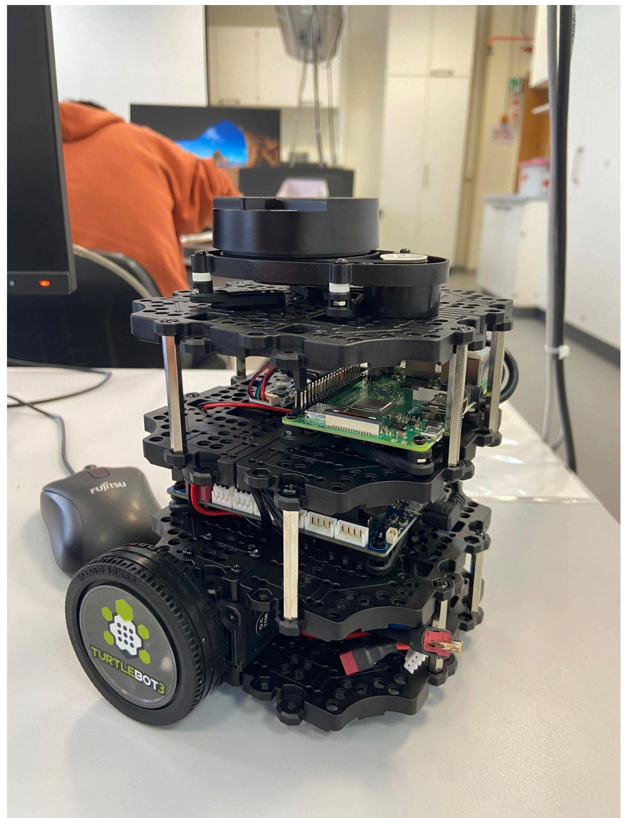
Laboratory Report - 2

Team members:
Zholaman Kuangaliyev
Arystan Amangeldi
Kanagat Kantoreyeva

Assembling the TurtleBot3

We have followed the given manual to assemble our Turtlebot.



Preparing the Raspberry Pi

We have downloaded the official Command Line Interface (CLI) Ubuntu image for Raspberry Pi 3 model, with pre-installed ROS Noetic and other features. The image was flashed to microSD card through "Raspberry Pi Imager" and system has been setted up according to the steps given in presentation.

PC Setup

On our laptop we already had installed desktop version of Ubuntu 20.04 LTS and ROS Noetic. Going through quick setup guide, all ROS and TurtleBot3 dependent packages were installed.

Binding PC and Raspberry Pi

By modifying the “**bashrc**” file we were able to to configure the network between PC and Raspberry Pi, taking into account that they are connected to single router (in our case hotspot). We have faced some issues while binding the Raspberry Pi to the PC, which turned out to be the missing packages for OpenCR setup. After successfully uploading firmware, we have tested conditions of motors by pressing the buttons on the OpenCR board.

Simple Teleoperation

Running the “**roscore**” on main computer and launching the TurtleBot, we could send velocity commands wirelessly (see attached video: https://drive.google.com/file/d/1oty-KZKo0h4Bm6q8ytbFmSuYS9tQEhcP/view?usp=sharing).