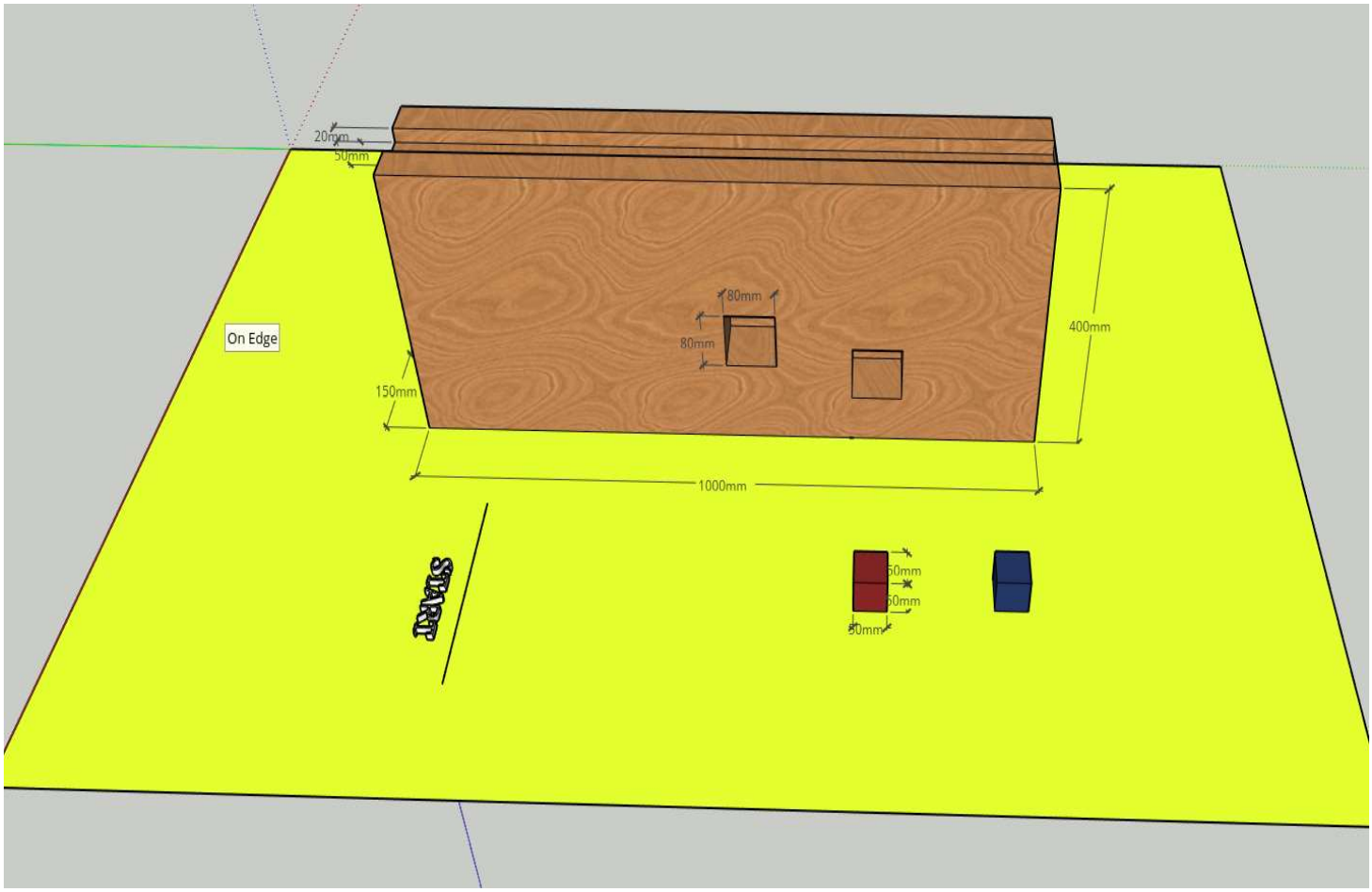
ESCALADE PROBLEM STATEMENT

AIM:

To design a bot which can move along side of a vertical wall with the help of a groove.

ARENA:



- The inclined rod cross section dimensions are 5cm*2cm.
- The blocks dimensions are 5cm*5cm*5cm.

NOTE:

- The dimensions of the arena are subjected to 5% error; hence, the participants are requested to make their bots adjustable to it.

GAMEPLAY:

- A manually controlled bot begins the task from start position
- The bot should pick up a block.
- Holding the block, the bot should clamp on to the groove.
- On clamping the groove, it should move horizontally along the wall through the groove.

- It needs to traverse the distances needed to reach out for the cubical depression both horizontally and vertically.
- On reaching it, the bot needs to place the block in the cubical depression.
- In the same way, the bot needs to place the remaining blocks into the cubical holes.

SCORING:

- Picking up the block = 5 points each time
- Clamping the groove = 15 points each time
- Placing the bot in front of the hole = 20 points each time
- Placing the block into the cube = 10 points each time

✓ Number of blocks = 2
✓ Total Points = 100 points

RULES:

- Each team will be given 3 runs for the task, of which the best will be considered the final score.
- A single run will be of a maximum of 5 minutes.
- The bot must start from the starting position.
- The bot must not be touched by any team member in the middle of a run.
- In case of technical problems, etc. the team can have a maximum of three restarts, which they can use to correct their bots.
- During the restart, the timer will not stop and the team has to start their bot from the initial position and the blocks will be placed in their initial positions as well.
- Damaging the arena will **disqualify** the team.

RANKING CRITERIA:

- The team finishing in the least time will be declared winner.
- In the case when two teams are not able to complete the event in given time, the team dropping maximum blocks in the disposal blocks will be the winner among them.
- In case of draw, again a fresh match between those teams will be done.

BOT SPECIFICATIONS:

- The dimensions of the body of the bot must not exceed 20 cm length * 20 cm width * 25 cm height.
- The bot can be controlled by a wired or wireless remote control.
- In case of wireless control, the bot must be able to work on two different frequencies.
- Bots must not be made from Lego parts or readymade assembly kits.
- Bot should have a gripping arm capable of lifting small light objects.
- The gripping mechanism can extend out by not more than 5 cm.
- Battery should be on board with the bot.
- It should be able to transverse along a rod of inclination like in a ropeway.
- The weight of the bot should not exceed 3 Kg.

TEAM SPECIFICATIONS:

- A team may have a maximum of 4 members only.
- Participants from different educational institutions may also form a team.
- A team can register as two separate teams if they are using two different bots for the event.

Contact Us

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