RULE BOOK

5. Maze runner

TASK:

Participants must design a remote-controlled bot that can navigate a maze filled with various patches and obstacles. The goal is to achieve the highest score by traversing the maze, collecting points, and completing the maze in the shortest possible time.

GENERAL GUIDELINES & DESIGN SPECIFICATION

1. Maze Design

- **Track Width:** The maze path will be designed to accommodate bots within the given dimensions.
- **Obstacles & Traps:** The maze will feature barriers, speed bumps, tunnels inclines, and dead ends and many more to challenge navigation skills.
- **Path Variations:** Some paths will be shorter but more difficult, while others may be longer but easier.
- **Checkpoints & Scoring Patches:** Certain areas in the maze will contain bonus points or penalty zones.
- **Walls & Boundaries:** The maze will have solid walls to prevent bots from leaving the track.

2. Robot Design

- **Size Limit**: The bot must fit within **L(15-25cm) x W(15-25cm) x H(10cm).**
- **Weight:** Must not exceed **2 kg.**
- **Power Supply:** Only onboard DC power with a **maximum voltage of 12V is allowed**.
- **Wireless Control:** The bot must use **a 2.4 GHz remote control system**.
- **Navigation Capability**: The bot should be designed to handle turns, obstacles, and inclines efficiently.

3. Start and End Points

- **Start Point:** All bots will start from the designated starting zone within the maze.
- **End Point:** The bot must reach the finish line to complete the challenge.
- **Exit Rules:** Once the bot crosses the finish line, the timer stops, and the final score is calculated.

4. Scoring System

- **Completion Time:** Bots will be timed from start to finish.
- **Bonus Points:** Certain areas in the maze will have hidden points to encourage strategic path selection.
- **Penalty Points:** Collisions, touching walls, or human interference will lead to score deductions.

- **Final Ranking:** Winners will be determined based on combination of (completion time, Collected points and Penalties).
- **Tiebreaker Rules:**
    - If the scores are equal then the bot with the faster time wins.

5. Judges

- A panel of judges will oversee the competition to ensure fair play.
- Judges will monitor rule adherence, obstacle interaction, penalties, and final scores.
- Their decisions will be final in case of disputes.

6. Penalties

- **Obstacle Collisions:** If a bot hits an obstacle, a penalty will be applied.
- **Human Interference:** Touching the bot during the run results in immediate disqualification.
- **Time Limit Exceeded:** If a bot takes more than given time, points will be decreased.
- **Leaving the Maze:** If a bot exits the maze boundaries, it will be placed back at the last valid checkpoint with a penalty applied.

➢ Safety Guidelines

- No Hazardous Materials: Bots must not use flammable, explosive, or harmful materials.
- Stable Control: The bot's movement must be safe and controlled to prevent damage to the track or other participants.
- Emergency Stop: Each participant must have a way to disable their bot remotely in case of malfunction.