Catch'Em All

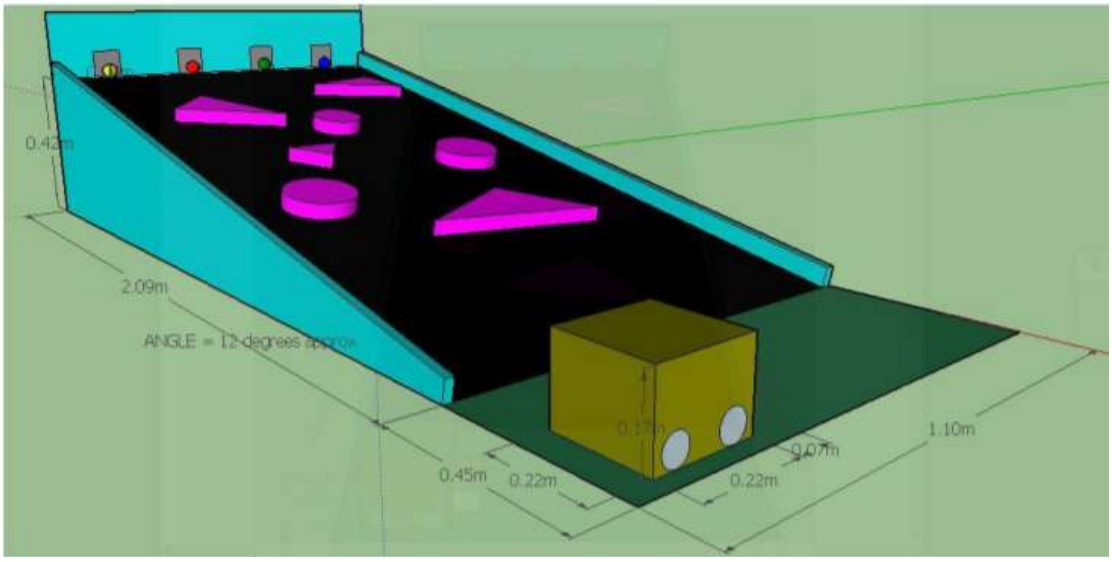
Aim: To make a manually controlled robot which can catch coloured balls while they are falling through an incline.

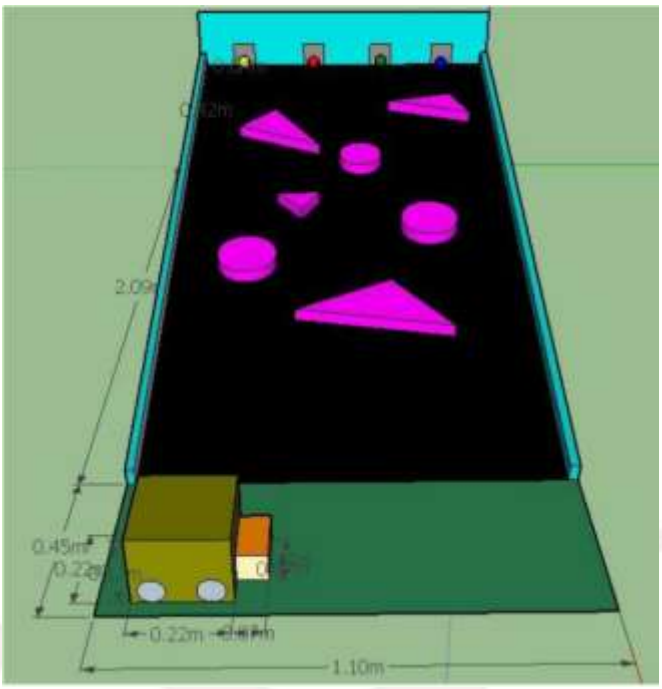
Description:

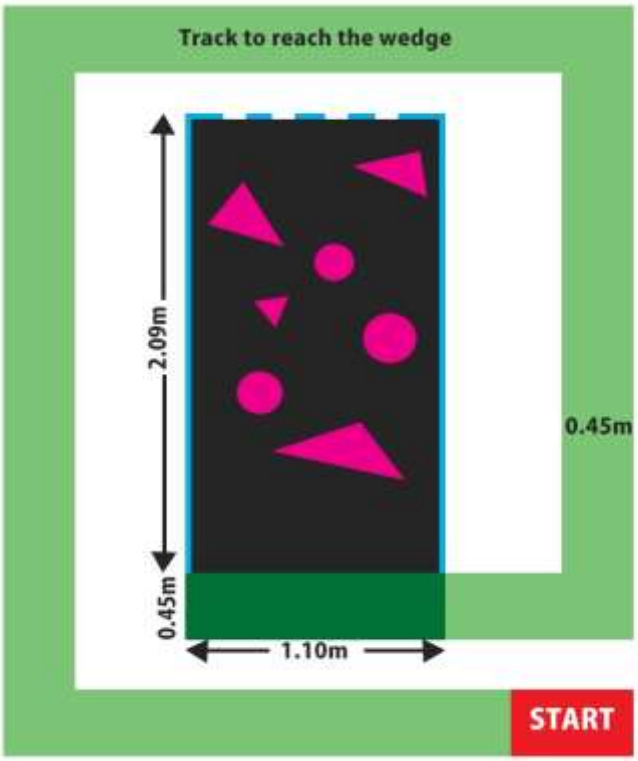
The manually controlled bot will travel an obstacle course to reach the main play arena. A bot is supposed to travel front and back in order to catch the balls. The main arena is an inclined surface containing different types of obstacles so that the balls while coming down change their paths many times in order to confuse the participant manoeuvring the bot. The balls are of different colours having different points. The bot would have to move such that it catches the most number of points and simultaneously is not catching the balls having negative points. The bot having the maximum number of points wins this event.

The Arena:

- The manually controlled bot will cross an obstacle course to reach the main play area. The course may consist of obstacles like wedges, rocks, etc.
- The main play area will consist of an inclined surface on which several obstacles will be placed.
- The coloured balls will be released from the slits shown in the figure.
- The **obstacles will be placed randomly in the original arena**. (Here they are shown for understanding purpose only).




2.09m
0.45m
0.22m
1.10m


Track to reach the wedge
2.09m
0.45m
0.45m
1.10m
START

GAMEPLAY:

Game procedure:

- The bot will cross the obstacle course to reach the play area. The time(seconds) required to cross the obstacle course will be deducted from the initial score.
- Four different coloured balls of different points will be **released simultaneously** from one end when the bot reaches the play area.
- The balls will collide with the obstacles and change its direction. The bot will have to track the ball and catch it when it will arrive at the opposite end. **This will be repeated 15 times and the score will be noted in all cases.**
- **Ball specification:** A standard **"table tennis ball"** or **"Rubber Ball"** of four different colours will be used for the event. There will be **3 minion balls (Kevin, Stuart and Bob)** also for bonus points.

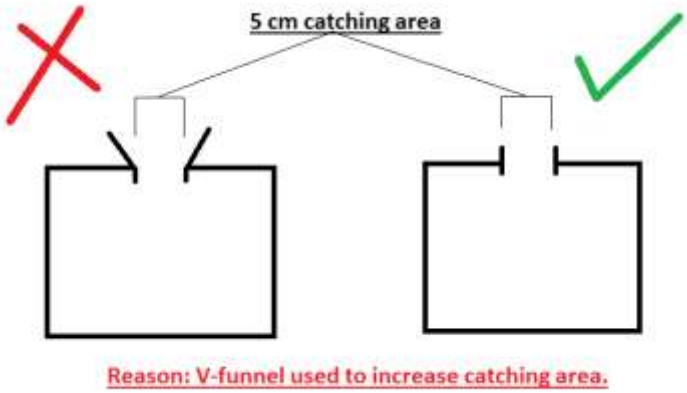
POINTS CRITERIA:

1. Initial score of 180 points will be given to each team. The time taken to cross the obstacle course will be deducted from the initial score.
2. If the bot catches a **BLACK** ball, it loses **20 points** (-20).
3. If the bot catches a **RED** ball, it loses **10 points** (-10)**.**
4. If the bot catches a **GREEN** ball, it earns **20 points** (+20).
5. If the bot catches a **BLUE** ball, it earns **30 points** (+30)**.**
6. **Total 3 minion balls having 50 points each will be randomly released in between the total 15 throws.**

In case of a tie then the team having the least number of negative points will win.

BOT SPECIFICATIONS:

- The manually controlled bot must fit in a cube of 25x25x25 cc.
- **No** kind of AC power supply will be provided at the event.
- Each team is allowed to have only one bot.
- The catching area of the bot must be a hole of diameter 5 cm only. There must not be any addition (like a v-funnel etc.) to the hole.



Points to be noted:

- The dimension and inclination of the arena can be modified.
- Obstacles are dummy model only. These are subject to change.

ELIGIBILITY

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

TEAM SPECIFICATIONS:

- Each team must not exceed 4 members.
- They may not necessarily be from the same institute.
- Each team must have a team leader who must be present when called upon by the organizers.

Reference Videos:

Teams participating kindly do watch the videos in the link to get further clarity :
https://drive.google.com/open?id=0BwvEs_222Es3TjkwdGJmRm5FajA

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