

# HURDLEMANIA

## INTRODUCTION:

A young mad scientist and his lab creates a time machine capable of sending back texts in time. Sending such texts creates ripples in time and causes his current timeline, called the Alpha timeline, to change into a beta timeline. Alas! The events in the Beta timeline lead to the death of his childhood friend. He is able to shift the timeline back to the Alpha timeline and save his friend by 'unsending' all the texts, only to realize the Alpha timeline leads to the death of his fellow scientists.

And to top it all off, a secret organisation named SERN, which researches on time travel finds out about this time machine. SERN has evil plans to misuse this technology in order to gain power over humanity culminating in World War III. After losing all hope, an epiphany causes him to think of the existence of a Gamma timeline where everyone is saved and the World War is prevented.

But Behold!! SERN being aware of the intelligence of the scientist has filled the path to the Gamma timeline with various hurdles and it seems nearly impossible to cross these...

Will this young scientist be able to cross all these HURDLES and go to the Gamma timeline and save the future?

## TASK:

Construct a racing bot (wired/wireless) which can compete against the opponent bot while traversing through the arena full of the sharp turns, rough paths, undulations, zig-zags, paths and wedges, etc.

### **TEAM SPECIFICATION:**

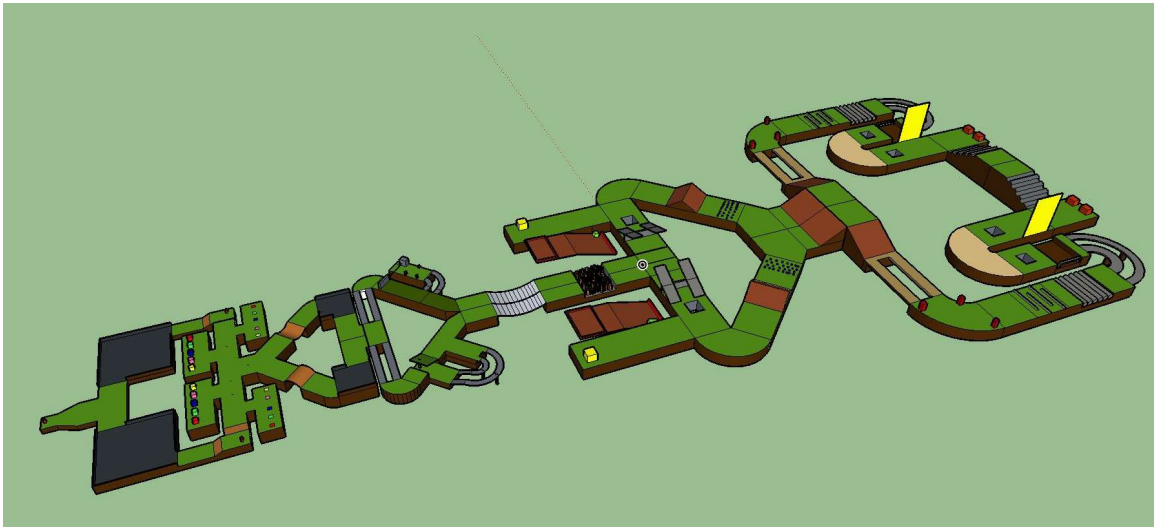
- A team can consist of a maximum of five members.
- Students from different educational institutions can form a team.
- Participants must have a valid identity card of their respective educational institutions.

### **BOT SPECIFICATION:**

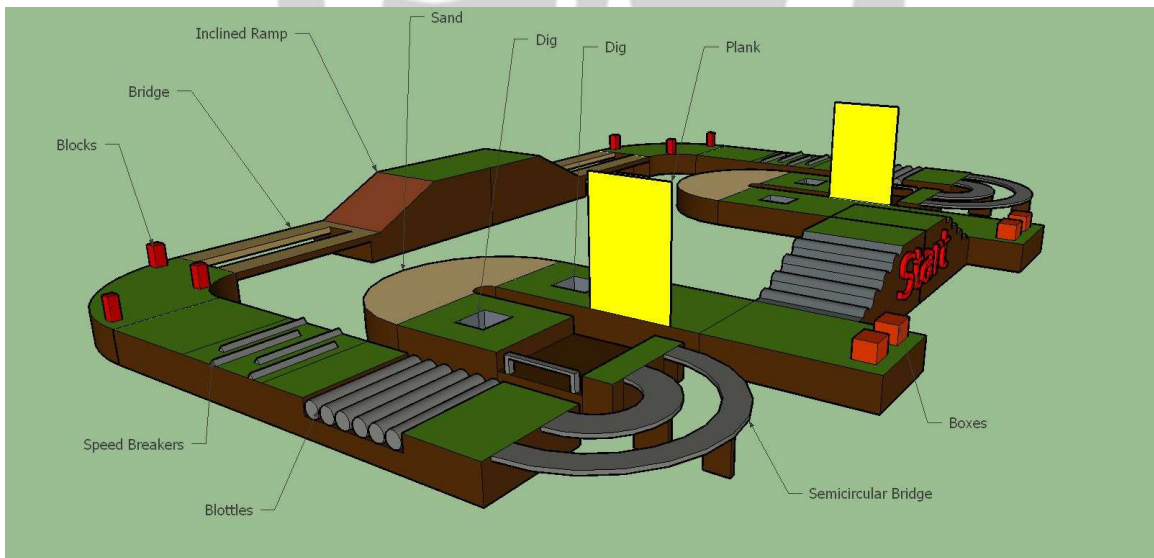
- Maximum allowable dimensions of the bot will be 30cm x 30cm x 30 cm (l x w x h).
- The bot can be wired or wireless (preference to be given to wireless bot in case of a tie).
- The weight of the bot should not exceed 4 kg. It includes the weight of all external devices.
- The speed of motors must not exceed 500 RPM.
- 12 V and 2 amp (max) DC supply will be provided to the team during the event.
- Teams can also use their own power supply provided that the voltage should not exceed 12V.
- Use of IC engine in any form is not allowed.

## ARENA SPECIFICATION:

The arena is divided into three parts according to the rounds of gameplay. The width of the whole track is 40cm for each bot.



### Section 1:



The track will have the following obstacles as given in the following order from the starting point:

- Declined curvy ramp.
- Compulsory task: A box of dimension 75mm x 60mm x 60mm need to be grabbed to fill the pit so that bot can move over.
- A plank needed to be pushed to complete the path.
- A Rough semi-circular terrain contains sand, stones, and marbles.
- A semi-circular bridge having two strips of width 6cm and space between them 14cm.
- Some bottles and followed by speed breakers.
- A maze full of blocks and turn.
- A bridge having two strips of width 6cm and space between them 14cm.
- An inclined ramp.

## Section 2:



- Declined path.
- Bumping path followed by a wedge.
- The see-saw family.
- A path over erect bricks.
- A seismic bridge.
- Now the path is divided into two separate tracks. The bot reaching first can choose either Path-A or Path-B while the other bot will choose the other path left. Both paths will lead to the finish line.

#### **Path-A**

A plank supported by a wooden stick. The bot has to go through the side path which is a semi-circular bridge to push the support so that plank falls down and completes the path.

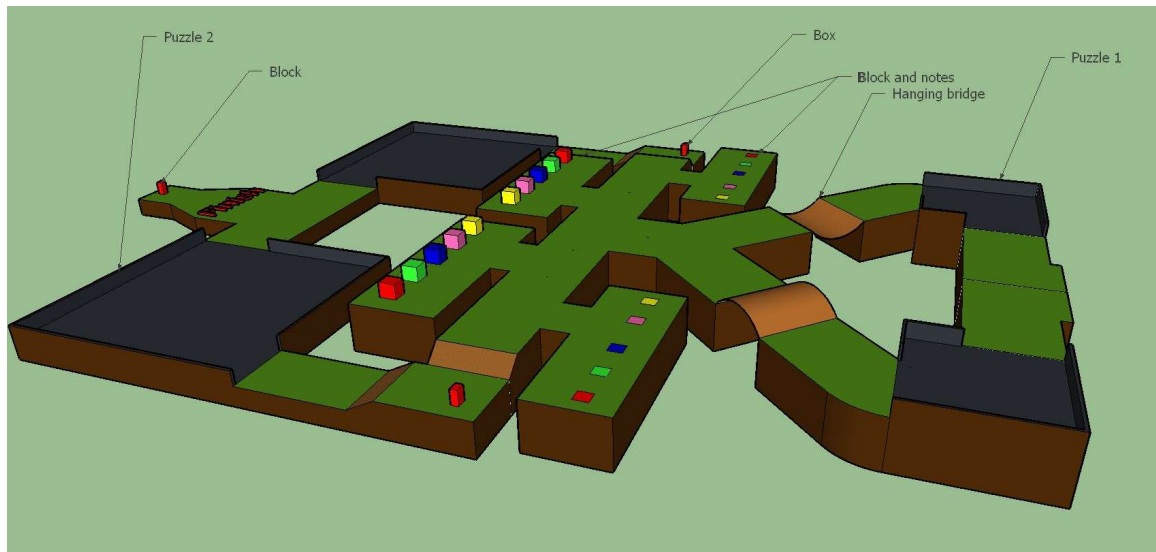
#### **Path-B**

The bot has to go through the side path to push the weight block over the switch which opens the gate and the path completes.

- A bridge having two strips of width 6cm and space between them 14cm.



### Section 3:



- A labyrinth which is to be solved in minimum time.
- A hanging bridge.
- A block and colour notes puzzle which will require the participants to put the boxes on the correct colour notes.
- A surprise hurdle awaits you at the end.

## GAMEPLAY:

### ROUND 1:

In the first round, the bot has to traverse Round 1 track solely. There will be two bots traversing on their respective tracks simultaneously.

1. Maximum 3 restarts can be taken if there is any mishap/toppling.
2. Bots will be placed again at the point of discontinuity.
3. Maximum 2 hurdles can be skipped.
4. There will be a penalty of 5 sec. for each restart while for each skip, the penalty will be according to its difficulty and thus will be disclosed at the time of the competition.
5. Bot taking time more than 5 minutes on track will be eliminated instantly.
6. Selection of teams for next round will be on the basis of time taken by them for traversing the arena.

### ROUND 2:

1. In the second round, two bots will compete against each other.
2. Bots are required to move in their respective paths.
3. After that, either of the two paths can be chosen, but if one path is selected by the first bot, the other bot is bound to select the other path.
4. Maximum five restarts can be taken if there is any mishap/toppling. Bots will be placed again at the point of discontinuity.
5. Two hurdles can be skipped.
6. There will be a penalty of 5 sec. for each restart and same for the skips as in the first round.
7. Set of competing bots taking time more than 8 min. will be eliminated instantly.
8. Only teams qualifying this round will be considered for the next rounds. However, this doesn't ensure their selection.
9. The teams will be ranked on the basis of results of both Round 1 and Round 2.
10. Top teams (rank wise) will be selected for the next round.

### ROUND 3:

1. In this round, the selected teams will compete against each other on the Round 3 arena.
2. Only one restart can be taken if there is any mishap/toppling. Bots will be placed again at the point of discontinuity.
3. No hurdle can be skipped.
4. There will be a penalty of 6 sec. for each restart.
5. In the puzzles, if any serious damage is done to the arena, the team is liable for disqualification.
6. In the last puzzle, teams have to perform the required tasks to make their way ahead. Probably you have to grab a block and place it at the key position, thus opening the gate which will give the way to the bot.
7. Any attempt to damage the arena will lead to immediate disqualification.

### NOTE :

1. The organizers reserve the right to change the rules as they deem fit. If such a case happens the registered participants would be notified via the Technex'20 website.
2. The decision of the organizers shall be final and binding.
3. Disqualified teams won't be considered for any certificates.

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