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Hackathon Event Methodology

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What is Hackathon?

Introduction

The word hackathon is a combination of the words "hack" and "marathon". The history of the first Hackathon dates back to 1999.
Hackathon, Hacker Days, Code Challenge and although these organizations and events are known by many different names, they are not limited to coding or software development. Nowadays, hackathons can be based on any kind of topic or activity. These events have become platforms that encourage creativity and innovation in various disciplines, not just technology and programming skills. For instance, hackathons organized for developing solutions in healthcare technology, consumer electronics, financial technologies, and even solutions for social issues are available. In these hackathons, participants can produce innovative solutions in areas such as artificial intelligence, machine learning, data processing, smart home and office automation, emergency communication, improvement of health services, and much more.
In terms of social issues, hackathons can promote digital transformation in education, provide innovative solutions for environmental protection, contribute to urban planning and sustainable urbanism projects. They can also increase social awareness and develop solutions for refugee and immigrant support systems, gender equality, and rights of the disabled. Such hackathons can be events that support social change and facilitate participation from various segments. Especially hackathons focused on social entrepreneurship can develop innovative business models and strategies to solve social problems. This approach positions hackathons not only as a platform for technology and software but also as one that produces solutions to a wide range of social issues.
These organizations and events, which go by many different names, are competitions that can be organized for everyone, regardless of age, experience, programming language or subject.
While hackathons ask participants to develop the expected project within a limited time, each project takes you one step further towards becoming a better software developer. Prizes are not the only thing you will gain while competing with both yourself and your competitors, they will also contribute greatly to the personal development of the participants.
In a Hackathon event, participants receive support from mentors specified within the organization, develop effective presentation techniques by making presentations, and communicate with collaborating experts and other Hackathon participants. Hackathon events offer this and much more to participants.

What is Hackathon?

Advantages of hackathon

Hackathon events are organized for purposes such as generating new ideas in a short time, brainstorming solutions to possible problems that the sectors organizing the organization may encounter, or obtaining concrete results by creating products that are suitable for use or prototyped in a short time.

Hackathons have significant benefits from the perspective of the participants

An important point you should mention in your CV

Participating in hackathons not only enhances one's resume by showcasing technical skills, but it also demonstrates capabilities in working under high pressure, creative problem-solving, effective teamwork, and communication. Participants develop their abilities to analyze complex problems, generate innovative ideas, and make quick decisions. Therefore, the hackathon experience is a strong indicator of an individual's overall professional development.

Developing brand new thoughts

Productive environments dedicated to intensive problem-solving, such as hackathons, help generate original ideas and concepts. Because you'll need to work with people from a wide variety of professions, each with their own unique interests and talents, everyone works together to solve the same problem. Giving them a certain amount of time to complete the activity makes it more impressive and motivates people to perform to the best of their abilities.

Product development

The primary goal of a hackathon is to identify a challenge and then, together with other participants, design a set of technologies that can effectively address that challenge. After the hackathon, participants discover that they have one or more prototypes that have the potential to develop into new products.

What is Hackathon?

Hackathons have significant benefits from the perspective of the participants

Healthy competition

Hackathons are events designed for experimental programming and bring together people who share the same interest so they can work together to develop original solutions to technological challenges.
"Technology, science, engineering, arts and mathematics (STEAM) fields are of increasing importance in today's world. However, attracting and supporting the interest of especially female students in these fields requires addressing certain critical areas in education. At this point, STEAM and especially The Hackathon event to support girls in information technologies (IT) can offer various opportunities to teachers and educators.

Developing STEAM Skills:

- The event helps students develop their STEAM skills and increase their interest in these areas.

Focusing on Critical Areas:

- By focusing on supporting girls in STEAM fields, educators can identify critical areas and develop solutions.

Teamwork and Expansion:

- The event allows teachers to strengthen their teamwork competencies and expand their professional network.

What to Do at Hackathon Events?

On the day of the hackathon, people start arriving at the hackathon venue at the appointed time, and there is usually a kickoff event where the organizers tell everyone what the event is about and how it will work.
After that, people form teams and start working on their projects. Things that people might need are usually provided throughout the event, so people can continue working without having to leave to get food, drinks, tools, supplies, etc.
Some hackathons offer prizes for the best projects, but generally people attend just for fun and to meet other people with similar interests.
Many hackathons also offer educational sessions and networking opportunities throughout the event. If you're new to hackathons or programming in general, these can be a great way to learn and practice your skills while hanging out with your peers.

What is Hackathon?

Steps to follow to organize an event like a hackathon.

Define the goal

Before you start organizing, it's important to define the purpose of the Hackathon and the problem you're trying to solve. This helps guide the event and ensures participants are aligned on goals.

Determine the team

Choose a team responsible for organizing and coordinating the event. This team may include personnel from human resources, marketing, technology and other departments.
This multidisciplinary approach not only ensures that all aspects of the hackathon are well-managed but also promotes a sense of collaboration and unity among different departments. It's crucial for the organizing team to have regular meetings and clear communication channels to align their efforts and ensure the smooth execution of the hackathon.

Choose the format

There are different hackathon formats: face-to-face or online. The choice will depend on the purpose of the event and the resources available.

Determine scope and duration

Hackathons are typically time-bound events, where participants come together to work collaboratively on projects within a limited period.
These events can be quite intense, often lasting from 24 hours to a week, challenging participants to rapidly develop their projects.
This time-constrained nature of hackathons is integral to their design, as it encourages creativity, rapid problem-solving, and collaboration under pressure, providing a unique learning and networking opportunity for the participants.

What is Hackathon?

Steps to follow to organize an event like a hackathon.

Identify participants

It is very important to identify the right participants. These could be company employees, subject matter experts, or third-party developers. It is also important to consider diversity of gender, age and experience.

Provide resources

Ensure participants have access to necessary tools and resources, such as software, hardware, a comfortable workspace, food and beverages.

Provide mentoring and support

Mentoring and support play a crucial role in the success of hackathon participants. Providing access to mentors and subject matter experts during the event is essential for guiding teams through technical challenges, brainstorming sessions, and project development phases.

Mentors, often experienced professionals or specialists in their fields, offer valuable insights, feedback, and suggestions, contributing significantly to the learning experience of participants. They help in refining ideas, tackling complex problems, and ensuring that projects are feasible and innovative. This support system not only enhances the overall quality of the projects developed during the hackathon but also enriches the participants' experience by offering a deeper understanding of the subject matter and encouraging collaborative problem-solving approaches. Effective mentorship can turn a hackathon from a mere competition into a transformative educational and professional development opportunity.

Form a jury

A jury should be formed to evaluate the submitted projects and select the winners. The jury must be an expert who can make an accurate assessment.

Reward the winners

It's always a good idea to provide an incentive for participants, such as a cash prize, access to resources, or even promotion opportunities within the company.

CodingGirl Hackathon

The Aim

To encourage girls' education in STEAM and IT fields and to develop strategies and solutions that support them.

(Participants will try to develop creative educational strategies and effective and purposeful methods and techniques to attract girls to these fields.)

Rules

Creating Teams and Participation

- Teams can have a maximum of 5 members. (3 teachers,1 educator, 1 STEAM/IT sector representative)
- Teams cannot include people in privileged positions at the event (volunteer, mentor, jury member, sponsor, etc.).
- Teams may receive support from organizers, volunteers, sponsors and other participants throughout the event.

Projects

- All work must be completed during the hackathon.
- Teams can use an idea they have before the event.
- Although the emphasis is on innovation, it is free to work on previously created ideas.
- However, the quality of the study will be the evaluation criterion.
- Previously worked ideas can also be used, but care should be taken not to reuse the idea.

Resource Usage

Libraries, frameworks, and open source code can be used in projects.
Only codes developed during the event of projects initiated before the event will be evaluated.

Presentation and Evaluation

- The jury will only consider new functionality or added features introduced during the hackathon.
- After the period is up, debugging and minor fixes are allowed, but major changes are not.
- Projects that violate the Code of Conduct will not be allowed.

General rules

- At the discretion of the organizer, teams may

If they violate the Competition Rules and Code of Conduct, they may be disqualified from the event.

CodingGirl Hackathon

Participant profiles and quota

1st Participant Group

Profile:

- Teachers teaching primary school
- Students/girls aged 8-12 and 13-15.

Quota: 15

Teachers who will participate in the event are the main target group of the event and they have an important role in encouraging girls for STEAM and IT fields and supporting their education. Teachers who will participate in the event must have the following qualifications:

- Coming from primary education level.
- Having experience in applying the STEAM approach in educational environments.
- Being willing to develop creative training strategies and methods and techniques.
- Having maximum knowledge in creating educational materials and developing STEM projects.

Teachers' branches are expected to focus on STEAM subjects. Therefore, teachers in the fields of mathematics, science, technology, engineering, design and art will be preferred.

2nd Participant Group

Profile:

- Educators: Teachers teaching primary school
- Students/girls aged 8-12 and 13-15

Quota: 5

Teachers who carry out educational activities in fields other than the STEAM fields of science, technology, engineering, mathematics and art are evaluated in this category. For example, language, social studies, sports, history, geography, etc. teachers from different fields.

Educators who will participate in the event are expected to have the following qualifications:

- Willing to develop creative training strategies and methods and techniques.
- Must have knowledge about creating educational materials and be willing to develop STEM projects.

CodingGirl Hackathon

Participant profiles and quota

3rd Participant Group
Profile:

- STEAM/IT Sector Representatives

Quota: 5

STEAM/IT sector representatives will consist of participants from the technology world and the business sector. STEAM/IT sector representatives may vary in terms of their specific expertise, but they are expected to focus on inspiring girls in the field of technology and science and to be motivated to work collaboratively with teachers and educators on this issue.

Representatives' areas of expertise can be chosen from the following areas:

- Software development and coding.
- Data science and analytics.
- Engineering and design.
- Art and creative technology.
- Robotics and artificial intelligence.
- Computer sciences and information security.

4th Participant Group
Profile:

- Mentors/Professionals specialized in STEAM/IT.

Quota: Maximum 5, minimum 3

Participants may need mentoring and support during the event, so it is important to connect with mentors and experts who can provide guidance. Mentors have an important role in ensuring that the event is successful and productive by helping participants develop their projects and find solutions to their problems.

Mentors are experienced professionals who guide participants. During the CodingGirl Hackathon Program, mentors have the following duties:

- **Guidance:** Answering participants' questions, guiding them and helping them with their projects.
- **Experience Sharing:** To present different perspectives to the participants by sharing their own experiences and knowledge with the participants throughout the event.
- **Problem solving:** To help participants cope with the challenges they face.
- **Motivating:** To inspire participants and motivate them in their projects.
- **Development Monitoring:** Monitor participants' progress and provide feedback.

CodingGirl Hackathon

Scope

Participants will work to develop creative educational strategies and effective and purposeful methods and techniques to attract girls to these fields.

Teams will consist of 5 participants:

- 3 teachers from the 1st participant group
- 1 Trainer from the 2nd participant group
- 1 STEAM/IT Sector Representative from the 3rd participant group

Teams will work on the areas that will be given to them in advance and will create a lesson plan as an outcome to be used in the classroom environment.

Topics to be worked on in the hackathon:

- Health and (Technology)
- Nutrition and (Digital Education)
- Security and (Digital Tools)
- Environmental Awareness and (Technology)
- Lifestyle and (Digital Planning)

Teams have to choose one of 5 basic topics that they can use while working in areas that will be determined in advance for them.

Topics to be used in the work to be done in the hackathon:

- microbit programming,
- creation of mobile widgets,
- creation of online games,
- graphic design,
- 3D printing.

Jury

A jury should be formed to evaluate the projects presented during the CodingGirl Hackathon event and to select projects and studies that meet the specified criteria. The jury should consist of experts who can make an accurate assessment.

During the CodingGirl Hackathon event, an evaluation board consisting of at least 3 experts will be formed. In this board;

- An expert from the technology field coming from the STEM/IT sector.
- A teacher with expertise in the STEAM approach and education.
- ·The psychologist who will evaluate the suitability of the studies or girls.

CodingGirl Hackathon

Jury

Teams will be evaluated according to the following criterias. During the evaluation, participants should try to explain what they did for each criterion in their project.

Technical Adequacy
Does the project effectively use technical knowledge in STEM?
Can the applied methods and technologies provide solutions to real-world problems?

Educational Content and Applicability
Can the project be taught and understood from the perspective of a teacher experienced in STEM education?
Is the educational content appropriate and effective for the intended student audience?

Gender Equality and Inclusion
Will the project attract girls' interest in STEM subjects?
Does the team strive to promote gender equality and create an inclusive educational environment?

Supporting Psychosocial Adaptation and Emotional Well-Being
From the psychologist/guide teacher's perspective, how does the project support students' psychosocial adjustment and emotional well-being?
How does the team balance the feasibility of the project with increasing students' motivation?

Communication and Presentation Skills
Can the team present their project effectively?
How effectively and clearly can they communicate when explaining their projects to jury members and other teams?

Team Collaboration and Leadership
How is the cooperation and harmony between team members?
How is the leadership and distribution of responsibility in the team organized?

CodingGirl Hackathon

Jury

Sustainability and Impact on the Future
Can the project be continued in a sustainable way?
Has the team considered the impact of their project on future STEM education?

Award

At the end of the CodingGirl Hackathon event, a total of €250 will be awarded to the team that produces the most successful work, which will be selected from the evaluation made by the jury.
At the end of the CodingGirl Hackathon Program, all participants must be issued certificates showing that they have successfully completed the event.
Additionally, gifts can be given to participants to increase their satisfaction with the event. For example, you can choose from the following:

- **Thank You Letters:** Sending each participant a personal letter or thank you card thanking them for their contributions.
- **Event T-Shirts and Souvenirs:** Distribution of T-shirts or other souvenirs bearing the project logo or theme to the participants.
- **Post-Event Educational Resources:** Resources for participants to learn more about STEAM and coding. (Books, brochures, gift online courses, etc.)
- **Media Releases:** Post-event media releases to promote participants and their projects.

CodingGirl Hackathon

Sources

Materials and resources during the event are crucial to making the CodingGirl Hackathon Program a success. During the event, it is important for the participants to obtain the materials they need on time, to pay attention to all the details throughout the process, to provide the necessary support to the participants and to coordinate the entire process.

Comprehensive Training Material

- A guidebook or digital material should be prepared for teachers and trainers covering STEM (Science, Technology, Engineering, and Mathematics) and coding subjects. This material should include teaching strategies, effective learning methods, and the basics of STEAM subjects.

Example: Guidebook/brochure, videos, etc.

Participant Materials

- **Writing Materials:** Writing materials such as notebooks, pencils, colored pencils, paper, post-it notes. It should be made available for participants to take notes and write down their ideas.
- **Computers or Tablets:** Participants are required to have computers or tablets to develop their projects, conduct research and prepare presentations. Additionally, internet access must be provided.
- **Prototype Materials:** The materials required to carry out the projects may differ depending on the subject of the projects. Electronic components, robotics kits (microbit- mblock- legoeducation etc.), design materials (3D printer, CNC etc.), cardboard, adhesives, plastic parts and construction materials must be provided for the participants' coding and robotics work.

Organization Materials

- **Tables and Chairs:** Tables and chairs that are comfortable and suitable for collaboration, where participants can work and make presentations.
- **Basic furniture required to organize the event area**
- **Projection and Sound System:**Projector or large screen, sound system for presentations and speeches.
- **Registration Desks and ID Cards:** Tables and supplies used to register participants and issue ID cards or wristbands.

Example: Registration desk, ID cards or wristbands.

CodingGirl Hackathon

Sources

Event Promotion and Advertising Materials

- **Brochures and Posters:** Brochures and posters to promote and publicize the event.
- **Website or Event Application:** Necessary software and design resources to promote the event and facilitate participants' registration.
- **Social media, email and other online promotional tools.**

Food and drink

Service of food and drinks for lunch and snacks.

Participants

- Inviting **15 teachers and 5 trainers** and providing communication and coordination for their organization.
- **Speakers and Representatives to Collaborate with**: Inviting speakers and representatives from the STEAM and IT sector and obtaining confirmation by communicating and coordinating their organizations.
- **Mentors:** Identifying, inviting and coordinating mentors before the event.
- Determining, inviting and coordinating the experts who will serve as a jury in the evaluation commission.

Organization Software and Tools

- Preparation of software and tools for records management.
- Preparation of presentation software for training and sessions.
- Making surveys and evaluation tools available to collect post-event feedback.

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