
SHAHJALAL UNIVERSITY OF SCIENCE AND
TECHNOLOGY

Sylhet, Bangladesh

bKash presents SUST CSE
CARNIVAL 2026
Codex Community HACKATHON

In association with Codex and Poridhi

Official Rulebook

All participating teams of the **Codex Community Hackathon** will receive **OpenAI API Credits** from Codex and access to **Poridhi's Puku Editor and CLI** for unlimited AI coding assistant support during the 24-hour hackathon.

*Top 3 winning teams will additionally receive exclusive **Codex Credit Awards** as part of their prize package.*

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1. The Event

The **AI & API Hackathon** is the flagship competition of **SUST CSE Carnival 2026**, organized by the CSE Society of the Department of Computer Science and Engineering at Shahjalal University of Science and Technology (SUST), Sylhet. The event brings together creative thinkers from across Bangladesh to build intelligent, impactful software products that meaningfully combine Artificial Intelligence with real-world API integrations.

The hackathon is supported by **Codex** and **Poridhi** as separate technology partners. Codex will provide OpenAI API Credits for participants during the hackathon and Codex Credits as part of the prize package, while Poridhi will provide access to the Puku Editor and CLI for unlimited AI coding assistance.

Teams will work on a full-stack functional product — **Web or Android or Both** — from ideation to execution within **24 continuous hours**. The problem statement will be revealed at the Opening Ceremony. Solutions do not need to be production-ready, but must be **functional, demonstrable, and aligned** with the announced scenario.

Mentors and problem-setters from industry and academia will be available on-site throughout the event. The expected outcome is a working prototype that demonstrates **process understanding, efficiency, scalability, and creative use of AI technology**.

2. Competition Structure

The hackathon is structured across **three phases**. Teams must pass through the preliminary screening to qualify for the main 24-hour on-site event.

2.1 Phase 1 — Mock Preliminary (Online)

A **1.5-2 hour** preparatory session released online before the official rounds begin.

- Familiarises participants with the submission portal, evaluation environment, and expected format.
- A mock problem/scenario is released so teams understand the expected structure.
- **No elimination occurs.** All registered teams are encouraged to participate.

2.2 Phase 2 — Online Preliminary Round

A **3 hour** online qualification round where teams solve screening challenges to advance to the main event.

- Teams are evaluated on problem-solving ability, technical reasoning, and solution quality.
- The **top 40 teams** will be selected to participate in the main on-site hackathon.

2.3 Phase 3 — Main 24-Hour On-Site Hackathon

An intensive **24-hour** on-site hackathon for all qualifying teams, held at the SUST campus.

- The problem statement/scenario is announced at the Opening Ceremony.

- Teams must develop their **entire solution from scratch** within the 24-hour window.
- Mentors from industry and academia are available on-site throughout the event.
- A minimum of **10 teams** will be selected for the final presentation round.

3. Rules & Guidelines

3.1 Team Composition

- Each team must consist of **1–3 members**.
- All participants must be currently pursuing undergraduate degrees. (**Graduates of session 2020-21 can participate**)
- **Cross-university teams are allowed** — members from different universities may form a team.
- No participant may be a member of more than one team.
- All participants must be **physically present** at the venue throughout the main hackathon.

3.2 Institution Requirements

- Participating institutions must be registered under the **University Grants Commission (UGC)** of Bangladesh.
- Participation is limited to students of **Bangladeshi institutions only**.

3.3 Project Rules

- Participants must **create a new GitHub repository on-site** immediately after the Opening Ceremony and submit it at the end of the competition.
- The project must be developed **entirely on the day(s) of the hackathon**. Any project developed fully or partially before the event will not be accepted.
- Teams may use publicly available open-source libraries, frameworks, APIs, and SDKs. All must be credited in the project **README**.
- Use of AI-assisted tools (e.g., GitHub Copilot, ChatGPT) is permitted for *suggestions and debugging only*. Core architecture and logic must be the team's own work.
- Teams may bring pre-designed wireframes or planning documents. **No pre-written source code** may be brought into the venue.
- A scenario and set of tasks will be presented at the Opening Ceremony. Teams are free to use any language, tool, or framework as long as they fulfil the task requirements.

IMPORTANT

Any unfair attempts, misbehaviour, or breach of rules will result in **immediate disqualification**. The organizers reserve the right to make final decisions on all matters.

4. Facilities

What We Provide

- **OpenAI API Credits from Codex — Provided for All Teams:** Every qualifying team of the **Codex Community Hackathon** will receive **OpenAI API Credits from Codex** to integrate AI capabilities into their hackathon projects at no cost.
- **Poridhi Puku Editor and CLI — Unlimited AI Coding Assistant:** **Poridhi** will provide participants with access to the **Puku Editor and CLI** for unlimited AI coding assistant support during the hackathon.
- **Internet:** Wi-Fi connectivity will be provided throughout the venue for the duration of the hackathon.
- **Food:** Meals and refreshments will be provided for all participants for the duration of the overnight stay.
- **Accommodation:** Overnight accommodation will be arranged on-site for all qualifying participants.
- **Security:** The venue will be secured throughout the event by the organizing team and campus security.

What Participants Should Bring

- **Laptop(s)** — each team member should bring a personal laptop.
- **Chargers** — laptop chargers and any device-specific chargers.
- **Multiplugs / Power Strips** — to manage multiple devices at a single workstation.
- **Mobile Data (Backup)** — although Wi-Fi will be provided, participants are **strongly recommended** to carry mobile data as a backup due to potential infrastructural constraints.
- Any other necessary personal or development devices (external keyboards, mice, etc.).

NOTE

The organizing committee will do its best to ensure stable internet connectivity. However, due to the high number of concurrent users and possible infrastructure limitations, **mobile data as a backup is strongly advised** to avoid disruptions during critical development periods.

5. Segment Description

Participants will build **full-stack functional solutions** — Web or Android or Both — that combine Artificial Intelligence with API-based integrations to address a real-world problem scenario announced on the day. Teams should aim to demonstrate *process understanding, efficiency, scalability, and creative AI integration*.

Creative and effective use of AI services or custom models that align well with the problem requirements will be highly rewarded by the judging panel.

5.1 What is Allowed

- Any publicly available APIs, SDKs, or your own trained AI/ML models.
- Pre-trained models accessed via API (e.g., OpenAI, Hugging Face, Azure Cognitive Services, Google Cloud AI, Anthropic Claude API).
- Any programming language, web framework, or mobile development toolkit.
- Cloud services (AWS, Google Cloud, Azure, etc.).

5.2 What is NOT Allowed

- Pre-written source code of any kind brought into the venue.
- Projects developed, even partially, before the hackathon begins.

5.3 Sample Problem Scenario

SAMPLE PROBLEM SCENARIO

Scenario: AI-Powered Rural Healthcare Triage Assistant

Background

Bangladesh has over 80,000 community clinics and rural health posts, many of which are severely understaffed. Patients often travel long distances only to be told the necessary specialist is unavailable, or to receive a misdiagnosis due to lack of diagnostic tools. Simultaneously, large amounts of patient data — including handwritten prescription records, lab reports, and clinical notes — exist in paper form and are never digitised or analysed.

The Challenge

You are tasked with building an **AI-powered Rural Healthcare Triage & Decision Support System** that helps community health workers (CHWs) — who may not be trained doctors — perform an initial triage of patients, flag critical cases, and provide preliminary guidance in both Bengali and English.

Task 1 — Multilingual Patient Intake via Voice

A community health worker should be able to *speak* the patient's symptoms into the system in **Bengali or English**. Use a Speech-to-Text API (e.g., Google Speech-to-Text, AssemblyAI, Whisper API) to transcribe the voice input. If the input is in Bengali, use a **Translation API** (e.g., Google Translate, DeepL) to normalise it into structured English before further processing.

Task 2 — Prescription & Lab Report Digitisation via OCR

Patients often carry old handwritten prescriptions or printed lab reports. Use **OCR** (e.g., Google Cloud Vision, Tesseract, Azure Form Recognizer) to extract text from photographed documents. Apply a **Named Entity Recognition (NER)** model to identify and structure medical entities such as medications, dosages, diagnoses, test names, and results from the unstructured text.

Task 3 — AI Symptom Analysis & Triage Scoring

Feed the structured symptom description and extracted medical history into an **LLM-based clinical reasoning module** (e.g., OpenAI GPT-4, Claude, Gemini) with a carefully engineered medical prompt. The system should:

- Generate a **triage severity score** (Green / Yellow / Red / Black) with reasoning.
- Suggest **likely differential diagnoses** based on reported symptoms.
- Recommend **immediate first-aid steps** the CHW can take on-site.
- Indicate whether the patient should be **referred to a specialist** and with what urgency.

Task 4 — Anomaly Detection in Vitals

The CHW enters the patient's **vitals** (blood pressure, heart rate, temperature, oxygen saturation, blood glucose) through a form. Implement an **anomaly detection model** — using a statistical approach (Z-score, IQR) or a trained ML model — to flag readings outside safe ranges and classify the severity of each anomaly. Integrate the anomaly output into the triage score from Task 3.

Task 5 — Voice Response & Summary Report Generation

After analysis, the system should:

- Generate a **spoken summary** of the triage recommendation back to the CHW using a Text-to-Speech API (e.g., Google TTS, ElevenLabs, Azure Neural TTS) in the CHW's preferred language.
- Produce a **structured digital report** summarising patient intake data, extracted medical history, vitals, AI-generated diagnosis notes, triage score, and recommended actions — suitable for forwarding to a supervising physician.

NOTE

This is a sample scenario only. It illustrates the format, complexity, and depth of AI integration expected. The **actual problem statement will be different** and will be announced at the Opening Ceremony. Teams should use this sample to calibrate their preparation and API setup — not to pre-build a solution.

6. Submission Requirements

Every team must submit all required deliverables through the **official submission portal**. Submissions after the deadline will **not be considered under any circumstances**.

6.1 Required Deliverables

#	Deliverable	Details
1	GitHub Repository	Public repo with all code written during the hackathon. Include a <code>README.md</code> with setup, run instructions, and tech stack. Final evaluation uses the last commit before the deadline.
2	Presentation Slides	PDF or PPTX, maximum 15 slides . Cover: problem, solution, architecture, tech used, challenges, and future roadmap.
3	Live Demo	Mandatory working prototype demonstration before the judging panel. The presentation must primarily focus on the live demo.
4	Project Documentation	<i>Optional but recommended:</i> testing notes, API integration guide, deployment steps.

IMPORTANT

HARD DEADLINE: Teams missing the submission deadline forfeit their right to present and will be excluded from judging.

6.2 Presentation Format

- Each team is given **10 minutes total**: 7 minutes for the pitch and live demo + 3 minutes for judge Q&A.
- A minimum of **10 teams** will be selected for the final presentation round.
- Presentation order is determined by a **random draw** after the submission deadline.
- Teams must use the provided projector/screen. **Personal external displays are not permitted.**
- The presentation should **primarily focus on the live demonstration** of the working prototype.

7. Code of Conduct

CSE Carnival 2026 is committed to providing a **safe, inclusive, and respectful environment** for all participants, judges, mentors, volunteers, and guests. Harassment, discrimination, and disrespectful behaviour of any kind will not be tolerated.

7.1 Expected Behaviour

- Treat all individuals with respect and professionalism at all times.
- Foster a collaborative spirit — share knowledge, support fellow participants, and maintain sportsmanship throughout.
- Keep workstation areas tidy and respect all shared spaces.
- Comply with all instructions from the organizing committee and university authorities.
- Respect the privacy of other teams — do not photograph or observe their work without consent.

7.2 Prohibited Conduct

- Harassment, intimidation, bullying, or discrimination of any kind against any person.
- Use of offensive, derogatory, or discriminatory language — in person or within project submissions.
- Consumption of alcohol, tobacco, or illegal substances on SUST campus premises.
- Unauthorized access to other teams' laptops, accounts, networks, or data.
- Intentional sabotage of other teams' hardware, software, or internet connectivity.
- Any form of plagiarism, academic dishonesty, or misrepresentation of work.

7.3 Procedure & Appeals

If a violation is suspected, the concerned team will be formally notified and given a reasonable opportunity to respond. Disqualified teams forfeit all prizes and recognition. Teams may submit a **written appeal within 1 hour** of the disqualification notice. The Organizing Committee's decision is final and binding.

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