

**Robotrek Finals**  
**8th November, 2020**  
**1PM - 8PM**

**Problem Statement:**

Build a left-wall following robot capable of completing the provided course in a Gazebo world and reading AR Tags. The challenge consists of the following four parts:

1. Development of URDF/XACRO model of the robot with appropriate sensors. This includes all the plugins and sensors required for the robot to be able to follow a wall.
2. Execution of left-wall following behaviour in the provided Gazebo world. This includes creating all the required nodes to be able to execute this behaviour.
3. Reading AR Tags placed on the wall, publishing their Tag ID on the topic /AR\_Tag\_ID\_Topic and saving the Tag ID for each Tag in a .txt file.
4. **Bonus Task:** Develop and store a map of the provided Gazebo world as a .pgm file.

Please note that if a team is unable to develop the robot model or any of the required plugins/sensors, they may request the organisers for a readymade body with the required plugins/sensors. However, points shall be deducted based on the degree of completion of the body by the team.

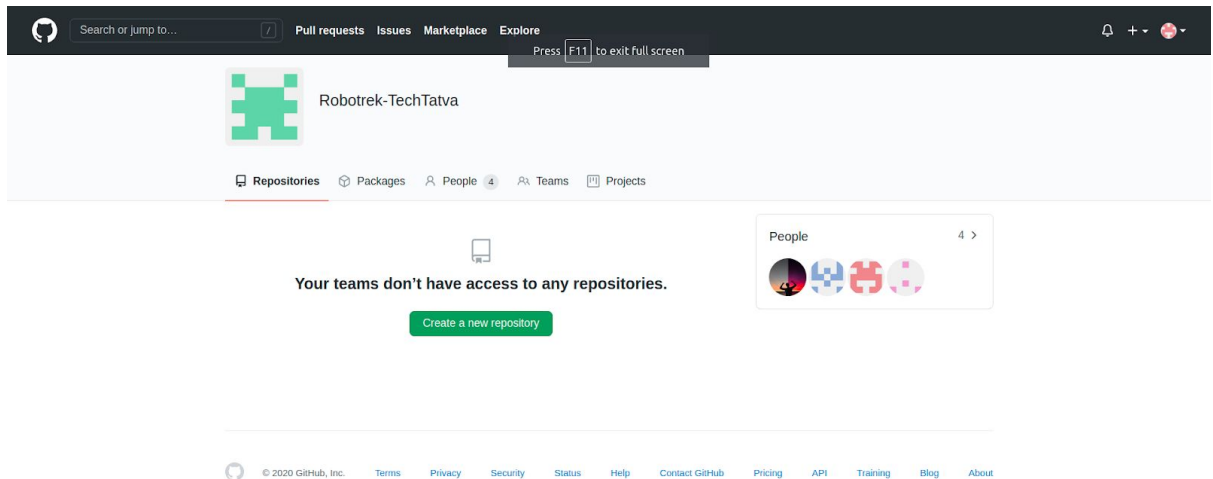
**Submission Guidelines:**

Similarly to the Qualifiers, teams are required to push their entire workspace to the Robotrek GitHub Organisation page.

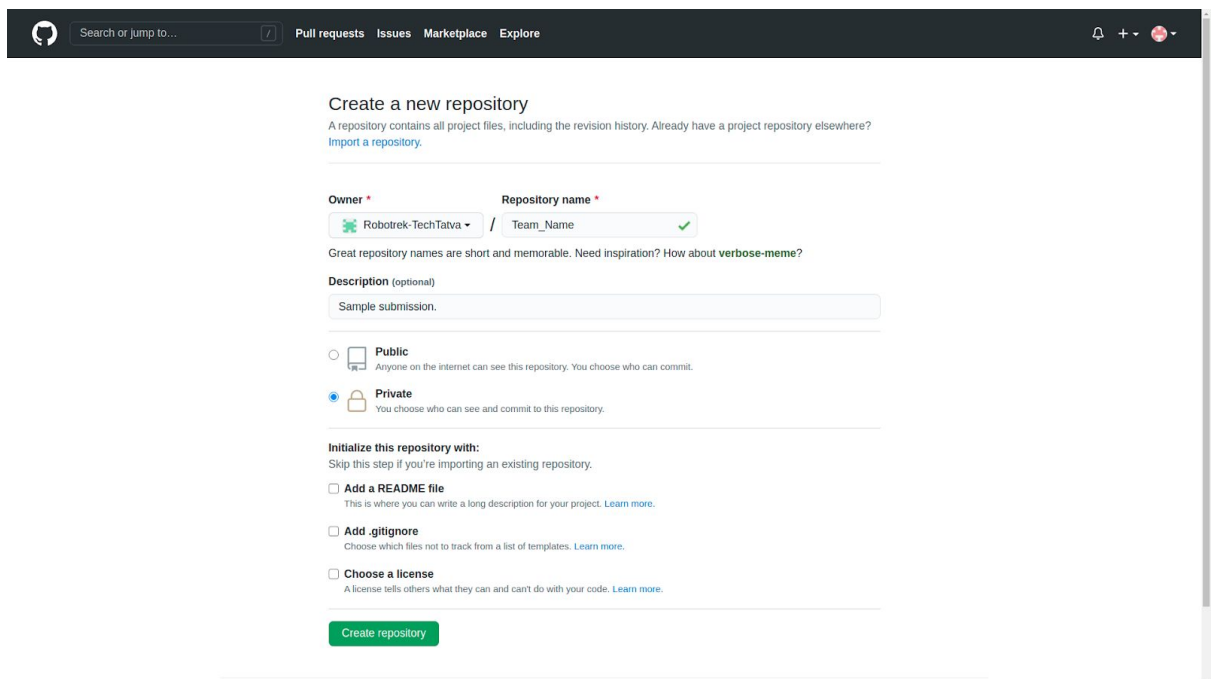
The team leader is required to push the final compilation of all the solutions in the repository **privately** to the Robotrek GitHub organisation page.

The access invitation to the organisation repository has already been sent to the Team Leader from the previous round.

1. Visit <https://github.com/Robotrek-TechTatva>
2. Create a new repository



3. Set the repository name to the name of the team.



**Please make sure that the repository is set to 'Private'. Failing to do so may result in immediate disqualification.**

**Do not initialise the repository with a README file.**

Once the repository has been made, follow the given steps to submit the solutions.

*Navigate to the root of the Workspace Directory on your device after finalising the solutions.*

```
git remote add origin https://github.com/Robotrek-TechTatva
git add .
git commit -m 'team_name_submission'
git push --force origin master
```

**After this the teams must confirm their submission at <http://robotrek.herokuapp.com> before the deadline.**

**Team Name and Password for the portal are the teamID and userID of the Team Leader respectively.**

**Please ensure that the submission is confirmed *before* 8PM.**

The repository shall then immediately be locked by the organisers. Updating or modifying the repository after confirming the submission is strictly prohibited and may result in disqualification. Please note that the exact time of confirmation shall be used as a tiebreaker in case of matching scores among teams.