

## Task 4

### Task 4.1

1. Please, create a **GitHub** account and start uploading the Task you did before.

We need to organize our **GitHub** repository, our structure will be

- Task1 “directory”/(screenshot, pdf,...)
- Task 2 “directory”/(screenshot, pdf,...)
- Task 3 “directory”/(screenshot, pdf, diagrams,...).

Once you finish the task send me to github via Whatsapp.

Notes: how you can start upload to github:

1. Create a new repo.
2. Open terminal, choose where you will save your tasks, create a folder for each task.
3. Open the terminal with a specific location where you saved the tasks folder and start running the following commands.
4. `git init`
5. `git remote add origin https://github.com/ACCOUNT_NAME/REPO_NAME.git`
6. `git add .`
7. `git commit -m "first commit"`
8. `git push origin main`

**Notes:**

- Please upload the tasks on your **GitHub** account.

### Task 4.2

Let's create our **Nodes** and **Topics** over ROS.

We have a robot and the robot will have some sensors, **Lidar**, **Depth camera**, **Encoder**, **IMU** and **RGB camera**.

1. Let's say the robot moves and publishes the **encoder** data over the **Velocity** node.
2. Let say you want to send a laser data from **lidar** and subscriber this data over a **SLAM** node.
3. Let's say you have a camera, publish **RGB** images and subscribe to the **Localization** node.

4. Let's say you publish the **IMU** data and subscribe to **pose estimation** and **Localization** nodes.

**Notes:**

- Your task is visualize all these nodes and topics with accurate msgs names.
- Please upload the tasks on your GitHub account.

### **Task 4.3**

Let's create our **Service client** and **Service response** over ROS.

Let's say we have a robot and the robot working inside a warehouse, you want to know what the robot sees every 30 minutes.

Your task is to visualize using the ROS service, how you can do that.

**Notes:**

- Your task is visualize all these Services with accurate msgs names.
- Please upload the tasks on your GitHub account.