



DECODE
THE
MATRIX
RECODE
THE
WORLD

RULEBOOK



Event Date
21
November

www.eteteleverse.com

TABLE OF CONTENTS

	Page no.
Introduction	01
Eligibility	02
Problem Specification	03
Team Specification	06
Phase 1 (Online)	07
Phase 2 (Onsite)	08
Registration	09
Submission (Phase 1)	10
Policies & Conduct	11
Contact	12



INTRODUCTION

The Department of Electronics and Telecommunication Engineering, **CUET**, proudly presents **IOTrix**, a ground-breaking national **IoT-Hackathon** under **Televerse 1.0**. **IOTrix** merges **robotics**, **embedded systems**, **automation**, and **intelligent software** to solve real-life problems through **hardware-software integration**.

For the **first time in Bangladesh**, **IOTrix** adopts a **Shark Tank-style** onsite final. Teams must **build** and **pitch** practical IoT solutions to industry experts.

Competition Structure

- **Phase 1 (Preliminary Round):** Remote 72-hour challenge.
(13–15 November 2025)
- **Phase 2 (Final – Onsite at CUET):** Secured, build-and-pitch round –
(21 November 2025)

Tagline: Decode the Matrix, Recode the World

Theme: IOT × Industry: From Embedded to Cloud — Build • Pitch • Ship

PRIZE MONEY

Champion: ₩50,000

1st Runners up: ₩40,000

2nd Runners up: ₩30,000



ELIGIBILITY

Eligibility: Open to all university students with recent Graduates (upto HSC 19 and 20 Batch)

Team Composition: Each team can consist of up to **3 members** (Recommended)

Cross-Institution Teams: Cross-institutional teams, where members coming from different universities are allowed.

Team Leadership: Each team must have a designated leader who will be responsible for communication, coordination, and representing the team in official matters.

Substitution & Changes: Once a team is registered, no substitutions of team members are allowed. Any changes to the team composition must be approved by the event organizers.



PROBLEM SPECIFICATIONS

To participate in the preliminary round of **IOTRIX**, teams must ensure they have the necessary skills to tackle both hardware and software challenges related to a **Real-life Automation System**. Below are the required competencies for forming a strong team:

1. Hardware Implementation (Circuit Simulation & Embedded Systems)

- Basic Electronics Knowledge
- Microcontroller Programming (**Arduino/ESP32/RPi Pico**):
 - Interfacing multiple modules; sensor fusion; debouncing; interrupts/timers.
 - Robust serial/Wi-Fi/BLE comms; fault handling.
- Circuit Simulation (**Tinkercad/Proteus/Wokwi**):
 - Must be able to simulate circuits in software
 - Optional: Simulate wireless features (e.g., Bluetooth, Wi-Fi modules)



PROBLEM SPECIFICATIONS

2. Software Development (Database & Application Logic)

- Backend Development (**Python/Node.js/Go**):
- Design a Management System with:
 - Data Handling (receiving Data from hardware).
 - Data Management ,Ingestion and Data Manipulation.
- Database Management (SQL): (Basic level)
 - Must write RAW SQL queries (no ORM allowed).
 - Design a database schema for Basic Data Structure
- API Development (Optional but Beneficial):
 - If hardware wirelessly sends data, the team should know REST APIs.
 - Data visualization in front end
 - Basic ML skills (data-preprocessing , labelling ,image processing, feature extraction, object detection)



PROBLEM SPECIFICATIONS

3. Documentation & Presentation Skills

- A well-structured report (PDF) containing:
 - Circuit diagram & explanation.
 - Database schema & SQL queries.
 - System architecture & key algorithms.
- Screen-Recorded for Phase-1 Video (Max 5 mins):
 - Demonstrate hardware functionality.
 - Show software features (order processing, database entries).
 - Explain the overall system integration
- Screen-Recorded for Phase-1 Video (Max 5 mins):

Finalist teams must be prepared to present their solution clearly and confidently to a panel of **industry experts**. Pitch should include:

- Clear articulation of the problem and solution
- Why your system is innovative, practical, and scalable



TEAM SPECIFICATIONS

Team Composition (3 Members Recommended)

- **Hardware Specialist:** Circuit design, Microcontroller programming, Simulation.
- **Software Developer:** Backend logic, Frontend, Data visualization, ML skills
- **Documentation & Presenter**
- **Technical writing, Clear communication.**

Bonus Skills (For Competitive Edge)

- **Wireless Communication (Bluetooth/Wi-Fi):** If hardware sends orders to software wirelessly.
- **Data Analytics:** Generate reports from the database and apply Machine Learning.



PHASE 1 (ONLINE)

- **Case Release Date:** 12 November 2025 – 11:59 PM
(problem statement will be published on website and through email)
- **Submission Deadline:** 15 November 2025 – 11:59 PM (72 hours).
- **Result:** 16 November 2025; around 8:30 PM
- **Requirements:**
 - **Hardware:** Teams are encouraged to make a prototyping using breadboard with related components. They can also prefer circuit simulation via any software at their ease (e.g., Tinkercad, Proteus, Wokwi)
 - **Software:** SQL database (RAW queries) + optional Webapp UI.
 - **Documentation:** PDF report (design, challenges, solutions).
 - **Video:** 5-minute (Screen Recording with voice) (hardware + software walkthrough).

JUDGING CRITERIA PHASE 1

(These criteria will vary based on the given problem set)

Hardware Simulation Functionality	30%
Database Design	20%
Web dashboard & Data visualization	20%
Documentation and Video	15%
Innovation	15%

Notes: About the Phase 1 problem set, evaluation and qualifying to the Final detail information will be published. A pre-competition workshop (around 12 November 2025, date TBA) will be held regarding the competition.



PHASE 2 (ONSITE)

1. System Development:

Teams must design and build their IoT prototype from scratch, based on the given real life problem current to the Industrial traits ensuring:

- Full hardware + software integration
- Deployment aspects such as cloud platforms, dashboards, or mobile applications

2. Pitching & Presentations:

Each team will present their solution before a panel of industrial judges focusing their aspects on:

- Why their solution is **innovative and scalable**
- How it can move from prototype to industrial production
- Why their approach stands out and feasible



All essential hardware kit will be in the provided inventory system where Teams can acquire it based on their limit usage (no external gear allowed).

Notes: Phase 2 in details timing will be announced a week before the event held. Judging criteria and all the essential rules will be declared onsite.



REGISTRATION

Deadlines & Fees

- **Phase 1:**
Registration Deadline: **5 November 2025 – 7:00 PM**
Fee (Phase 1): **BDT 200/team**
- **Final Phase:**
Registration Deadline (Qualified Teams): **17 November 2025**
Fee (Phase 2): **BDT 3,000/team**

[Click to Register](#)

Disclaimer:

- The authority reserves the right to change any rule at any time without prior notice.
- The organizing committee has the right to disqualify or ban any team based on violations such as:
 - Using fake identity
 - Plagiarism/pre-made projects.
 - Breaking competition rules
 - Time violations (late submissions/presentations).
 - Not following the player etiquette
 - Previous accusations or misconduct
- The decision of the judges will be final in case of any disputes.



SUBMISSION (PHASE 1)

- The Case will be published through our **event site** and will be sent through **mail** to the registered teams.
- The Submission form link will be sent via **email** to the registered team lead.

The team must follow this process to submit their resources:

- **Github Repo :** For submitting all the necessary files of software demonstration (Including a **README** file which describes the workflow).
- **Drive link :** containing pdf, simulation file, video link etc



POLICIES & CONDUCT

- **Hardware Policy:** Phase-2 finalists use only organizer-provided kits (no external components).
- **Originality:** Projects must be the team's original work during the competition; cite any libraries/templates/datasets.
- **IP & Media:** Teams retain Intellectual Property. Organizers retain the right to photograph/record/publish event materials for non-commercial promotion and documentation.
- **Safety:** Follow lab safety and ESD guidelines; no unsafe power wiring or hazardous materials.
- **Fair Play:** No tampering with other teams' work, network abuse, or rule gaming.
- **Communication:** All official notices via email/website/announced channels.





CONTACT

For any inquiries regarding **IOTRIX**, feel free to reach out to our organizing team

CONTACT INFORMATION

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