

GROBOTS

GANTAVYA

2K19

6TH – 9TH NOV

AUTOLEXA

[AUTONOMOUS]

**PROBLEM
STATEMENT**

EVENT DATE: 7TH NOV

THEMES

WELCOME TO THE HOUSE OF BLACK AND WHITE. YOU CHOOSE WHITE AND YOU CHOOSE BLACK WITH NO EASY OPTION TO RELY ON THE GREY .

DO YOU BELIEVE IN THE LORD OF LIGHT !!! NO? WELL, YOU HAVE TO IF YOU DESIRE TO CROSS THE HURDLES .

FOLLOWING THE LORD OF LIGHT , YOU WILL REACH THE SEA IN VALYRIA , THE EVER SO RUMOURED REGION OF THE STONE MEN. CROSSING THIS BLACK RIVER WILL BRING YOU VICTORY.

BE ALERT!!! FOR 'WHAT IS DEAD MAY NEVER DIE.' OR YOU WILL BE HUNT DOWN BY THE HAUNTS OF THE GREYSCALE .

TASK

To build an autonomous robot that has to follow the light maze and (line+wall) maze in order to complete the task. It should complete the path within time .

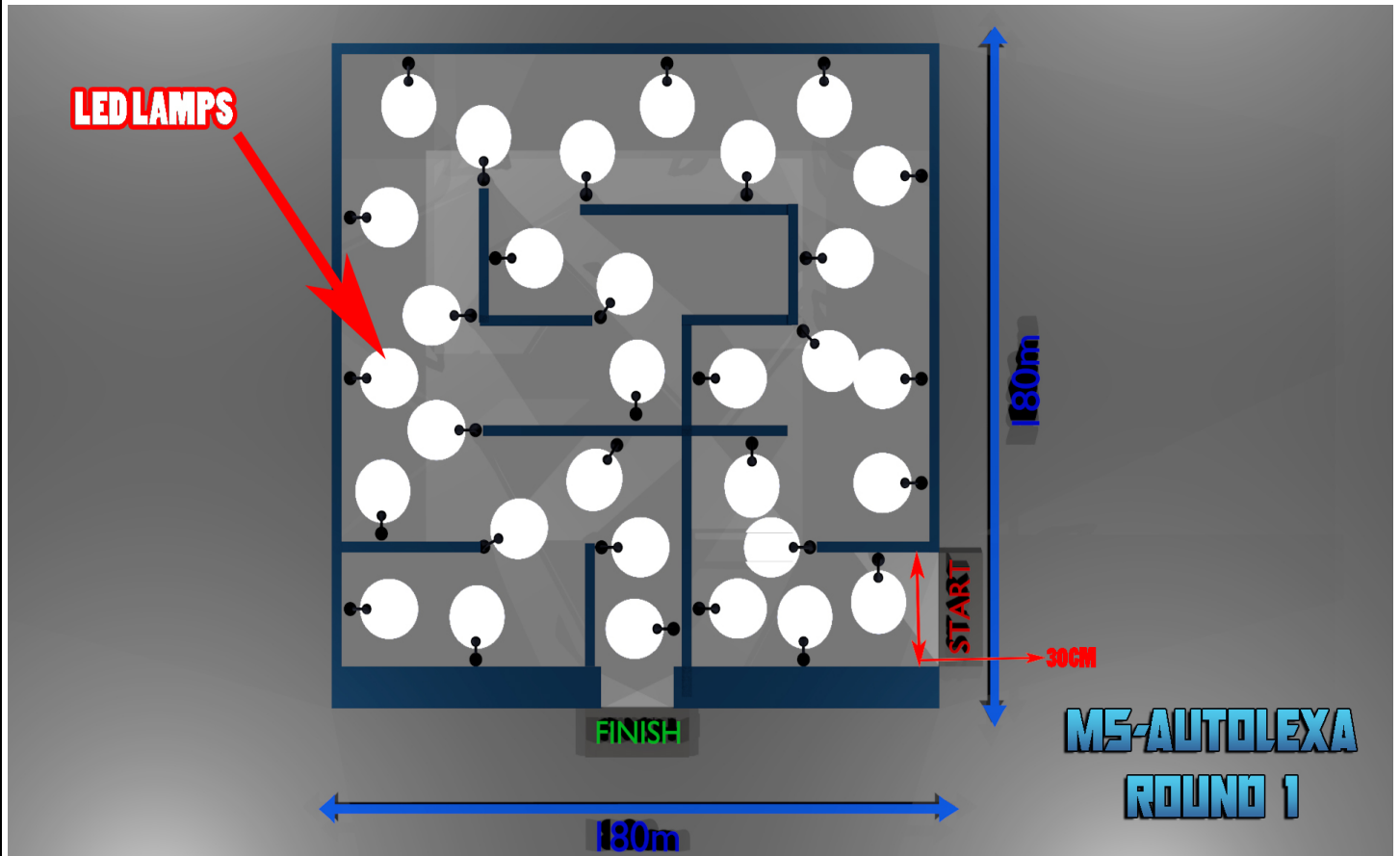
GAMEPLAY

The game play will be a single run in two rounds.

1st-Light Following

2nd-Line Following and Wall Following Both

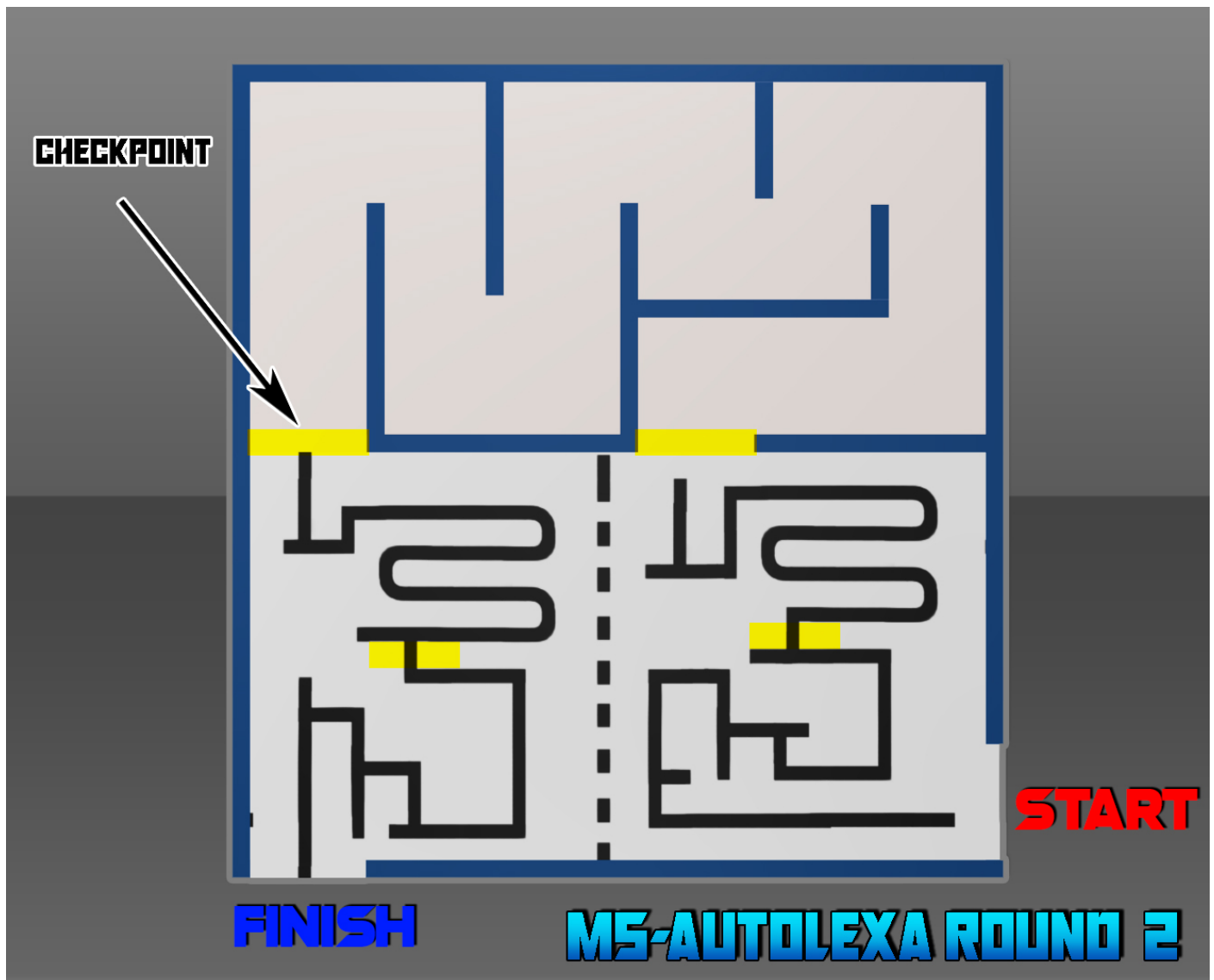
ROUND 1



- ✚ In round 1, robot will enter the arena from starting point(**RED**) and has to reach the finishing point(**GREEN**) .
- ✚ Robot should follow the light to complete the path.
- ✚ There will be total 4 check points. For crossing each check point ,participants will get scores accordingly.
- ✚ Task is to score more points within allotted time of 5 minutes.
- ✚ Lamps are placed as shown above and no sensor other than light sensor is allowed to detect Light.(e.g: LDR Sensor)
- ✚ At the start of Round 1 each participating team have to verify there code as well as the bot by the organizing team.

- ✚ Bot which reaches the finish line in least time will get more points
- ✚ Participants who fail to complete the entire round will be judged on the basis of their scores
- ✚ While completing the path the robot must touch all check points(decided at the time of the event).All qualifying teams will be eligible for round 2.

ROUND 2



✚ In round 2, robot has to cover another path to complete the event.

✚ Robot will enter the arena from starting point(**RED**) and has to reach the finishing point(**BLUE**).

✚ In order to complete the round ,one has to follow the **black line(3cm)** firstly, followed by wall following and again, line following marking the end of round 2.

✚ While completing task the robot must not touch the walls as there will be deduction of 2 points and addition of 5 sec to the total allotted time ,if the robot does so. Points will be deducted from the score that the eligible teams secured in the second round

✚ There will be a number of checkpoints. Crossing each checkpoint successfully will get your team points accordingly

✚ All the check points will be completely yellow in colour and have a width of 5 cm .

✚ While completing the path the robot must touch all check points(yellow area) to get more points.

✚ If a Bot is unable to move for more than 30 seconds then it will be disqualified.

✚ Winner team will be decided by time taken and checkpoints touched.

✚ Team to complete the arena in least time and with maximum points will be the winner.

NOTES:

- ✚ REGISTRATION FEE WILL BE **RS.300/-** FOR THIS EVENT.
- ✚ Members are not allowed to jump over the arena, failing to which the team will be disqualified.
- ✚ Each and every participating team should have valid college ID cards.
- ✚ Decision of organizing team will be final.
- ✚ Single person cannot register his/her name in two teams.
- ✚ **USE OF ANY OTHER SENSOR THAN LIGHT SENSOR IN ROUND 1 FOR E.G:ULTRASONIC OR IR SENSOR,ETC IS STRICTLY PROHIBITED.**
- ✚ **IF THE PARTICIPANTS FOUND GUILTY DOING ANY ACT LIKE CHEATING WILL BE DISQUALIFIED IMMEDIATELY.**
- ✚ **NOC IS COMPLUSORY FOR ALL THE TEAMS WHO ARE NOT FROM SRMGPC WITH THEIR DIRECTOR /ADMIN OFFICIAL'S SIGNATURE BEFORE TAKING PARTICIPATION.**
- ✚ **EXTERNAL TEAMS CAN REGISTER THEMSELVES EITHER ONLINE OR OFFLINE.**
- ✚ **PRIZE MONEY WILL DEPEND ON THE NO. OF TEAMS PARTICIPATING.**
- ✚ **NO REGISTRATION AFTER THE DEADLINE WILL BE ENTERTAINED AT ANY COST.**
- ✚ **TOTAL PRICE MONEY IS UPTO 10,000/-**
- ✚ **ONLY THE CLIPS TAKEN BY ORGANIZING COMMITTEE WILL BE CHECKED FOR RECHECKING THE DECISIONS**

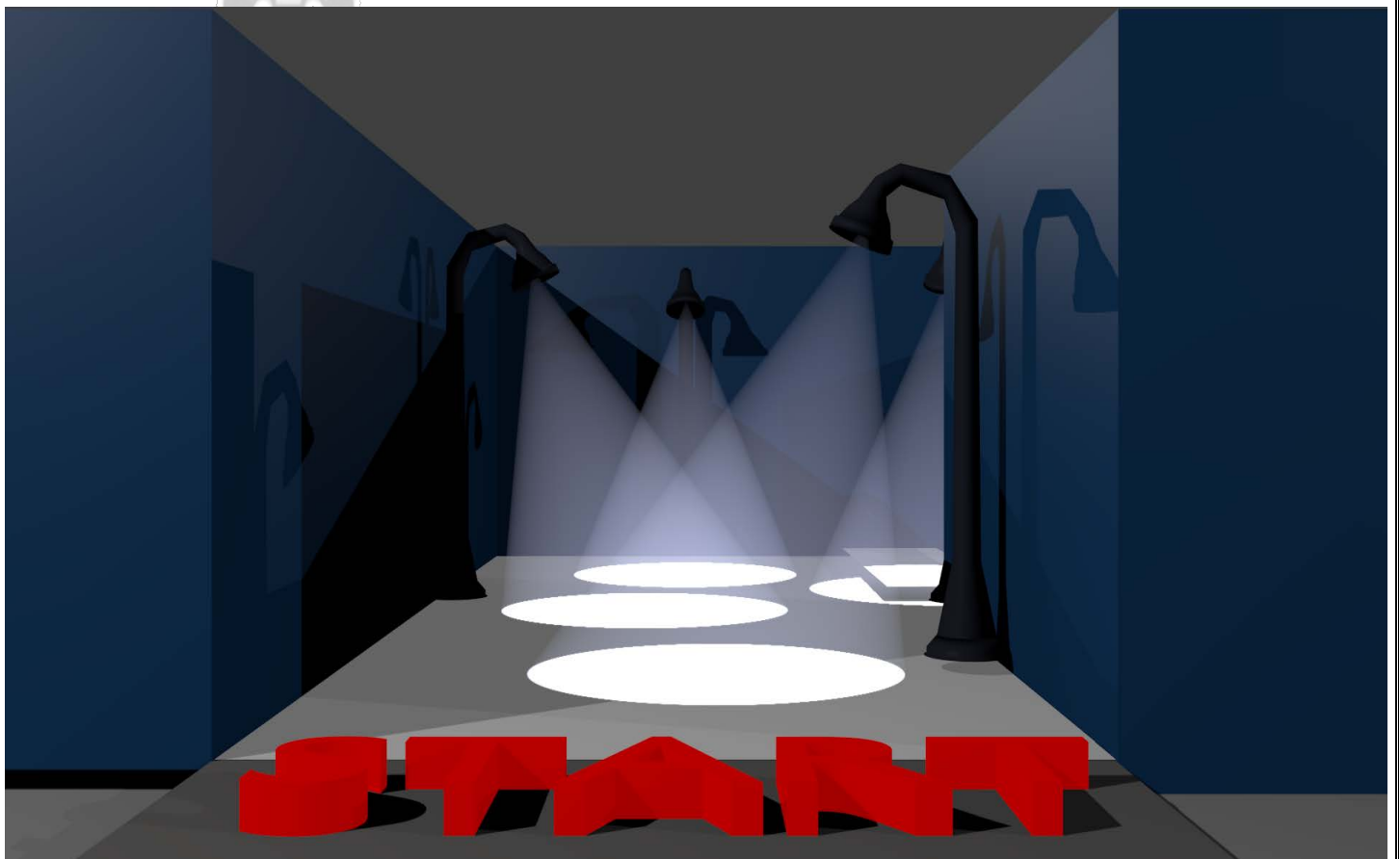
MADE AND NO EXTERNAL VIDEOS WILL BE ENTERTAINED.

⬇ ALL DECISIONS TAKEN BY THE ORGANIZING TEAM WILL BE DEEMED AS FINAL, AND NO MORE CHANGES WILL BE ENCOURAGED, THUS HOLDING THE FULL AUTHORITY TO CHANGE ANY OF THE ABOVE RULES AS PER CIRCUMSTANCES.

⬇ THERE CAN BE VIEW CHANGES IN ARENA VISUAL RELATED TO GRAPHICS AS PER THE AVAILABILITY AND COMFORTABILITY OF THE ORGANIZING COMMITTEE.

⬇ SAME BOT CANNOT BE REPEATED BY TWO OR MORE TEAM.

⬇ THE POSITIONS OF LAMPS IN ROUND 1 MAY DIFFER AS PER THE ALIGNMENT AND REQUIREMENTS OF THE ARENA.

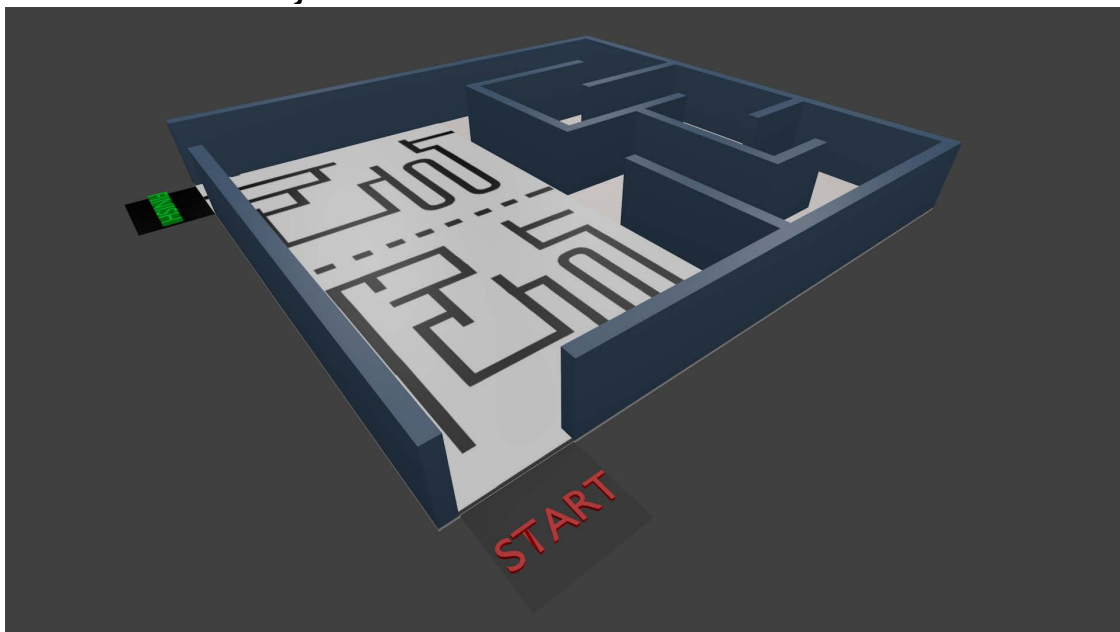


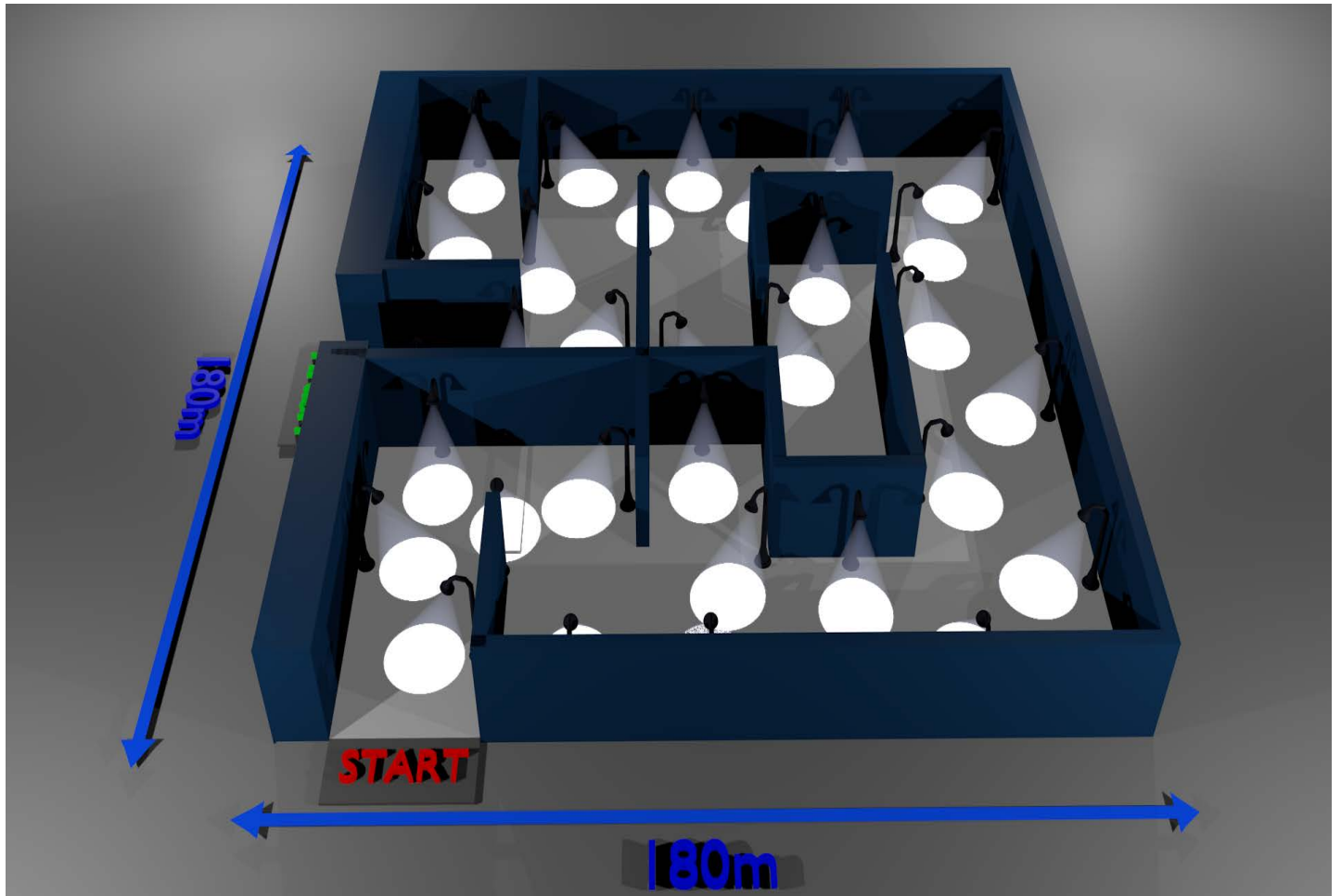
RULES

- ✚ Maximum no. of members in a team = 4
- ✚ Each team must register online or offline and claim their respective team ID after Payment of registration fee at arena 1 hour prior to the event.
- ✚ The robot must lie within the specified dimension of (20x20x20) cm³.
- ✚ The final product must fit into dimension box either vertically or horizontally to be eligible to participate in the event.
- ✚ No two teams can have even a single participant in common.
- ✚ Team members can be from different Institutes or College.
- ✚ Each member should have a valid college id card.
- ✚ Right spirit of participation is expected from participants.
- ✚ The autonomous robot should be completed before the event commences.
- ✚ If the robot doesn't work, it is the responsibility of participants. Penalty will be put on the team in such a case.
- ✚ After 3 Name Calls for a team by the coordinators, bots will be disqualified.
- ✚ No time out is allowed during the event.
- ✚ Restart will be provided to each team which will be decided by the co-ordinators on the day of event.

SPECIFICATIONS

- ✚ The Robot must fit inside the cube of size **20X20X20 cm³** when measured.
- ✚ No part/ mechanism of/on the robot should exceed the dimensions before commencement of the event.
- ✚ The autonomous robot should be on board processing robots i.e. the robots can't be controlled by a remotely kept computer. **The processor used for on the robot must be a 16 bit processor or less.**
- ✚ The Voltage between 2 points anywhere on the machine should not be **more than 12V AC/DC** at any point of time.
- ✚ All efforts must be made to protect battery terminals from direct short circuit causing a battery. Failure to do so will cause Disqualification.
- ✚ Readymade gearboxes, sensors, development boards can be used but no other part of robot should contain any readymade components. Simple car bases with no extra features may be used.



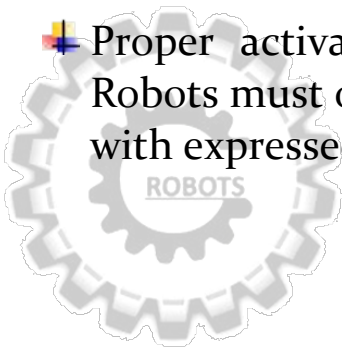


TECHNICAL

- ✚ All the dimensions should be considered with a tolerance of 10%.
- ✚ The robot can be powered on board as well as off board.
- ✚ The Checkpoints in the Round 1 will be disclosed at the time of the event.
- ✚ No kind of external control will be allowed.
- ✚ All circuitry and sensory equipments should be placed on the robot adhering to robot specifications.
- ✚ Participants will have to bring their own programmers and other parts of their robots. No programmers will be supplied.

SAFETY RULES

- ✚ Compliance with all event rules is mandatory. It is expected that competitors stay within the rules and procedures on their own accord & don't require constant policing.
- ✚ Special care should be taken to protect the non-board batteries.
- ✚ Each event has safety inspections. It is at your own sole discretion that your robot is allowed to compete. As a builder, you are obligated to disclose all operating principles and potential dangers to the inspection staff.
- ✚ Proper activation and deactivation of robots is critical. Robots must only be activated in the arena, testing areas, or with expressed consent of the event coordinators.



EVENT CO-ORDINATORS

UTKARSH KUMAR

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