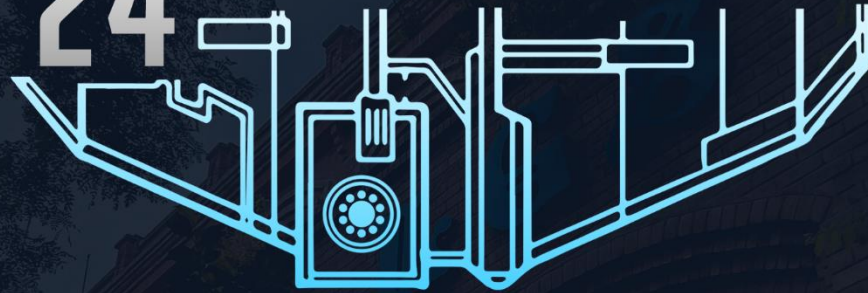LAHORE GRAMMAR SCHOOL JOHAR TOWN FOR BOYS

INNOVENTIONS
'24 INDULGE. INVENT. INNOVATE.

Project X
(Study Guide)

11th-13th OCTOBER

Overview

Project X is Innoventions' robotics category; with three rounds, one for each day, delegates will test their knowledge about robotics, their critical-thinking, and speed. Keeping the vehicular aspects from previous editions, this year's Project X also tests delegates based purely on their robotics skills.

Rounds

Teams will be sorted into 2 categories based on their prior experience and skill level. This will be decided on the day of the event. Each category will have its own trophies.

Round 1	Round 1
Projects: Delegates will be given options of projects to choose from - each with varying difficulty and points. **DHT Analog + Digital Gauge** -> DHT + LCD + Servo **Height Measuring** -> Ultrasonic sensor + LCD **Color Sorter** -> Servos + Color Sensor **Solar Tracker** -> Servos + LDR The specific number of points per project will be decided later.	**Assembling:** Delegates will receive a brief explanation of their objectives and component use. They must then spend the remaining time building the appropriate bot for the events over the next two days. It is recommended to address all hardware-related issues on Day 1 and prepare the software at home. The tracks for the following days will be revealed on this day.
Round 2	**Round 2**
Delegates will finish their respective projects from the first round. After the projects are assembled, the projects will be judged, with more points being allocated based on how well it performs.	**Line Follower:** Participants will now attempt the Line Follower track. They will be given time to finalize their robot. Each team will have 3 attempts, and their average time will be recorded. If a team finishes early, they may start preparing for Day 3: the maze.
Round 3	**Round 3**
Facial Tracking: On an already setup laptop, using facial tracking and webcam, the coordinates of the center of a face will be thrown onto the serial monitor. Delegates will have to use these coordinates (x & y) to move two servos so that they point towards the face.	**Maze Solver:** Participants will attempt the Wall Follower maze, with time being given to debug their software and hardware before their final run. Each team will have 3 attempts, and their average time will be recorded. Teams found to be using timed turns, instead of automated turns, will be disqualified.

The final decisions will be in the hands of the category's heads.