TechnoWizz2024

RuleBook

Watumull Institute of Electronics Engineering & Computer Technology

ROBO RACE

OBJECTIVE :

A line tracer competition involves autonomous robots designed to follow a designated path marked by a visible line on the ground (Blackline on White). Participants create small, programmable robots equipped with infrared sensors to detect and track the line.The robots navigate through a course that includes turns, intersections, and challenges, showcasing their ability to follow the path accurately and efficiently.

The competition emphasizes the integration of sensor technology, programming, and control systems to achieve optimal performance.

Note: Team should be of max 5 members.

ROBOT SPECIFICATIONS :

Each participating team must design and build a line tracer robot capable of autonomously following a visible line on the track.

The robot must fit within specified size of 22cm x 22cm x 22cm.

All power for the robot must be onboard; no external power sources are permitted during the race.

Bot must be started by only one switch. However, a team may have an onboard switch

The autonomous bot should not separate or split into two or more units. All bots/units which are touching each other or are in the starting point will be considered as one bot.

The Machine cannot be constructed using ready-made 'Lego kits' or any ready-made mechanism. But they can make use of readymade gear assemblies. Violating this clause will lead to the disqualification of the team.

During the run, the autonomous bot must not damage the arena in any way. It is not allowed to leave anything behind or make any marks while traversing the arena. Any bot found damaging the arena will be immediately disqualified. The final decision is at the discretion of the organisers.

ARENA:

The track will consist of a visible line on a contrasting surface, featuring curves, turns, intersections, and possibly challenges.

The track layout will be disclosed to participants before 3 days of the competition to allow for sensor calibration.

The game field consists of an arena having dimensions 200 cm X 300 cm (lxb). It consists of the following:

1. The arena is composed of random paths made up of black Vinyl strips.

2. All the distances are shown in Map figure

3. The width of all black stripes will be 1.5mm-20mm.

4. The figure below shows the sample arena. The actual arena at the competition will consist of alterations in the path.

5. A black box of 200mm x 200 mm is present at the end zone of the arena to indicate the end position.

Note: ***The dimensions of the arena will be accurate to within 5% or 20 mm, whichever is less.***

GAMEPLAY:

Participants are allowed a specified calibration period before the race to adjust their robots' sensors for optimal line detection.

Each robot will start from a designated starting point on the track.

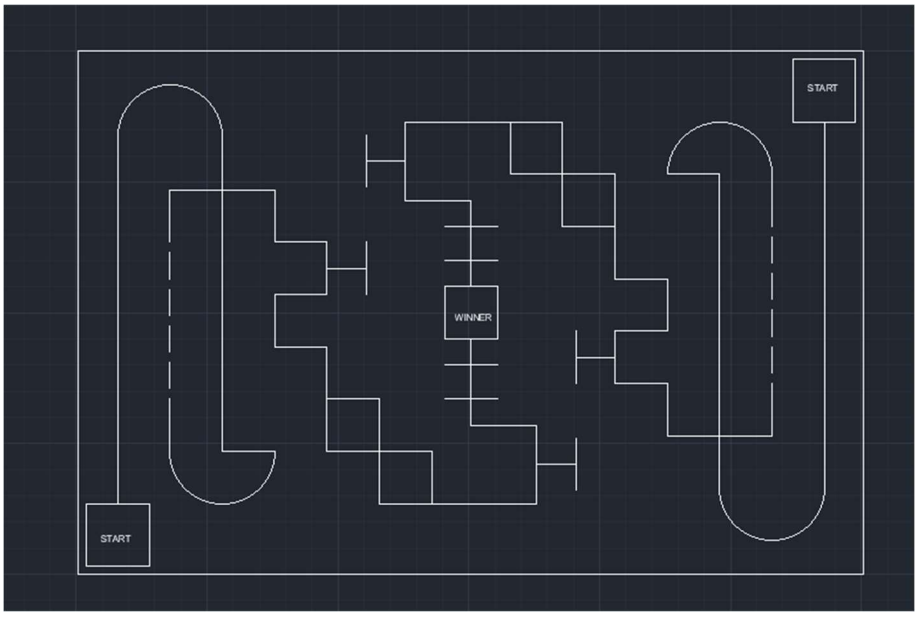
The goal is for the robot to complete the course in the shortest time possible by accurately following the line.

Penalties may be incurred for actions such as straying off the line, interfering with other robots, or violating size and weight limits.

The official race time starts when the robot begins moving from the starting point and stops when it successfully completes the course.

TRACK MAP :

Top View :



Checkpoints will be given in between start and end point , Each checkpoint carries Points.

GAME RULES:

1. Teams will be given 2 minute for calibration. If any team is found to alter its code after depositing its bots, then it will be immediately disqualified from the competition. They are, however, allowed to make any other hardware changes.
2. Only one autonomous bot per team is allowed.
3. When the bot starts, Team member is not allowed to touch the bot or enter the arena.
   Note : Only one member is allowed to touch and put bot again on nearest crossed checkpoint incase if bot missed or unfollowed specific path after crossing checkpoints.
4. At the start of the task, the bot will be placed at the starting point. Only 1 team member is allowed to be near the game field while starting the bot.
5. Run will start only when organisers give the signal.
6. The starting procedure of the bot should be simple and should not involve giving the bot any manual force or impulse in any direction.

GENERAL RULES:

1. Participants are not allowed to keep anything inside the arena other than the bot.
2. Laptops/personal computers are not allowed near the arena. Other Wi-Fi, Bluetooth, etc.devices must be switched off. The organisers hold the right to check for these devices and their usage and disqualify the team.
3. The time measured by the organisers will be final and will be used for scoring the teams.
4. Time measured by any contestant by any other means is not acceptable for scoring.
5. In case of any disputes/discrepancies, the organisers decision will be final and binding.
6. The organisers reserve the right to change any or all of the above rules as they deem fit. Change in rules, if any, will be highlighted on the website and notified to the registered teams.
7. Only one team is allowed to be present during the run, other teams will have to stay outside the hall. No team is allowed to take photographs or record their run.

SCORING AND WINNING CRITERIA :

The winning robot is determined by the fastest completion time to reach end point.

In case of ties, the robot with the highest accuracy in following the line may be considered.

FAIR PLAY :

Participants are expected to adhere to ethical standards and the spirit of fair competition.

Any attempt to sabotage or interfere with other robots may result in disqualification.

JUDGING :

A panel of judges may be present to monitor the competition, resolve disputes, and ensure that all rules are followed.

SAFETY :

Robots must be designed with safety in mind to prevent harm to participants, spectators, or other robots.

RULE MODIFICATIONS :

Organizers reserve the right to make rule modifications or clarifications before or during the competition if necessary.

HELPFUL LINKS :

https://quartzcomponents.com/blogs/electronics-projects/line-follower-robot-using-arduino

https://youtu.be/5jh-5HGvC-I?feature=shared

https://youtu.be/UhucBLW_qIQ?feature=shared

https://www.google.com/amp/s/www.instructables.com/Line-Follower-Robot-With-Arduino-Really-Fast-and-R/%3famp_page=true

https://circuitdigest.com/microcontroller-projects/arduino-uno-line-follower-robot

CODE DECODE

TEAM SIZE :

Solo Registration will be taken only.

ELIGIBILITY :

- The competition is open to individuals of all skill levels.
- Participants must have a valid HackerRank account to enter contest .
- Participants must hold valid Id card of Watumull Institute .

REGISTRATION :

- The Participants must register for the competition on HackerRank before a specified deadline.

COMPETITION FORMAT :

- The competition will consist of a set of coding challenges in C/C++ .

SUBMISSION GUIDELINES :

- Participants are required to submit their solutions using C or C++ programming languages.
- Code submissions should adhere to the specified input/output format for each problem.

CODING ENVIRONMENT :

- The coding environment provided by HackerRank during the competition must be used for writing and testing code.

TIME LIMIT:

- Each coding challenge will have a predefined time limit, and participants must submit their solutions within that timeframe.

CODE QUALITY:

- Code quality, readability, and efficiency may be considered in the evaluation process.

WINNING CRITERIA:

- The participant with the highest cumulative score across all challenges is declared the winner.
- In case of a tie, the participant with the fastest cumulative submission time may be considered.

LEADERBOARD:

- A real-time leaderboard will display the rankings of participants throughout the competition.

FEEDBACK AND SOLUTIONS:

- After the competition, participants may have access to the solutions and explanations for the challenges.

CODE OF CONDUCT:

- Participants are expected to adhere to HackerRank's Code of Conduct throughout the competition.

RULE MODIFICATIONS:

- Organizers reserve the right to make rule modifications or clarifications before or during the competition if necessary.

GAMECRAFT

Welcome to GameCraft, where creativity meets code! This game-making competition is designed for engineering students to showcase their innovation, technical skills, and game development prowess. Unleash your creativity and bring your game ideas to life for a chance to win exciting prizes and recognition.

COMPETITION OVERVIEW:

GameCraft challenges teams of engineering students to design and develop a unique and creative game. Whether you're into 2D or 3D, mobile or desktop, the possibilities are endless. The key is to combine technical excellence with imaginative gameplay for an unforgettable gaming experience.

ELIGIBILITY:

All students with a valid Student identity card of their respective educational institutes are eligible to participate.

RULES:

- **Team Formation:** Teams can consist of up to 5 members. Form diverse teams that bring together skills in programming, design, and creativity.
- **Technology Stack:** Participants have the freedom to choose their preferred game development tools and programming languages. Be it Unity, Unreal Engine, or a custom-built engine—innovation is the key.
- **Originality:** Plagiarism is strictly prohibited. Your game should be an original creation, and all assets used must be properly attributed.
- **Submission Guidelines:** Each team must submit a playable demo of their game, along with documentation describing the game concept, development process, and any unique features. A short video demo is highly encouraged.
- **Gameplay Duration:** The game should have a minimum of 5 minutes of engaging gameplay.
- **Theme Adherence:** While there's no strict theme, extra points will be awarded for games that creatively incorporate one of the suggested themes (see below).

SUGGESTED THEMES:

- **Maze Runner:**
  Design a game where the player navigates through a maze, solving puzzles and avoiding obstacles.
- **Pixel Adventure:**
  Create a classic 2D pixel-art game with a simple storyline and challenges.
- **Endless Runner:**
  Develop a game where the player controls a character running endlessly, overcoming obstacles and collecting items.
- **Puzzle Mania:**
  Build a puzzle-solving game with different levels of difficulty and engaging mechanics.

- **Memory Match :**
  Design a memory game where players match pairs of images or patterns within a time limit.
- **Color Matcher :**
  Create a game where players match colors or patterns in a fun and interactive way.
- **Platform Jumper:**
  Develop a 2D platformer game where the player jumps across.
- **Quiz Quest:**
  Build an educational game with quizzes on various subjects, encouraging learning through play.
- **Bubble Pop:**
  Develop a game where players pop bubbles with different challenges and power-ups.

JUDGING CRITERIA :

Creativity: The uniqueness and originality of the game concept.

Gameplay: The overall gaming experience, including user engagement, controls, and mechanics.

Technical Proficiency: The quality of code, smoothness of operation, and effective use of chosen development tools.

Innovation: Any unique features, mechanics, or storytelling elements that set the game apart.

Presentation: The clarity and persuasiveness of the team's presentation during the judging session.

Embrace the challenge, push the boundaries, and let your creativity run wild in GameCraft! May the best game win!

QUIZBLAST

TEAM FORMATION:

Students can participate individually.

ELIGIBILITY:

All students with a valid Student identity card of their respective educational institutes are eligible to participate.

QUIZ TOPICS :

Range of topics relevant to computer engineering, including programming languages, algorithms, data structures, software development methodologies, and computer hardware.

QUIZ FORMAT:

Each quiz session can consist of multiple-choice questions, true/false questions, and possibly some interactive challenges or coding snippets.

SCORING:

Award points based on correct answers and possibly introduce bonus points for quick responses.

E-Waste Art Expo

Overview:

E-WASTE ART EXPO EVENT:

It's a basic fun event related to E-waste and our technology.

- This event can be played in duo or as per the participations.

There will be many small games in the events each having certain points, at the end team having maximum points will be the winner.

Quiz : There will be fastest finger first quiz related to e-waste or computer. Each question will be having certain points.

Disscusion Round: There will be two questions given to the team ,they have to discus among them and have to write there suggestions.

Cross Word: Team will be given some letters, with the help of those letters they have to make words related to e-waste in certain time.

Keyboard Recognization: Players will be asked questions about the keyboard or shortcuts and if they answer it correct they have to place the correct key at the correct positions.

Best from E-Waste: Players will be given E-Waste with help of that they have to make creative things.

After all the games, points will be calculated and the team having highest points will be winner.

ELIGIBILITY :

- The competition is open to individuals of all skill levels.
- Participants must hold valid Id card of Watumull Institute .