Masters 2 – Robotics Projects

Project

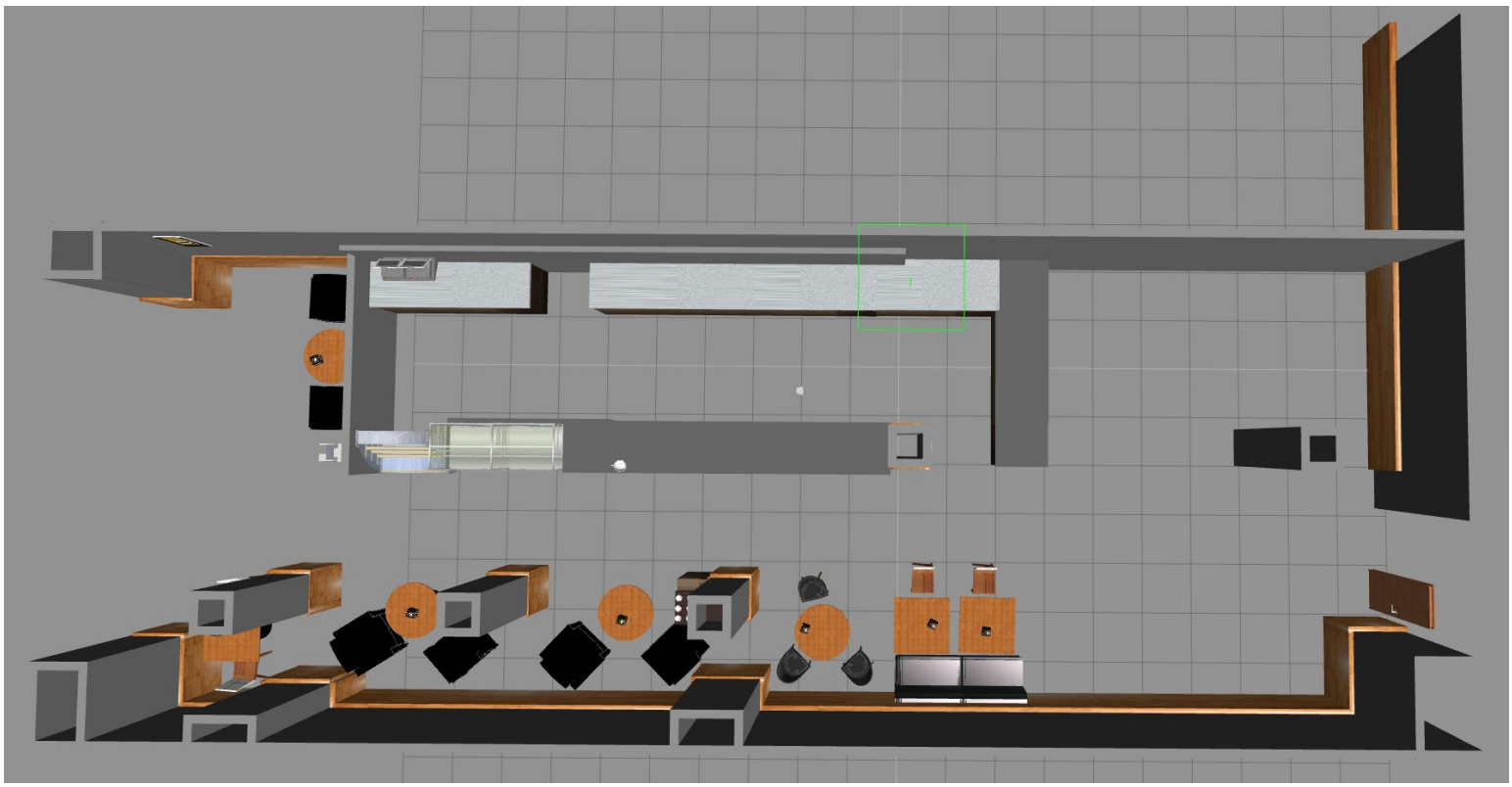
The project development is meant to practice some of the knowledge that you've gained during tutorial courses: Linux, Python, ROS, …

Project development **must** be performed on **TheConstruct Web Plateform**:

Mastering with ROS: Turtlebot3 Course –> **8 - Project Part 1**

Scene

This project will be based on a new environment, which is a map of a real Costa Coffee in Barcelona:



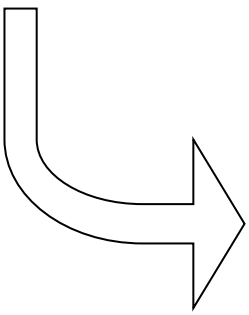
To get familiar with the environment and the robot, take a stroll around to have a closer look at all the terrain and elements. Also get used on how **Turtlebot** performs in this terrain. Use the **keyboard_teleop.launch** launch to move it.

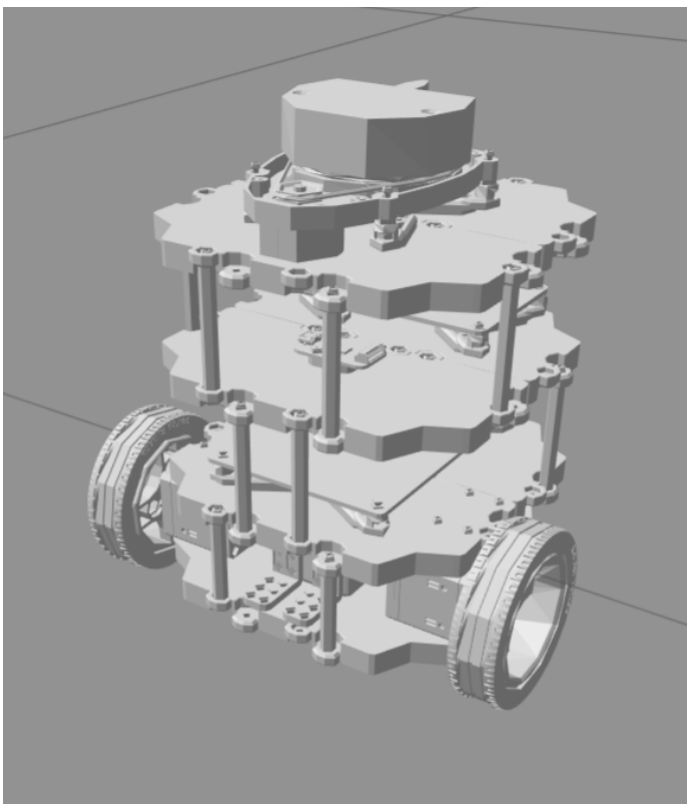
Execute in WebShell #1

```
Entrée [ ]:roslaunch turtlebot_teleop keyboard_teleop.launch
```

Turtlebot3 Robot

For this part of the project, you will use the Turtlebot3 Burger model





Tasks to accomplish

For the **project** to be considered **successfully completed**, you will need to complete the following **4 tasks**:

1. Create a script that moves the robot around with simple /cmd_vel publishing. See the range of movement of this new robot model.

2. Create the mapping launches, and **map the whole environment**. You have to finish with a **clean map of the full cafeteria**. Setup the launch to be able to **localize** the **Turtlebot3 robot**.

3. Set up the move base system so that you can **publish a goal to move_base** and Turtlebot3 can reach that goal **without colliding with obstacles**.

4. Create a program that allows the **Turtlebot3** to **navigate** within the environment following a **set of waypoints**. Waypoints **location** are presented on the **next page**.

The **3** following **spots are mandatory**: