The process of launching TurtleBot3 navigation, including installation and map creation, can be detailed for a GitHub repository.

1. Install ROS and TurtleBot3 Packages:

- **Install ROS:** Follow the official ROS installation guide for your specific ROS distribution (e.g., Noetic, Foxy).

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) 'main" > /etc/apt/sources.list.d/ros-latest.list

sudo apt-key adv --keyserver 'hkp://keyserver.ubuntu.com:80' --recv-key C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654

sudo apt update

sudo apt install ros-noetic-desktop-full # Replace 'noetic' with your chosen distribution
```

Install TurtleBot3 Packages.

sudo apt install ros-noetic-turtlebot3 ros-noetic-turtlebot3-simulations ros-noetic-turtlebot3-msgs ros-noetic-turtlebot3-teleop

Set up ROS Environment.

echo "source /opt/ros/noetic/setup.bash" >> ~/.bashrc

source ~/.bashrc

2. Create a Map:

- **Launch Gazebo Simulation (optional, for map creation in simulation):**

roslaunch turtlebot3_gazebo turtlebot3_world.launch

Launch Gmapping for mapping.

roslaunch turtlebot3_slam turtlebot3_slam.launch slam_methods:=gmapping

- **Teleoperate TurtleBot3 to explore and build the map:**

roslaunch turtlebot3_teleop turtlebot3_teleop_key.launch

Save the map.

rosrun map_server map_saver -f ~/my_map

3. Launch Navigation:

Launch Navigation Stack

roslaunch turtlebot3_navigation turtlebot3_navigation.launch map_file:=~/my_map.yaml

- **In RViz, set the initial pose and navigation goals.**

GitHub Repository Structure:

A GitHub repository for this project could include:

- `README.md`: Detailed instructions, including installation, map creation, and navigation steps.
- `maps/`: Directory to store generated map files (`.yaml` and `.pgm`).

- `launch/`: Custom launch files if created for specific setups.
- `scripts/`: Any custom scripts for automation or specific tasks.