



ReGen Hackathon 2025

ORGANISED BY:

INSTITUTE INNOVATION COUNCIL (IIC),
NATIONAL INSTITUTE OF TECHNOLOGY
MANIPUR

Unleash Innovation - Explore Technology - Shape Tomorrow

Empowering innovation to unlock digital solutions
for a sustainable future at the ReGen Hackathon.

HACKATHON BROCHURE

About Us

As an Institute of National Importance, we are committed to shaping the younger generation's future through innovative solutions.

Our focus is on sustainable development, aiming to inspire a brighter tomorrow. By addressing real-world challenges, we empower students to contribute meaningfully to society.

Through this hackathon, we encourage students to tackle pressing real-life problems with creativity and ingenuity. It is an opportunity to apply theoretical knowledge to practical scenarios, fostering a deeper understanding of real-world complexities. This initiative serves as a platform to ignite innovative thinking.

The hackathon challenges participants to push the boundaries of their problem-solving abilities. It sharpens critical reasoning and encourages collaborative innovation among bright minds. Together, we aim to develop impactful solutions that drive sustainable progress.

TOPICS

1. Augmented Reality (AR) and Virtual Reality (VR):

- **AR for Industrial Maintenance:** Develop an AR application that overlays real-time instructions and diagnostics on industrial machinery to assist technicians in maintenance and repair.
- **VR for Healthcare Training:** Create a VR simulation that helps medical students practice surgical procedures in a risk-free environment.
- **AR Navigation in Complex Buildings:** Design an AR-based indoor navigation app for large facilities like hospitals, airports, or universities.

2. Quantum Computing:

- **Quantum Optimization for Logistics:** Develop quantum algorithms to optimize industry logistics and supply chain management.
- **Quantum Cryptography Toolkit:** Create a user-friendly toolkit for developers to implement quantum-safe encryption in applications.
- **Simulation of Quantum Systems:** Build a platform to simulate quantum systems for educational and research purposes.

3. Green Energy Solutions:

- **AI for Solar Panel Efficiency:** Design an AI model that predicts and optimizes solar panel performance based on weather and maintenance data.
- **Decentralized Energy Grids:** Create a blockchain-based platform for decentralized energy sharing in small communities.
- **Smart Energy Storage Systems:** Develop a solution to monitor and optimize energy usage in battery storage systems.

4. Space Technology and Exploration:

- **AI for Satellite Image Analysis:** Build an AI-based tool to analyze satellite imagery for environmental monitoring.
- **Cost-Effective Rocket Propulsion:** Propose a prototype for a low-cost propulsion system suitable for small satellites.
- **Space Debris Tracking:** Develop a system to predict and mitigate space debris collisions using machine learning.

5. Smart Transportation:

- **AI for Traffic Management:** Develop an AI-based system to optimize traffic signals and reduce congestion in urban areas.
- **Autonomous Vehicle Navigation:** Create algorithms for self-driving cars to navigate complex cityscapes safely.
- **Public Transport Optimization:** Design a solution to analyze and improve public transport schedules and routes using big data.

6. Disaster Management:

- **AI for Flood Prediction:** Build an AI system to predict floods using real-time weather and terrain data.
- **Drone-Based Rescue:** Develop a drone system for assessing disaster-affected areas and assisting in rescue operations.
- **Disaster Coordination App:** Create a mobile app that helps volunteers and organizations coordinate disaster relief efforts in real time.

7. FoodTech:

- **Blockchain for Food Traceability:** Design a blockchain system to track the journey of food from farm to table to ensure quality and safety.
- **AI-Powered Personalized Diet Plans:** Create an AI application that generates personalized meal plans based on user health data and preferences.
- **Food Waste Reduction Platform:** Develop a platform that connects surplus food producers with NGOs or consumers to reduce food waste.

8. Digital Agriculture:

- **IoT for Precision Farming:** Design an IoT system to monitor soil conditions and recommend optimal farming practices.
- **AI for Crop Disease Detection:** Build an AI tool to identify crop diseases using images captured by drones or smartphones.
- **Blockchain for Farm-to-Market Tracking:** Create a blockchain-based system to provide transparency in the agricultural supply chain.

9. Sustainable Manufacturing:

- **Recycling Plastic into 3D Printing Coils:** Design a system that converts discarded plastics into 3D printing filaments.
- **Energy Recovery from Industrial Waste:** Develop a process to extract and reuse energy from waste materials generated during manufacturing.
- **AI for Waste Segregation:** Create an AI system to automate recyclable and nonrecyclable waste segregation in manufacturing plants.

10. Hardware Robotics:

- **Warehouse Automation Robots:** Design robots capable of sorting, picking, and transporting items in large warehouses.
- **Agricultural Harvesting Robots:** Develop hardware for robots that can efficiently harvest crops and reduce manual labor.
- **Humanoid Robots for Assistance:** Create a hardware prototype for humanoid robots to assist in healthcare, education, or customer service.

EVALUATION CRITERIA:

- Each team should select a problem statement from a topic.
- Applications will be evaluated based on creativity, feasibility, technical proficiency, and alignment with the hackathon's objectives.
- Extra points for the Team Diversity.
- Teams should submit their PPT using (RG_Team Name_Topic number) format.
Example: RG_NITMN_1

ELIGIBILITY:

- Open to students with a passion for technology and innovation.
- Familiarity with programming, data analysis, and industry-related tools will be advantageous.
- Each team should consist of 3-4 members.

TIME-LINE

Proposal Submission:

Submit a 2-slide Presentation and a 2-minute video outlining the problem and your innovative approach to solving it.

1 Feb - 8 Feb (Online)



Prototype Development:

Shortlisted teams must develop a full solution of 10-12 slide presentations and a functional prototype for the finals.

17 Feb - 28 Feb (Online)

48 Hour Hackathon: Finale:

Shortlisted teams will present their prototype in a developed state in a live discussion with judges showcasing their innovation, technical skills, and impact.

17 Mar - 19 Mar (Offline)





PRIZE POOL



₹ 30,000 + Additional Perks

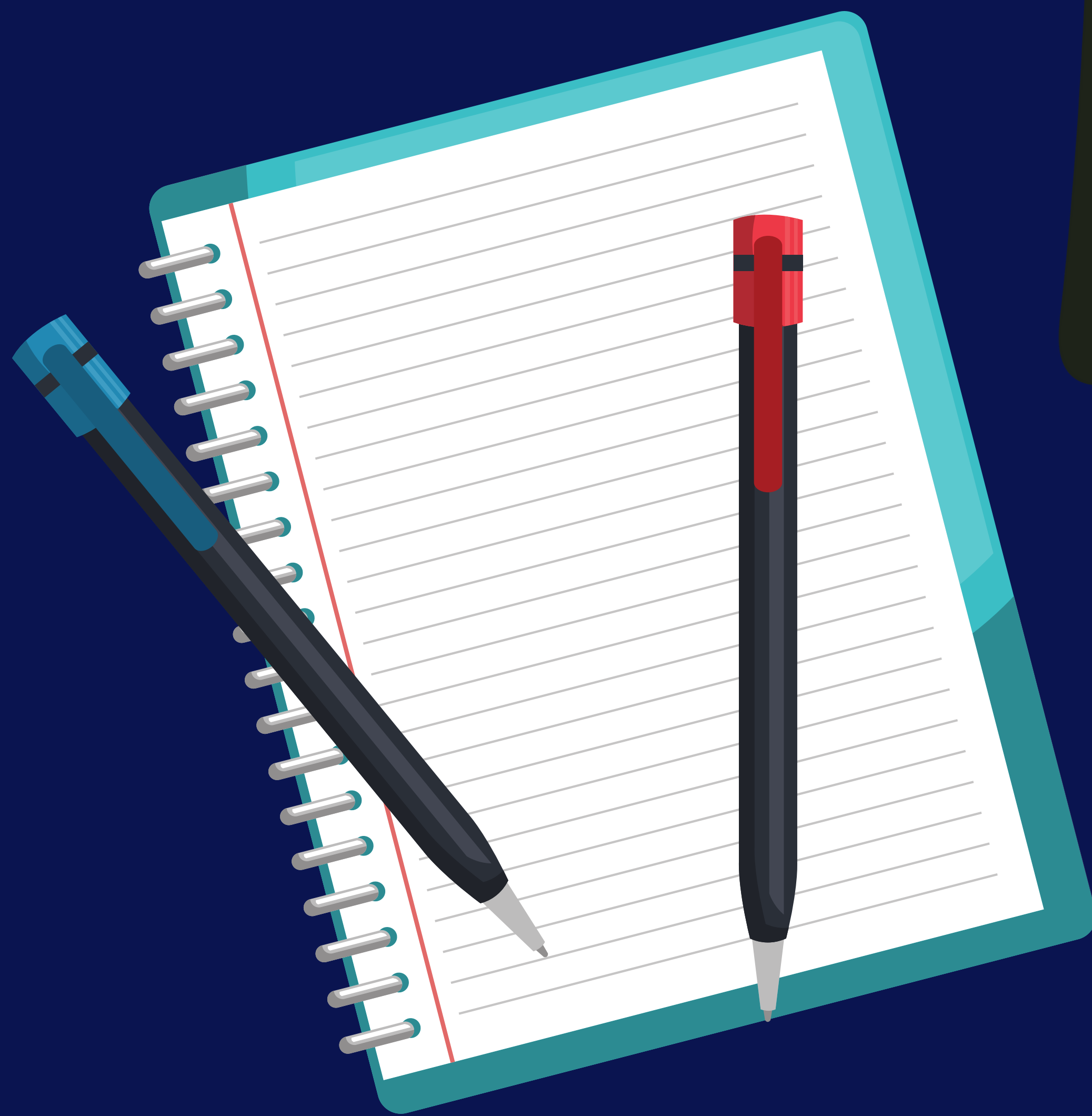


₹ 15,000 + Additional Perks



₹ 10,000 + Additional Perks

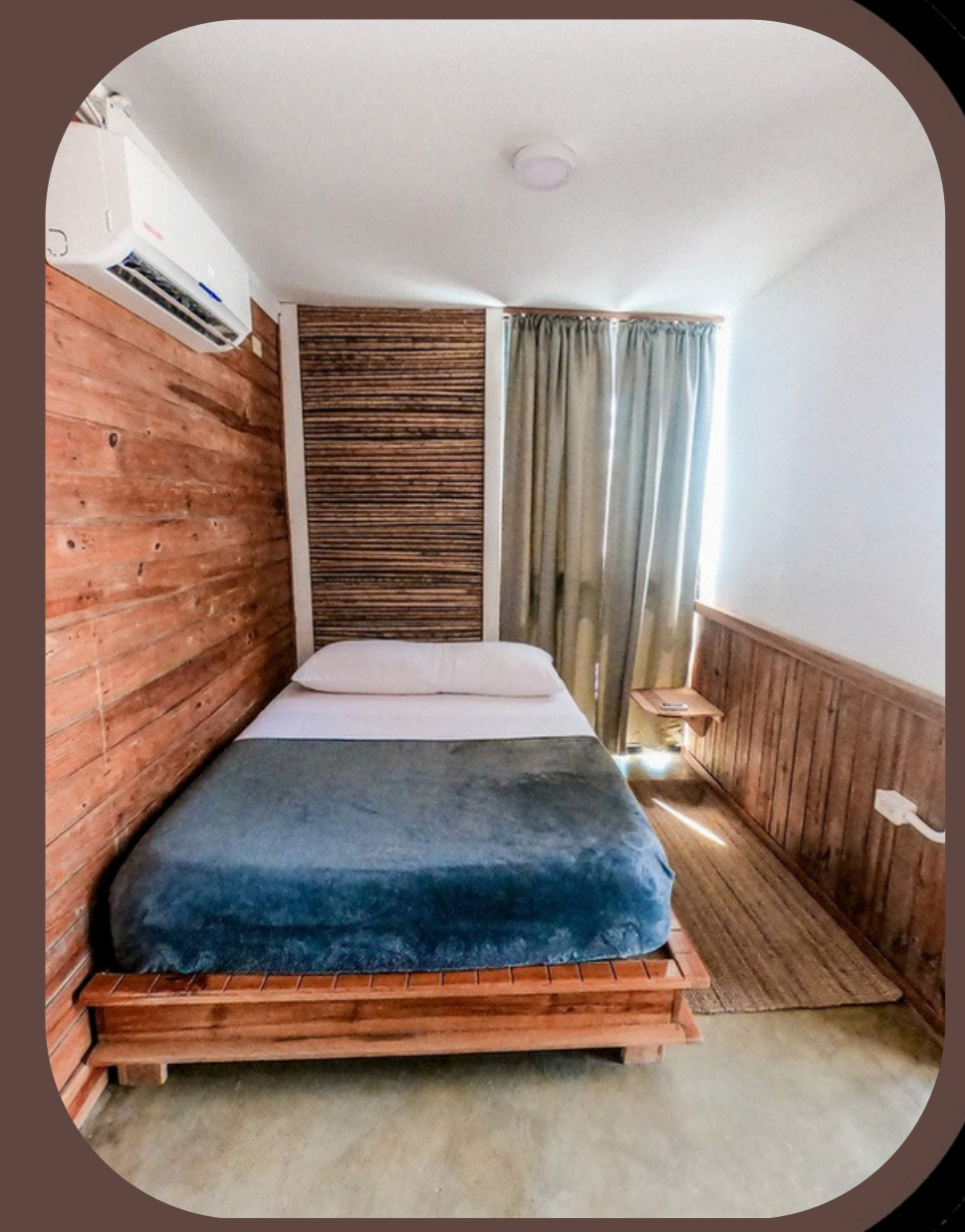
ADDITIONAL PERKS



FACILITIES

Free Accommodation:

Free accommodation facility within the campus



Food accessibility :

Daily 3 Meals (Breakfast, Lunch & Dinner) available within the campus.

 Diamond Sponsors

SPONSERED BY:  Platinum Sponsors

 Gold Sponsors

ORGANISED BY: IIC NIT MANIPUR

CO-ORDINATORS: Dr.Kalyan Mondal (IIC Member)
Dr.Sabindra Kachhap (IIC Member)

CONTACT DETAILS:

Email: hackathon@nitmanipur.ac.in

Phone: +91 94906 07390 (John Williams)

+91 93475 15694 (Harsha Vardhan)

REGISTRATION

STARTS FROM 20TH JAN 2025

