Framework for the teaching of Artificial Intelligence in Higher Education, which is the need for more formation on the topic of Ethical AI.

The Open Educational Resources developed in the Trustworthy AI project can be great tools to run these workshops<sup>31</sup>. Think about using the videos developed as a general introduction and requirement (they could, for instance, be sent to participants to watch before the event), the card deck for short sessions in the workshops at the start of the event (so teams also get to know each other better) and the 7-step process as a guide for the students to be successful on developing their proposal to solve the problem posed in the Ethical AI hackathon.

Finally, and depending on the scope, a pre-event could help participants to get to know each other in a relaxing setting. A post-event after the hackathon wraps up gives participants a chance to socialize now that they know each other. Consider these possibilities depending on the participants and size of your Ethical AI hackathon.

Set up a tool for group communication (e.g., Slack, Discord or similar), social media accounts (Twitter, LinkedIn or Facebook), shared document space (Google Docs, Dropbox). Also acquire any needed supplies (paper, markers, tape, post signs, tag stickers, utensils, food catering orders, camera to take pictures, etc.).

You also need to prepare a timeline. For instance, for a 36h onsite Ethical AI hackathon, a suggestion can be found below:

Day	Time	Description
Day 1. The first day is all about laying the groundwork for a successful event; get everyone excited and on the same page.	15:00	Registration and snacks. Informal pre-event.
	16:00	Opening session
	16:30	Problem definition
	17:00	Speaker 1 – Problem related
	18:00	Team Formation.
	19:00	Idea's pitch and wrap-up for the day
Day 2. Morning. Work starts, and groups would need to think about Trustworthy AI and start developing an appropriate solution. Experts will check on groups.	21:00	(Optional) Group dinner
	09:00	Card deck game
	10:00	Group work on the solution
	11:00	Troubleshooting session with mentors
	12:00	Expert check on groups
	13:00	Lunch

<sup>31</sup> <https://www.trustworthyaiproject.eu/>

Day 2. Afternoon. Presentations and closing.	14:00	Speaker 2 – Trustworthy AI in real-life cases
	15:00	Group work
	16:00	Final mentor feedback
	17:00	Presentations
	19:00	Winners announced
	19:30	Closure and final words. Post-event follow-up

Differently, in case you organise your hackathon online (or in a hybrid setting), the guide suggests a different timeline that allows more flexibility to the individual groups (perhaps in different areas) to gather according to their availability and necessity. The timeline for online (or hybrid) hackathons should be as follows:

Day	Description
Day 0. Kick-off.	Registration. Opening session – live via online platform. Problem definition. The recording will be available too. Team Formation (can be randomised). Upload materials – Workshops, additional videos, etc.
Day 1-10. Getting the work done.	Group work on the solution. Expert check on groups. Feedback via forums, email, slack... Watch keynotes. Participate in Workshops (live or not)
Day 6	Organise an online troubleshooting session with mentors
Day 11-12. Presenting/pitching.	Groups prepare their online presentations. These can either be live or recorded. In both cases, they will be presented to the evaluation committee.  Alternatively, students are encouraged to pitch their ideas in front of their evaluators. Check out the reference below to learn how to make the perfect pitch <sup>32</sup> .
Day 13-14. Closure.	Winners are announced, learnings reviewed, and the event is closed thanking everyone.

Finally, the table below represents a set of recommendations of activities to plan in preparation to your hackathon.

Recommendations	
<b>Budget</b> <i>Double check the budget</i>	Double check the budget. Check whether it is enough for all the planned activities, costs, needs and prizes.

<sup>32</sup> To learn more about how to pitch an idea, click here: <https://online.hbs.edu/blog/post/how-to-pitch-a-business-idea>

<b>Timeline</b> <i>Draft a timeline</i>	Prepare a detailed timeline and share it with participants.
<b>Workshops</b> <i>Arrange workshops</i>	Arrange for workshops or information-sharing sessions for potential participants: <ul style="list-style-type: none"> <li>• Use the videos from Trustworthy AI project before the event.</li> <li>• Prepare the session with the card deck to break the ice while introducing the topic at hand.</li> <li>• Prepare the workshop on the 7-step process.</li> </ul>
<b>Communication</b> <i>Send reminders and ensure participations</i>	Start sending reminders to attendees 7 to 10 days before the event to participants as well as speakers and other helpers (mentors, judges, etc.).  Additionally, confirm attendance couple of days prior to the event.
<b>Supplies - (onsite &amp; hybrid only)</b> <i>Purchase/arrange the required supplies</i>	Purchase supplies: stationery, disposable utensils, food and beverages, camera, as well as contact and sign up food caterers and miscellaneous vendors if applicable.
<b>Directions/transport - (onsite &amp; hybrid only)</b> <i>Share directions (itinerary) and arrange transport for mentors/speakers.</i>	Get the travel itinerary of attendees and arrange for cost-effective and efficient transportation, if applicable (specially for speakers and mentors). Students shouldn't need travelling, unless the venue is outside campus.
<b>Briefing session</b> <i>Organise a briefing session with the team</i>	A day before the hackathon, go through the event with your organising team.
<b>Last minute changes</b> <i>Ensure communication of any changes</i>	Ensure any last-minute changes in the schedule are communicated to the attendees via social media or in-person.

## 5. The day of the event

### Summary

Upon the completion of this step, organisers will:

- Gain an understanding of the must dos on the day of the event.

### 5.1. The moment of truth

The time has come, it is the day of the Ethical AI Hackathon. Prepare the venue in advance, to make sure all chairs, tables and accessories are ready and working, as there is no time to lose during the hackathon. Place signs to guide attendees; it is especially important to point to the registration table as this will be the first contact for participants. You can use the registration form (annex 1) to gather information about participants if they are not known already (for instance, if they are students from your class, this part could be skipped). However, in exchange, if the event is small, all participants can introduce themselves to break the ice.



**Overall directions for the D-Day (adapted from Tauberer<sup>33</sup>):****A) Welcoming session**

- Introduce the organisers
- Thank the venue and sponsors
- Explain the history and purpose of the event
- Mention the code of conduct
- Explain logistics: the schedule of workshops, lunch, end time...
- Share the agenda of the event with the previous timings
- Encourage people to take and share session notes and to record progress on projects
- Introduce the task at hand, the real case, and the related Trustworthy AI requirement.
- Introduce the process students will follow

After groups are formed and they have the chance to draft a first idea, they should pitch their project to either the expert or to everyone, so they can get early feedback before the real work begins.

**B) During the day:**

Have someone managing the hacking room. Go around to check that every project is going smoothly. See if anyone needs anything or cannot find something to work on. Keep people on the overall schedule. Alert everyone when it is time for lunch and one hour before the presentation session. Leading up to wrap-up, make sure each project is prepared to explain what they did.

Have someone managing workshops. Make sure workshops stay on schedule, that participants are understanding the leader, can hear the leader from the back of the room, etc. Be around to ensure that the workshop leader doesn't have any technology problems. An organiser should be always available to help.

**C) Final pitching session:**

A pitching session<sup>34</sup> gives everyone a chance to hear what their peers have worked on during the day. Ask students to report what they accomplished or what they learned (especially for workshop participants). Give folks rounds of applause.

In large groups, have each project report on its accomplishments. If possible, let them show their work on the projector. But keep things quick. By this point projects may have a lot to say. Keep each project to 1 or 2 minutes, and if they are going to show something on the projector make sure it is ready before the wrap-up session begins.

Recommendations	
<b>Venue</b> <i>Prepare the venue</i>	<ul style="list-style-type: none"> <li>• Set up the chairs, beanbags, and tables.</li> <li>• Get the premises, including the dedicated hacking, snacking, and recreational areas and restrooms, clean and ready.</li> <li>• Place proper signs to guide attendees.</li> </ul>
<b>Hardware issues</b> <i>Check possible power and hardware issues</i>	<ul style="list-style-type: none"> <li>• Set up the chairs, beanbags, and tables.</li> <li>• Get the premises, including the dedicated hacking, snacking, and recreational areas and restrooms, clean and ready.</li> <li>• Place proper signs to guide attendees.</li> </ul>
<b>Registration desk</b> <i>Prepare your registration desk to check in participants</i>	<ul style="list-style-type: none"> <li>• Request IDs, liability waivers, and parents' consent form for minors</li> <li>• Provide promotional material (pamphlets,</li> </ul>

<sup>33</sup> Tauberer, J. (2017). How to run a successful Hackathon. Available at <https://hackathon.guide/>.

<sup>34</sup> To learn more about how to pitch an idea, click here: <https://online.hbs.edu/blog/post/how-to-pitch-a-business-idea>

	name tags, and login credentials)
<b>Welcome speech(es)</b> <i>Welcome you attendees</i>	<ul style="list-style-type: none"> <li>• Present the hackathon objectives, the schedule/timeline (like the one above), and the rules.</li> <li>• Introduce the organisers volunteers, speakers, and hackers.</li> <li>• Address all participants' potential questions, doubts, or concerns.</li> </ul>
<b>Supervision</b> <i>Ensure supervision throughout the session</i>	<ul style="list-style-type: none"> <li>• Keep a constant supervision on the main room and on the workshops.</li> </ul>
<b>Social media</b> <i>Update social media</i>	<ul style="list-style-type: none"> <li>• Constantly update social media to help maintain an exciting atmosphere.</li> </ul>

## 5.2. Online and hybrid hackathons: the moment of truth

On the day you kick off your online (or hybrid) hackathon similar considerations need to be taken into account:

### A) Welcoming session

- Introduce the organisers
- Explain the history and purpose of the event
- Mention the code of conduct
- Explain logistics: the timeline, workshops... Share the agenda.
- Encourage people to take and share session notes and to record progress on projects
- Introduce the task at hand, the real case, and the related Trustworthy AI requirement.

### D) Trouble shooting session:

Between the kick-off session and the final session, organise a one-to-one trouble shooting session with each group of participants. During this meeting your hackathon participants will be able to raise any issue they have encountered in the process (be it technical or knowledge-based), as well as receive guidance/mentorship to proceed forward with their project.

### E) Final pitching session:

As already mentioned above, the final pitching session<sup>35</sup> is an opportunity for participants to outline in a structured and business-like way their work project. Organise an online/hybrid event that include all the hackathon participants. This will also provide a great opportunity for different groups to connect, and further work together on project ideas.

## 6. Post-event follow-up

### 6.1. Consolidating learnings and bonds

#### Closing session:

- Thank the venue and sponsors.
- Thank the attendees and co-organisers.
- If there is a post-event (e.g., a dinner, direct people to it or ask a volunteer to lead people over.

Finally, once all the participants are gone, make sure the venue is returned to its original state:

- Clean up
- Remove signs
- Check for lost items

Get nice videos and photos of the event for dissemination purposes:

- Do a thorough analysis of the participant data and any other relevant statistics, channels used for outreach, quality of the hackers and their submissions, and get feedback from the attendees.
- Follow-up blogs, tweets, emails, and demo videos or presentations are great after-event tools to maintain the “connect.”
- For internal hackathons too, communicating details about the events, hacks, and winners plays a big part in boosting the University or other institution image, be it in terms of student satisfaction, collaboration, or innovation; companies or sponsors could also recruit the best talent or roll out feasible projects after the hackathon or fund/incubate the best ideas.

### 6.2. Assess learners' attainment

To assess learners' attainment of learning outcomes, educators may use a pre- and post-assessment of how confident learners feel about the knowledge and competences. The template (Annex 2), which is provided with the

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<sup>35</sup> See 34.

current guide, should be used both before and after participating in the Trustworthy AI Hackathon. You will compare the results from before and after participation to see if there has been an improvement.

Recommendations	
<b>Wrap-up the event</b>	<ul style="list-style-type: none"> <li>• Wrap-up the event and clean everything.</li> </ul>
<b>Note your positive and negative feedback</b>	<ul style="list-style-type: none"> <li>• Write down everything that went right so you can repeat it next time.</li> <li>• Write down everything that went wrong so you can avoid it next time.</li> </ul>
<b>Financial recap</b>	<ul style="list-style-type: none"> <li>• Compute how much the event cost in total and per participant, for reference.</li> </ul>
<b>Attendees' feedback</b>	<ul style="list-style-type: none"> <li>• Share surveys with attendees to gather their feedback on the participation to the event</li> </ul>
<b>Social media</b>	<ul style="list-style-type: none"> <li>• Write a blog/social media post about the event.</li> </ul>
<b>Dissemination</b>	<ul style="list-style-type: none"> <li>• Disseminate the results externally and internally, and maintain the connections made.</li> </ul>

# Annexes

## Annex 1 – Registration form

*Please provide the following information about yourself (each team member must fill in this part)*

Name: \_\_\_\_\_

Surname: \_\_\_\_\_

Faculty: \_\_\_\_\_

Course: \_\_\_\_\_

Year of enrolment: \_\_\_\_\_

Learning hackathon experience: advanced // intermediate // beginner

Briefly motivate your choice to join the Trustworthy AI hackathon

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Please provide the following information (this information should be provided only once by the team leader).*

Team name: \_\_\_\_\_

Team leader: \_\_\_\_\_

Team components:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_

*Annex 2 – pre-and post-assessment of the trustworthy AI*

To assess learners' attainment of learning outcomes, educators may use a pre- and post-assessment of how confident learners feel about the knowledge and competences. The current template should be used both before and after participating in the Trustworthy AI Hackathon. You will compare the results from before and after participation to see if there has been an improvement.

## Assessment of single components

On a scale of 1-10 rate your skill level, with 1 = not skilled and 10 = highly skilled, indicate how skilled you perceive yourself to be prior/after the course in the following:

### ***Trustworthy AI knowledge***

1. The ethical concerns of Artificial Intelligence \_\_\_\_
2. The concept of Trustworthy AI \_\_\_\_
3. The HLEG AI guidelines \_\_\_\_
4. Trustworthy AI Hackathon \_\_\_\_

Average trustworthy AI knowledge score: \_\_\_\_

### ***Communication & teamwork skills***

1. Working in a team to solve a problem \_\_\_\_
2. Leading a group \_\_\_\_
3. Negotiating solutions \_\_\_\_
4. Sharing tasks \_\_\_\_
5. Actively listening to others \_\_\_\_
6. Explaining your ideas clearly to others (verbally) \_\_\_\_
7. Accepting differences of opinion \_\_\_\_
8. Conflict resolution \_\_\_\_
9. Sharing knowledge \_\_\_\_
10. Making an informed decision quickly \_\_\_\_

Average communication and teamwork score: \_\_\_\_

### ***Planning and self-awareness***

1. Setting realistic goals \_\_\_\_
2. Using my time effectively \_\_\_\_
3. Identifying my strengths and weaknesses \_\_\_\_
4. Stay motivated despite setbacks \_\_\_\_
5. Staying level-headed under pressure \_\_\_\_
6. Task prioritisation \_\_\_\_
7. Following the rules that are set out \_\_\_\_

Average planning and self-awareness score: \_\_\_\_

### ***Creativity***

1. Developing new ideas \_\_\_\_
2. Being curious \_\_\_\_
3. Defining problems \_\_\_\_
4. Identifying opportunities \_\_\_\_
5. Seeing the end goal and working backward to achieve it \_\_\_\_

Average creativity score: \_\_\_\_

**Overall assessment**

Overall, indicate how skilled you perceive yourself to be prior/after the course:  
*On a scale of 1-10 rate your skill level, with 1 = not skilled and 10 = highly skilled*

1	2	3	4	5	6	7	8	9	10
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**Post assessment questions (use only in post-assessment phase)**

1. What were your main takeaways from the event?
  
  
  
  
  
  
  
  
  
  
2. How do you feel about trustworthy AI?
  
  
  
  
  
  
  
  
  
  
3. Would you participate again in a similar event, or would you suggest to a friend/peer?
  
  
  
  
  
  
  
  
  
  
4. What would you change in the event?