1. BOMB DISPOSAL ROBOT

JISTech,2019 brings you a chance to participate in the Event "**Bomb Disposal Robot**" which might be the closest one can get to such a display of human brilliance. Be the skipper of your own hatch. Time has come to boost up your creativity to a different level. This event provides you a platform to test your creativity.

Problem Statement

The robot should be capable of carrying the bomb into a safe zone (specified area in the arena) and should be able to diffuse the bomb. The robot should have been fabricated, assembled by the team. Readymade robots are not allowed.

Task:

1. Robot should keep the bombs in the safe zone (specified in the arena) and also should dispose the bomb.

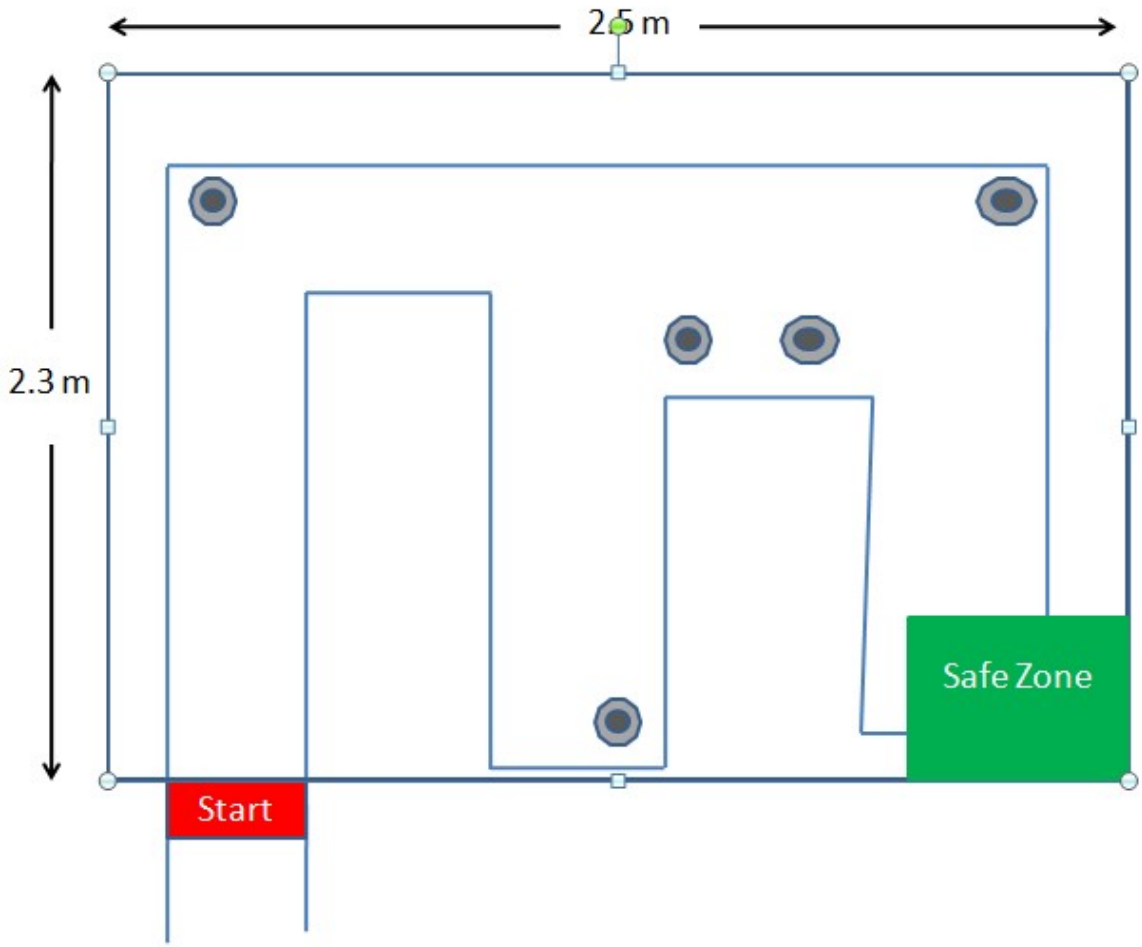
Robot Specification:

Dimension:

- Maximum dimension of the robot should not exceed 30cm*25cm*35cm (L x b x h)
- Tolerance of 1 cm can be considered in max. Dimension.
- The robots must be electrically powered.

Arena Specification:

- The arena will be pool of 2.5m x 2.3m x 15 cm (L x b x h)



Power Supply:

- The potential difference between any two points should not exceed more than 18 volts.
- There is no ampere limit.
- Everyone should bring their own Adaptor and extension cord only power source will be provided.

Event Detail:

The event will be held in two rounds:
Every team will be give a time span of 10 minutes for the completion of the task. Robot carry at most one bomb at a time.

Credit Rules:

1. If the robot reaches the safe zone with the bomb +20 points will be awarded to the team.
2. If the robot diffuses the bomb in the safe zone then +10 points will be awarded to the team.

De-credit Rules:

- If the robot falls from the arena then -10 points will be deducted from the score of the team.
- **If the bomb drops from the robot during the task then -5 points will be deducted from the score of the team.**
- **If the team wants to restart the game by their will -30 points will be deducted from the score of the team.**
- **Every team has at most one time to restart the game.**

Winning Criteria:

All the teams will be judged according to the score an top three will be awarded.

Attraction:

- Participation certificate will be given to EACH TEAM MEMBERS.
- 1st , 2nd and 3rd will be AWARED separately.

GENERAL RULES AND REGULTIONS: (Strictly To Be Maintained)

- Though team members may be from different institutions, all participants must produce valid ID cards at the time of registration.
- Every team must should contain maximum 5 members.
- No participant can register twice or from different teams.
- No robot can be shared by more than 1 team.
- Teams are not permitted to change the parts of their robots during a run.
- Participants must bring their required DC power supply of their own.

2 . DROID BLITZ

JISTech,2019 brings you a chance to participate in the Event "**DROID BLITZ**" which might be the closest one can get to such a display of human brilliance. Be the skipper of your own hatch. Time has come to boost up your creativity to a different level. This event provides you a platform to test your creativity.

Problem Statement

To build a Remote Controlled electric-powered Robot which can move on both Land and Water surfaces in both complete and broken pathways.

Task:

- Build a robot that can be used to perform tasks on land and water.

  Traverse across uneven paths.

- Deliver packages kept on land and place it on specified locations.

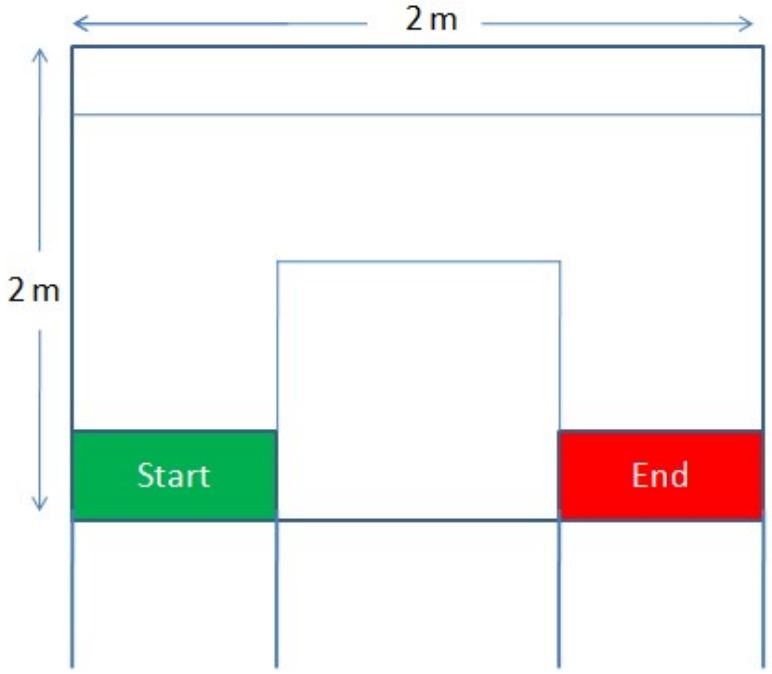
Robot Specification:

Dimension:

- Maximum dimension of the robot should not exceed 25cm*25cm*15cm (L x b x h)
- The portion of robot below water surface should not be more than 15 cm.
- Tolerance of 1 cm can be considered in max. Dimension.
- The pushing portion of the bot can have any shape, but should be under the maximum dimension.
- The robots must be electric powered.

Arena Specification:

● The arena will be pool of 2m x 2m x 20 cm (L x b x h)



Power Supply:

- The potential difference between any two points should not exceed more than 18 volts.
- There is no ampere limit.
- Everyone should bring their own Adaptor and extension cord only power source will be provided.

Event Detail:

The event will be held in two rounds:

1. Qualifying Round

● In this round the robots have to complete the specified track in minimum time.

● 50% of the total participating team will be shortlisted on the basis of least time for the final round.

2. Final Round

● The robot will be placed in the pool at certain position, and three balls will be placed at different position in the pool. IF the robot touches the side wall points will be reduced.

● The robots have to push each ball individually and place it into the goal post.
● Maximum time given to each team for this round will be **8 minutes.**

Winning Criteria:

Team which has taken least "**total time** " in competition will be the winning team.

Advantage:-

● Advantage in time (20 sec.) will be given to a robot having battery on robot.
● You can use ready-made propeller but an advantage in time (20 sec.) will be given to a team having self-made propeller.
* **Total time = time taken in (1st & 2nd) round – advantage in time**

Attraction:

Participation certificate will be given to EACH TEAM MEMBERS.
1st , 2nd and 3rd will be AWARED separately.

GENERAL RULES AND REGULTIONS: (Strictly To Be Maintained)

- Though team members may be from different institutions, all participants must produce valid ID cards at the time of registration.
- Every team must should contain maximum 5 members.
- No participant can register twice or from different teams.
- No robot can be shared by more than 1 team.
- Teams are not permitted to change the parts of their robots during a run.
- Participants must bring their required DC power supply of their own.

3. LINE FOLLOWING ROBOT

JISTech,2019 brings you a chance to participate in the Event "**Line Following Robot**" which might be the closest one can get to such a display of human brilliance. Be the skipper of your own hatch. Time has come to boost up your creativity to a different level. This event provides you a platform to test your creativity.

Problem Statement

Robot has to follow the given path and reach the target point in minimum amount of time

Task:

1. For a given random path robot should follow the path and reach the destination/target point in minimum amount of time

Robot Specification:

Dimension:

- Maximum dimension of the robot should not exceed 30cm*25cm*15cm (L x b x h)
- Tolerance of 1 cm can be considered in max. Dimension.
- The extensions of the robot which is used for pushing/defending should not consist of any type of robotic arms, sticky materials (double tape etc...)
- The extension of the robot which is used for pushing/defending can have any shape, and should not exceed the maximum dimension.
- The robots must be electrically powered.

- **Arena Specification:**

  In the arena a random selected path will be given for the robot to follow.

The event will be held in one round:

Credit Rules:

1. For crossing the obstacle path 10 seconds will be deducted from the total time completion of the robot.

De-credit Rules:

- If the robot deviates from its path then +10 seconds will be added to the final time completion of the robot.
- If the team member wants to restart the task then +30 seconds will be added to the final time completion of the robot.

Second Round:

- All the teams will be judged on the basis of the completion time of he task top three teams with the less completion time will be awarded.

Attraction:

- Participation certificate will be given to EACH TEAM MEMBERS.
- 1st , 2nd and 3rd will be AWARED separately.

GENERAL RULES AND REGULTIONS: (Strictly To Be Maintained)

- Though team members may be from different institutions, all participants must produce valid ID cards at the time of registration.
- Every team must should contain maximum 5 members.
- No participant can register twice or from different teams.
- No robot can be shared by more than 1 team.
- Teams are not permitted to change the parts of their robots during a run.
- Participants must bring their required DC power supply of their own.

4. ROBO SOCCER

JISTech,2019 brings you a chance to participate in the Event "**Robo Soccer**" which might be the closest one can get to such a display of human brilliance. Be the skipper of your own hatch. Time has come to boost up your creativity to a different level. This event provides you a platform to test your creativity.

Problem Statement

In Robo Soccer challenge, maximum two manually controlled robots will compete against each other in an arena which resembles an actual soccer field. The robot should have been fabricated, assembled by the team. Readymade robots are not allowed.

Task:

2. Robot should goal the ball in the specified goal post which will be in the opposite team block .

3. Robot should be capable of either pushing or defending the ball but not to hold/carry the ball.

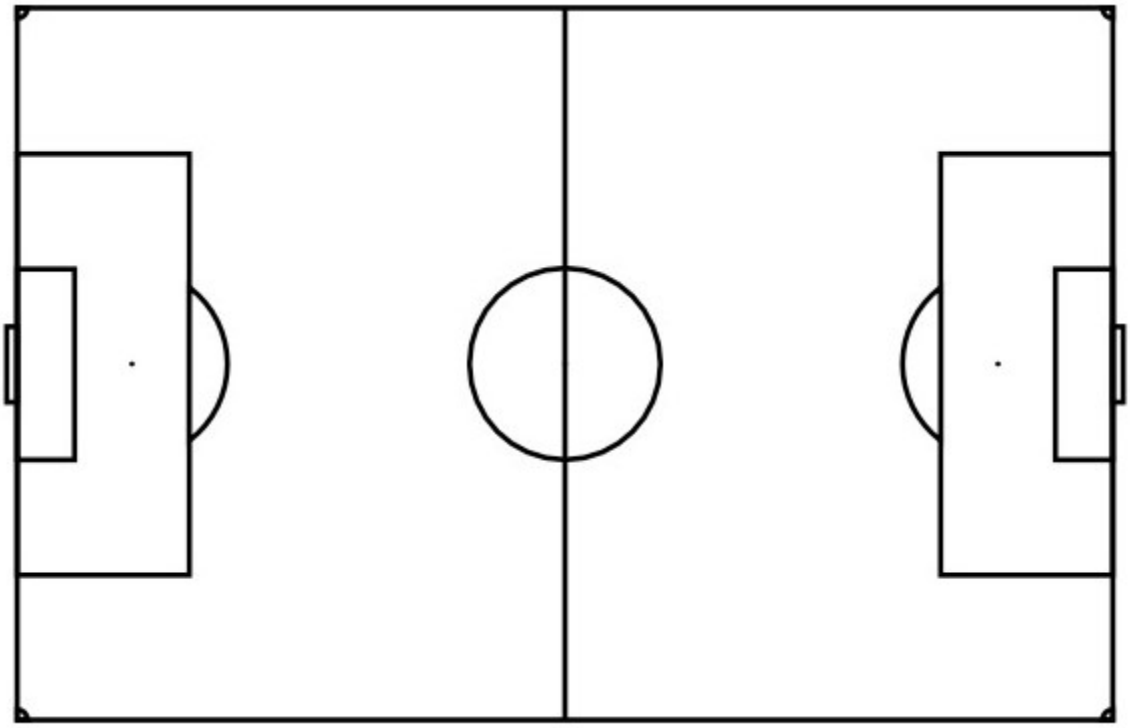
Robot Specification:

Dimension:

- Maximum dimension of the robot should not exceed 30cm*25cm*15cm (L x b x h)
- Tolerance of 1 cm can be considered in max. Dimension.
- The extensions of the robot which is used for pushing/defending should not consist of any type of robotic arms, sticky materials (double tape etc...)
- The extension of the robot which is used for pushing/defending can have any shape, and should not exceed the maximum dimension.
- The robots must be electrically powered.

- **Arena Specification:**

- The arena will be pool of 2.5m x 2.3m x 15 cm (L x b x h)



Power Supply:

- The potential difference between any two points should not exceed more than 18 volts.
- There is no ampere limit.
- Everyone should bring their own Adaptor and extension cord only power source will be provided.

Event Detail:

The event will be held in two rounds:

Two teams will be given a time span of 3 minutes for the game.

Credit Rules:

- For each goal of the ball in the goal post 20 points will be awarded to the team.
- If the specific teams goals for continuously for 3 times then 10 points will awarded for the specific team.
- If the teams gets the same score at the end of the give time span then it will be a draw in this scenario the game will be extended for 1 minute.

De-credit Rules:

- If the robot falls from the arena then 5 points will be deducted for the specific team.
- If when the robot is in the arena and stopped due to some technical error the team member can fix the robot by taking out of the arena for the exchange of deduction of 10 points from his score and restart.
- If the team member pulls the robot with the wire attached to it physically during the game then 5 points will be deducted from his score.
- If a specific team throws the ball out of the arena continuously for 3 times then 5 points will be deducted from his score of the specific team

First Round:

- All the teams will be ranked according the points awarded half of the teams will be qualified for the Second round

Second Round:

- All the qualified teams will be competed against each other and from the winning teams of the second round Top three teams will be taken based on the points awarded.

Attraction:

Participation certificate will be given to EACH TEAM MEMBERS.
1st , 2nd and 3rd will be AWARED separately.

<u>GENERAL RULES AND REGULTIONS:</u> (Strictly To Be Maintained)

- Though team members may be from different institutions, all participants must produce valid ID cards at the time of registration.
- Every team must should contain maximum 5 members.
- No participant can register twice or from different teams.
- No robot can be shared by more than 1 team.
- Teams are not permitted to change the parts of their robots during a run.
- Participants must bring their required DC power supply of their own.

5. SAND ROVER

JISTech,2019 brings you a chance to participate in the Event "**Sand Rover**" which might be the closest one can get to such a display of human brilliance. Be the skipper of your own hatch. Time has come to boost up your creativity to a different level. This event provides you a platform to test your creativity.

Problem Statement

The robot should be capable of moving on different irregular land surfaces. The robot should have been fabricated, assembled by the team. Readymade robots are not allowed.

Task:

4. The robot should reach the final point by crossing all the obstacles in minimum amount of time.

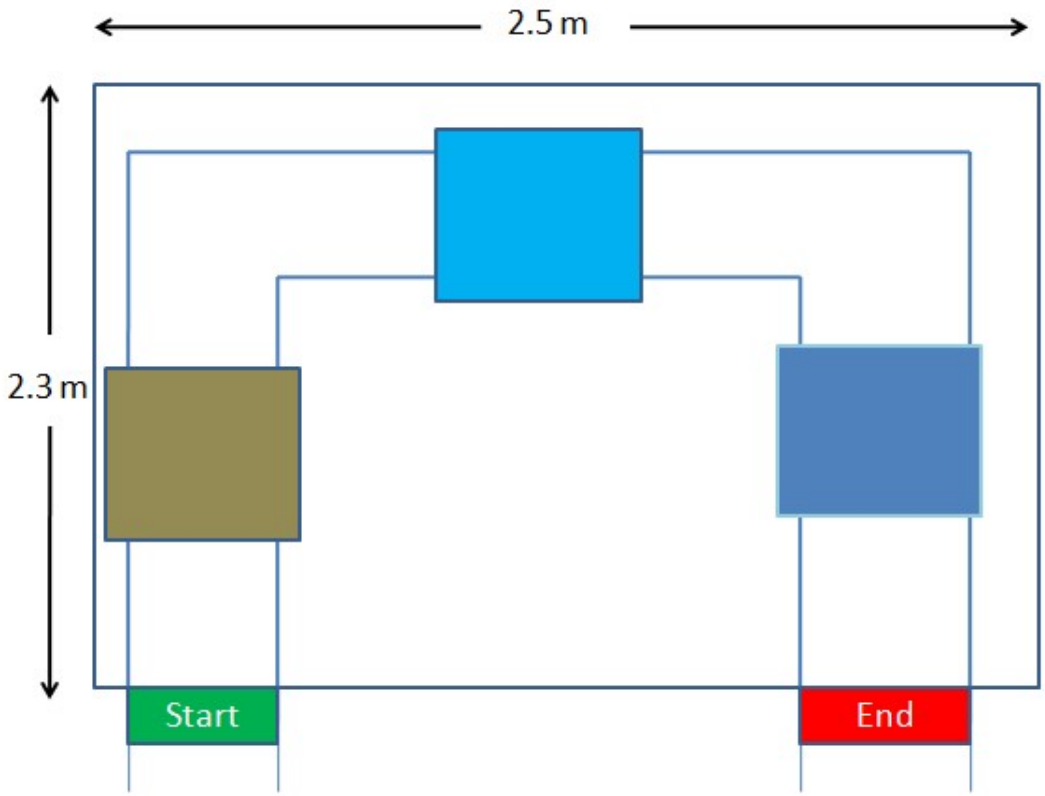
Robot Specification:

Dimension:

- Maximum dimension of the robot should not exceed 30cm*25cm*15cm (L x b x h)
- Tolerance of 1 cm can be considered in max. Dimension.
- The robots must be electrically powered.

Arena Specification:

- The arena will be pool of 2.5m x 2.3m x 15 cm (L x b x h)



Power Supply:

- The potential difference between any two points should not exceed more than 18 volts.
- There is no ampere limit.
- Everyone should bring their own Adaptor and extension cord only power source will be provided.

Event Detail:

The event will be held in two rounds:

De-credit Rules:

- If the robot falls from the arena then +10 seconds will be added to the final time completion of the robot.

- If the team member want to restart the race then +30 seconds will be added to the final time completion of the robot.

First Round:

- All the teams will be ranked according the completion time the teams which have completion time above the critical time will be qualified for the Second round.

Second Round:

- All the qualified teams will be participating in the second round the top three teams with the less completion time will be awarded.

Attraction:

- Participation certificate will be given to EACH TEAM MEMBERS.
- 1st , 2nd and 3rd will be AWARED separately.

GENERAL RULES AND REGULTIONS: (Strictly To Be Maintained)

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- No robot can be shared by more than 1 team.
- Teams are not permitted to change the parts of their robots during a run.
- Participants must bring their required DC power supply of their own.

Team Members:

ISLAM KHAN (Event Co-ordinator)
DHANANJAY THAKUR
FAIZ AKRAM
DEBAMOY DATTA
BHAVYA JHA
ANAMIKA PAUL
PRINCE KUMAR
RAJ DEB

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