

Department of Technical Education

State level Smart Hackathon 2025

(Govt. Engineering Colleges of Himachal Pradesh)

Aim: To pitch idea/technological Solutions for Sustainable Development in Himachal Pradesh

Overview: Himachal Pradesh, known for its stunning natural beauty and rich biodiversity, is also home to several challenges related to infrastructure, sustainability, and economic development. As engineering students, there is the unique opportunity to design solutions that address some of the pressing issues of the state, while ensuring that development is in harmony with the environment and local culture. The goal of this hackathon is to create technology-driven solutions that help improve the quality of life for people in Himachal Pradesh.

Challenge: Develop a technological solution, prototype, or system that addresses at least one of the following challenges unique to Himachal Pradesh, with a focus on sustainability, accessibility, and inclusivity.

- 1. Smart Tourism Management:** Himachal Pradesh is a popular tourist destination. However, tourism-related infrastructure often faces challenges related to crowd management, waste management, and environmental impact. Design an AI-powered system, app, or platform that helps manage tourist flows, offers real-time information to tourists, and ensures minimal environmental impact (e.g., waste reduction, eco-friendly travel options).
- 2. Renewable Energy Solutions for Remote Villages:** Many remote areas in Himachal Pradesh still lack access to reliable electricity. Leverage renewable energy sources such as solar, wind, or micro-hydropower systems to design affordable, decentralized energy solutions. Consider using IoT-based sensors for real-time monitoring and control to enhance efficiency and sustainability.
- 3. Disaster Management and Early Warning System:** The hilly terrain of Himachal Pradesh is prone to natural disasters such as landslides, floods, and earthquakes. Create a disaster management system or early warning application that uses IoT, sensors, or machine learning algorithms to detect potential disasters early and notify communities and authorities in real-time.
- 4. Water Conservation and Management:** Due to its mountainous geography, Himachal Pradesh has varying water availability, and there is a need for effective management and conservation strategies. Design a system that monitors water usage in both urban and rural areas, offers smart irrigation solutions for farmers, and encourages water conservation through alerts and insights.
- 5. Smart Agricultural Solutions for Hilly Terrain:** Agriculture is a major part of Himachal Pradesh's economy, but farmers face difficulties related to the hilly terrain, unpredictable weather, and lack of modern farming techniques. Develop an IoT-based platform or app that helps farmers optimize crop production, manage irrigation, predict weather conditions, and improve yields in the challenging hilly landscapes.
- 6. Waste Management and Recycling Solutions:** With rapid urbanization and a rise in waste generation, managing waste effectively is becoming a challenge. Develop an innovative solution for waste segregation, recycling, or waste-to-energy technologies that can be implemented in both urban and rural areas of Himachal Pradesh. The solution should also raise awareness about sustainable waste practices among local communities.
- 7. Transport Solutions for Hilly Roads:** The hilly terrain makes transportation a challenge in Himachal Pradesh. Design a system or app that can optimize routes for public transport, reduce traffic congestion in key tourist spots, and provide real-time traffic updates for both locals and tourists. Incorporate electric vehicle (EV) solutions to promote eco-friendly travel options in the state.
- 8. E-Health Solutions for Remote Areas:** Access to healthcare in remote and underserved areas of Himachal Pradesh can be limited. Develop a telemedicine platform, mobile health app, or diagnostic tool that connects rural areas with medical professionals, provides health monitoring services, or offers virtual consultations for patients in need.

Deliverables:

- A working prototype or demonstration of your solution.
- A user-friendly interface or mobile app, if applicable.
- A presentation that explains the technical approach, expected impact, and scalability of the solution.

Hackathon Guidelines for Participants

1. Eligibility and Team Formation:

- Participants can enter as individuals or in teams (as per format).
- Ensure that all team members should be of the same college.
- Teams should include at least one faculty mentor.

2. Problem Statements:

- Students will be provided with problem statements for which you will need to develop solutions.
- Read the problem statements carefully and ensure that your team's idea aligns with the problem. You can brainstorm your ideas but be sure to focus on solving real-world issues.
- Organize and divide the work among team members based on their strengths.

3. Tools and Technologies:

- Students are encouraged to use open-source tools, libraries, and APIs etc.
- Use any programming language, software, or hardware that you feel will help create your solution, but make sure they are within the allowed tools specified by the event organizers.
- If the event has sponsors or partners, they may provide resources like APIs, cloud credits, or data sets.

4. Timeframe:

- Hackathons will be of one day (8 hours)
- Time management is crucial. Plan your project into small tasks and milestones to make sure you complete it on time.
- Teams are expected to submit their final product (working prototype, app, platform, etc.) by the deadline.

5. Project Development and Submission:

- Focus on creating a working prototype (even if it's just a demo) that addresses the problem statement.
- Students may be asked to submit code, a video demo, and a presentation. Ensure your submission is clear and concise.
- Students should Document code and keep track of the changes made so that it's easy to explain during the presentation.

6. Final Presentation:

- Each team will have a limited amount of time (e.g., 5-10 minutes) to present their solution to the judges.
- The presentation should include:
 - The problem you're solving and why it's important.
 - A demonstration of your solution or prototype.
 - The technology stack you used and any challenges you faced.
 - Potential impact and scalability of the solution.
 - Be ready to answer questions from judges about your project.

7. Evaluation/Judging Criteria:

- **Innovation:** Is the solution unique, creative, and well-thought-out?
- **Impact:** How effectively does the solution address the problem statement? Does it have real-world applications?
- **Feasibility:** Can the solution be implemented in a practical, scalable way?
- **User Experience:** Is the solution intuitive and easy to use?

- **Technical Complexity:** Did the solution involve the use of complex technologies or algorithms? Was it well-built?
 - **Presentation:** Was the project communicated clearly and effectively to the judges?
8. **Phases of the (SLSH) Hackathon 2025:**
- **Phase 1: Problem Statement Announcement.**
 - **Phase 2: College Level Competition (Round 1).**
 - **Phase 3: Nomination of Top 3 teams for State Level Competition.**
 - **Phase 4: State Level Competition (Round 2).**
9. **Code of Conduct:**
- **Respect and Teamwork:** All participants must adhere to ethical practices. Collaboration and teamwork are essential.
 - **Originality:** All submissions must be original work developed during the hackathon. Plagiarism will result in disqualification.
 - **Confidentiality:** Teams are expected to respect confidentiality rules regarding intellectual property.
10. **Annexure and Formats:**
- *Team authorization template (Annexure-1)*
 - *Idea Presentation Template (Annexure-2)*
 - *Timeline (Annexure-3)*



STATE LEVEL SMART HACKATHON 2025



TITLE PAGE

- **Problem Statement ID –**
- **Problem Statement Title –**
- **Team Name –**



Your
Team
Name

IDEA TITLE



◆ Proposed Solution (Describe your Idea/Solution/Prototype)

- Detailed explanation of the proposed solution
- How it addresses the problem
- Innovation and uniqueness of the solution

Your
Team
Name

TECHNICAL APPROACH



- Technologies to be used (e.g. programming languages, frameworks, hardware)
- Methodology and process for implementation (Flow Charts/Images/ working prototype)

Your
Team
Name

FEASIBILITY AND VIABILITY



- Analysis of the feasibility of the idea
- Potential challenges and risks
- Strategies for overcoming these challenges

Your
Team
Name

IMPACT AND BENEFITS



- Potential impact on the target audience
- Benefits of the solution (social, economic, environmental, etc.)

Your
Team
Name

RESEARCH AND REFERENCES



- Details / Links of the reference and research work

IMPORTANT INSTRUCTIONS



Please ensure below pointers are met while submitting the Idea PPT:

1. Kindly keep the maximum slides limit up to six **(6)**. (Including the title slide)
2. Try to avoid paragraphs and post your idea in points /diagrams / Infographics /pictures
3. Keep your explanation precise and easy to understand
4. Idea should be unique and novel.
5. You can only use provided template for making the PPT without changing the idea details pointers (mentioned in previous slides).
6. You need to save the file in PDF and No PPT, Word Doc or any other format will be supported.

Note - You can delete this slide (Important Instructions) when you upload the details of your idea on google form.

H.P. Engineering College State Level Smart Hackathon 2025

REGISTRATION FORM

Date: /2025

Sub: H.P. Engineering College State Level Hackathon 2025 – Nomination

I am pleased to nominate the below team from our department to participate in college level Hackathon 2025.

Problem Domain:

Brief introduction about an Idea:

Team Name:

	Name	Roll No/ID	Gender (M/F)	Email id	Mobile no.	Stream	College Name
Team Leader							
Team Member							
Team Member							
Team Member							
Faculty Mentor							
Faculty Mentor							

Instructions:

1. Team must contain one leader and three members.
2. There should be one girl student in the team.
3. Team must contain one faculty mentor.
4. Submit duly filled form to Coordinator Hackathon.

Sincerely,

**Signature of
Team Leader**

Head of the Department

Director Cum Principal

Department of Technical Education

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Timeline for different phases of the Hackathon:-

S.No	Event Name	Date	Venue
1	Problem Statement Announcement	15 th February, 2025	- - -
2	College Level Competition	01 st March, 2025	At respective College Level
3	Nomination Top 3 Contestant	02 th March, 2025	- - -
4	State Level Competition	06 th March, 2025	GHEC Bandla