



भारतीय सूचना प्रौद्योगिकी संस्थान, नागपुर

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, NAGPUR

C/o Regional Telecom Training Centre (RTTC) BSNL, Seminary Hills, Nagpur-440006

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Presents

The Maze Runner

● ABOUT EVENT:

○ The event will be divided into two sections-

- Path Follower
- The Ultimate Maze Runner

1. Path Follower:

- a . This Path Follower round will be a simple qualification round. Just the autonomous robots have to trace black line and reach the finish line. Top 5 robots will be qualified to The Ultimate Maze Runner Round.

2. The Ultimate Maze Runner:

- a . Two runs will be given to each robot. In first run they have to navigate through the maze, memorise the path and reach finish line.
- b . In second run they have to run through maze based on memorised path. Top 3 best performing robots will be awarded and best performer will be entitled as "The Ultimate Maze Runner".

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● Game field:

1. Path Follower Round:

- a. This will be a qualification round.
- b. It consists of a start line, black line and finish line.
 - i. Start line: Robots starts from this line and the stopwatch begins.
 - ii. Black line: Black coloured track with width of 19mm.
 - iii. End zone: Once robot reach this point/zone the stopwatch will be stopped and time will be noted down.
- c. One team at a time will compete on the field.
- d. Length of the black line will be around 10 metres.
- e. Maximum time allowed to solve the round will be 45 seconds.

2. The Ultimate Maze Runner Round:

- a. It consists of start zone, maze zone and a finish line.
 - i. Start Line:
 1. As the name suggest, robots have to start from this line one at a time. Stopwatch will start.
 - ii. Maze Zone:
 1. This a zone, like any other real maze this zone may contain false path leading to dead end. Only one path will lead to finish line.
 - iii. Finish Line:
 1. One's the robots reach this line stopwatch will be stopped and time will be noted down for each robot.
- b. This round is further divided into two runs:
 - i. First Run:
 1. This is a training run for robots.
 2. They have to start from start line and reach finish line navigating the maze zone.
 3. Robots may require to learn or memorise the path they navigated through.
 4. Maximum time allowed to solve\memorise maze will be 3 mins.
 - ii. Second Run:
 1. Based on the path navigated in first run, the bots have to solve the maze within 1 mins.

● Bot specifications:

- The bot must be completely autonomous.

- It is not allowed to leave any part or any mark behind while moving forward on the arena. If found so, the team will be liable for disqualification.
- Teams are allowed to use ready-made microcontroller boards/ready-made sensor kits.
- However, teams are not allowed to use ready-made Lego kits or any such assemblies.
- To perform image processing, participants can use any controller and can interface with PC wirelessly, but participants won't be allowed to interact directly with PC or the bot.

● Power supply:

- The autonomous bot must use an on-board power supply. No external power supply will be allowed.
- Each team should bring their own power supply.

● Controls:

- The autonomous bot should not receive any input-navigational-signal from outside arena.

● Game rules:

○ Notes:

- The team should not exceed 4 members.
- After first run of The Ultimate Maze Runner Round teams will be allowed do hardware or software changes, before second run.
- After the autonomous bots starts, the team's members are allowed to touch it no more than 3 times! Otherwise they are disqualified.

● Judging & Game Play:

a. Path-Follower:

- Covering this round will award you 20 points.
- Touching robots (after it leaves start line and before it touches finish line) each time will result into subtraction of 5 points.
- Only best (calculation based on time and score points) 5 robots will be promoted to The Ultimate Maze Runner Round.

b. The Ultimate Maze Runner:

- For the first run there's no judging, this round is basically for training bots, but maximum time for training should not exceed 2 mins.
- Covering second run under 1 mins will result into addition of 80 points.
- Touching robot (after it leaves start line and before it touches finish line) for each time will deduct 7 points.

- Top 3 best performing robots (calculation based on time and score) will be awarded 1st, 2nd & 3rd prize respectively.

**Note: Participants have to reach an hour prior to the tournament.*

Registration:

Registration fees (per team):

- ₹200

Date of Event:

- **27th / 28th of October 2018.**

For the event will be done in offline mode only and the address is:
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Stay tuned to our website www.tantrafiesta.in

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