OPERATION ALIBABA

Alibaba, a good friend of yours has been kidnaped by the thieves. You have searched for him and you have not found him. Alibaba being a genius guy left a clue for you. The clue was a line which would lead to his destiny (Kidnapped area). Your aim is to follow the line and rescue Alibaba from the thieves with the help of **Valor-801** (an Autonomous Intelligent Line Following Robot).

The rescue mission will be completed in two stages. First stage starts from where Alibaba was been kidnaped and ends at the house where he was kept. Second stage starts from the house and ends by finding the exact room where he was put under control. So you have to construct an autonomous robot(Valor-801) to accompany you and have to rescue your best friend Alibaba from the thieves.

The teams has to participate in the first round of the mission and the selected teams of first round will be qualified to play in the second stage.

Organizers Details:-

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OPERATION ALIBABA-I

PROBLEM STATEMENT:

Alibaba, a good friend of yours has been kidnaped by the thieves. You have searched for him and you have not found him. Alibaba being a genius guy left a clue for you. The clue was a line which would lead to his destiny (Kidnapped area). Your aim is to follow the line and rescue Alibaba from the thieves with the help of **Valor-801** (an Autonomous Intelligent Line Following Robot).

MISSION:

- The mission starts from where Alibaba has been kidnaped and ends at the house where he was kept under control.
- The mission will be successfully completed if Valor-801 navigates to the correct destination and finds the house where Alibaba was kept.
- Valor-801 has to stop where it finds an obstacle and has to glow a LED which indicates that it has found the house where he was kept.

RULES AND REGULATIONS:

- The maximum number of members in a team is 4.
- The bot should be able to fit in a cube of 25cm length.
- The battery's voltage should not exceed 12V. It is not mandatory that you have to use only onboard power supply.
- The bot should follow the path in the arena.
- Restart can be taken any number of times but the Robot will be placed at the previous check point.
- Robot should start the game by pushing a single power button or any push button. No interruption is allowed without appealing to the event organizer.
- No Lego kits boards and readymade boards are allowed to use for the game.
- Only one person from a group is allowed to talk with the event organizer in case of an issue.
- Check points are randomly arranged in the arena. Crossing those check points will increase your score.
- If the bot went out of the line it has to start again from the previous check point. Touching the bot will lead to penalty points decided by the event organizer.
- It the bot could not be able to overcome the special zones of the line the bot can skip that zones and continue thereafter. But the team will lose the points for that zone.
- The maximum time allowed for a team is 6min.

ARENA DESCRIPTION:

- The arena contains 3cm wide black lines (white line at some places) with right angled turns, curved track and U turns. The sample arena is as below:-
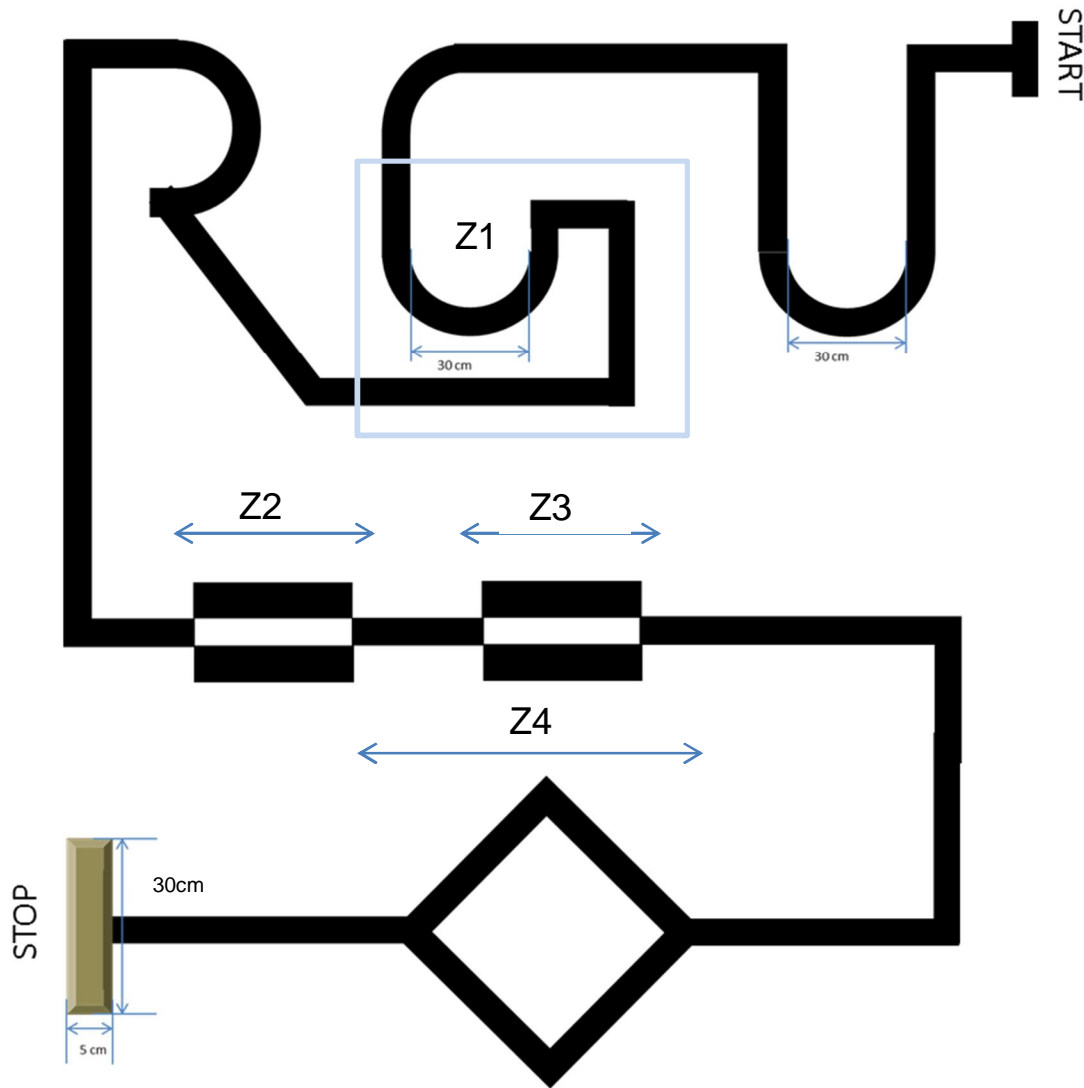
- The line is of 3cm width throughout the arena.
- Every "U" turn is of 30 cm diameter circle.
- The Robot has to stop at the obstacle placed at the end of the arena and the dimensions of the arena are clearly mentioned.

SCORING:

- There 4 difficult zones in the arena. For each zone your bot solves, points will be awarded accordingly.
- **Zone1:** For successful traversal of this zone you will be awarded with 80 points.
- **Zone2&3:** 40 points to each.
- **Zone4:** 60 points.
- Along with these points additional points are also awarded for crossing some check points. The check points will be announced before the commencement of the game play.
- For each time you reset your bot you will get minus points.

OPERATION ALIBABA-II

PROBLEM STATEMENT:

In the previous task you have found the place where your friend Alibaba has been kept. After reaching the place you came to know that the clue which he left has guided you to reach the house but not exact place where he was hid. It is very difficult to reach the exact place of Alibaba because the way includes many confusing paths, turns and puzzles. So with the help of Valor-801 (Intelligent Line Follower) you have to reach the exact spot and save your friend.
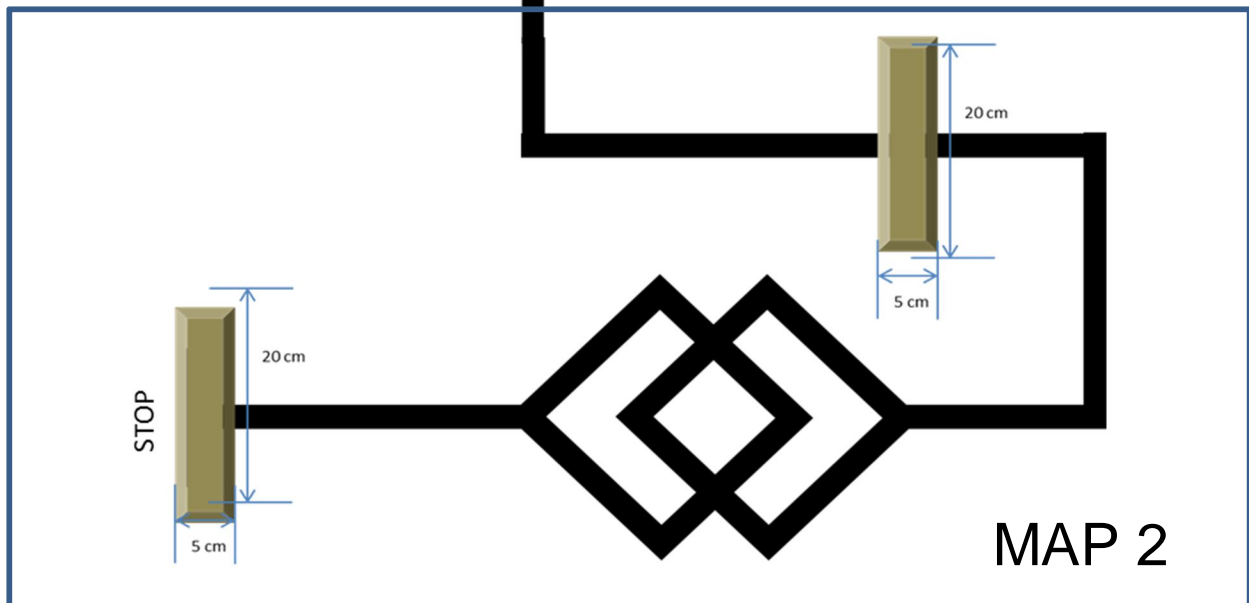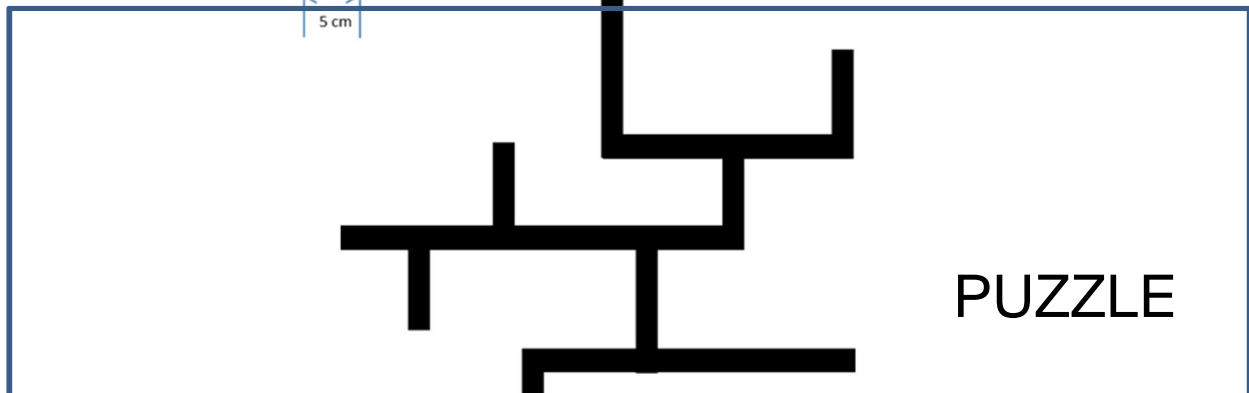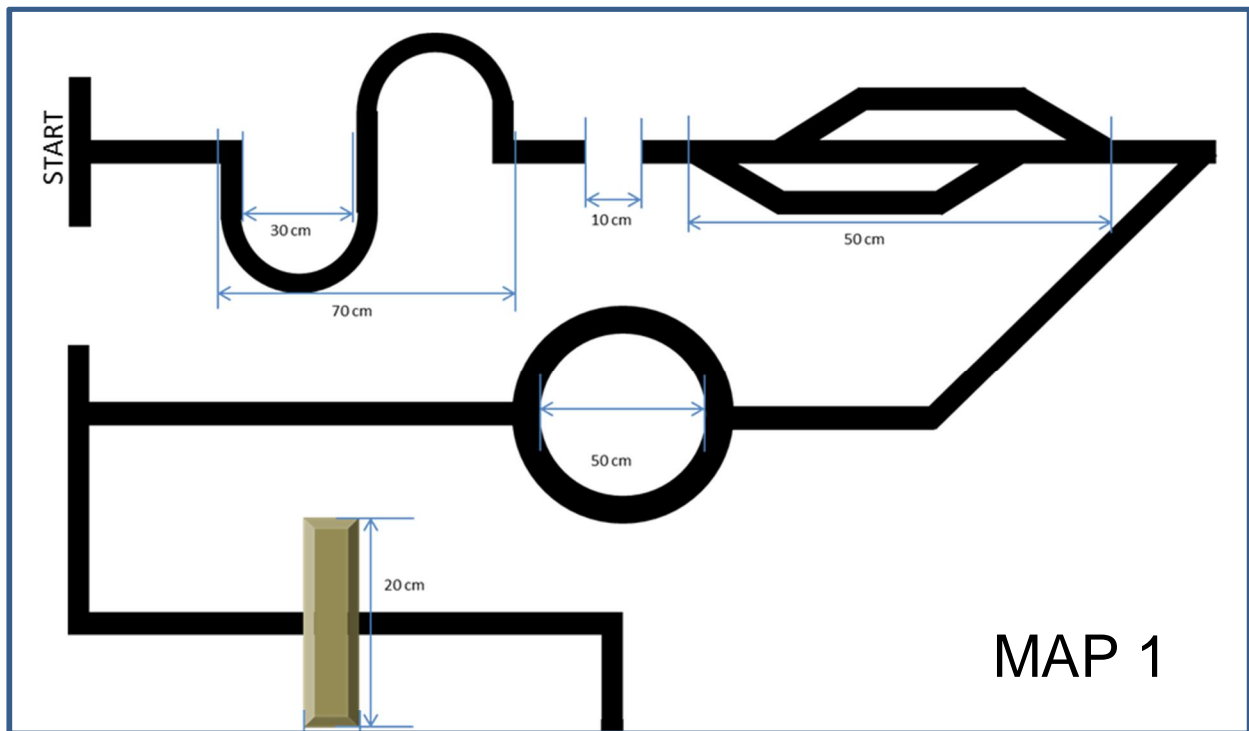
MISSION:

- The mission starts from the house where Alibaba has been kidnaped and ends where he was kept in the secret room.
- The mission will be successfully completed if Valor-801 navigates to the correct destination and finds the room where Alibaba was kept.
- Valor-801 has to stop where it finds the room in which Alibaba was kept.

RULES AND REGULATIONS:
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- All rules and regulations for this round is also same as the previous round but the maximum time allowed for a team is 10min (may be changed according to the arena complexity).

ARENA DESCRIPTION:

- The arena contains 3cm wide black lines (white line at some places) with right angled turns, curved track, T shapes, U turns, 15 degree angles, circles and obstacles.
- The line is of 3cm width throughout the arena.
- Every "U" turn is of 30 cm diameter circle.
- The obstacles are placed randomly on the line. The bot has to avoid the obstacle and has to follow the same line.
- In between map1 and map2 there will be a small maze (puzzle) as mentioned in the arena and it may be changed in the final game play.

START

30 cm

70 cm

10 cm

50 cm

50 cm

20 cm

5 cm

MAP 1

PUZZLE

20 cm

5 cm

STOP

20 cm

5 cm

MAP 2

!!! ALL THE BEST !!!