IntelChair

Project in Informatics Engineering 2018/2019

Final Presentation

Group 7

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Context

IntelChair

Motorized Wheelchair

Laptop

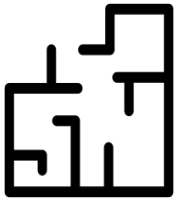
RGBD Camera

Laser Rangefinder

Inertial Motion Unit

Main Features

Manual Control



Room Mapping

Navigation

Extra Features

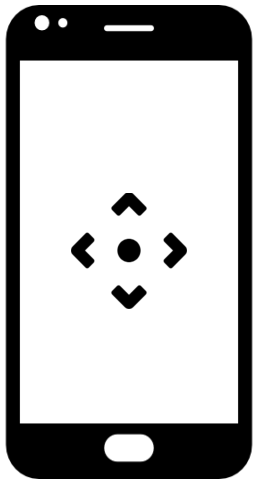
Voice Control

Follow User

Object Avoidance

How it looks

Our System



Smartphone
Mobile Application for the user

WheelChair

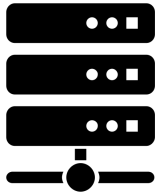
Laptop
Links all system nodes

Rangefinder
Mapping and Navigation

Kinect
Object Detection

IMU
Positional Data

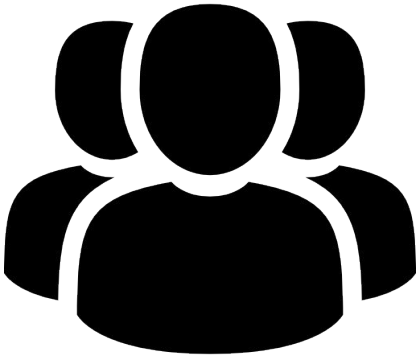
Dashboard
Management tool for admins



Server
User access and Map management

Dashboard

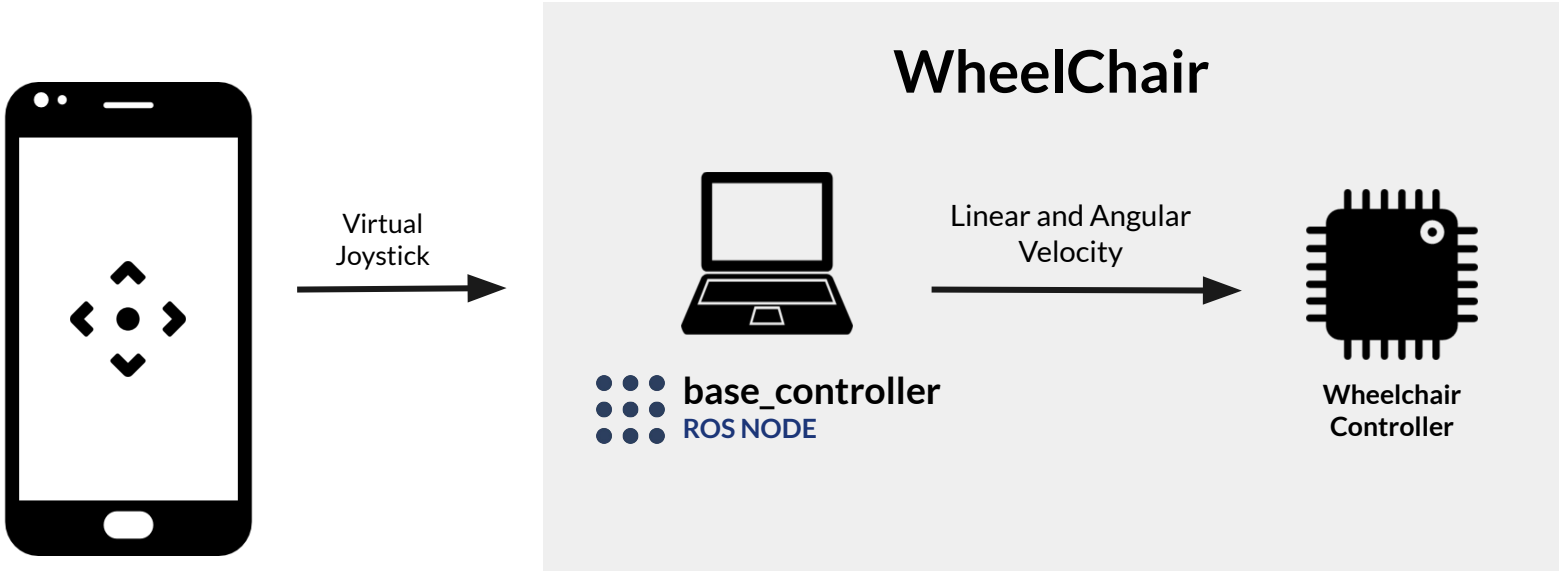
Wheelchairs
Create and manage Wheelchairs



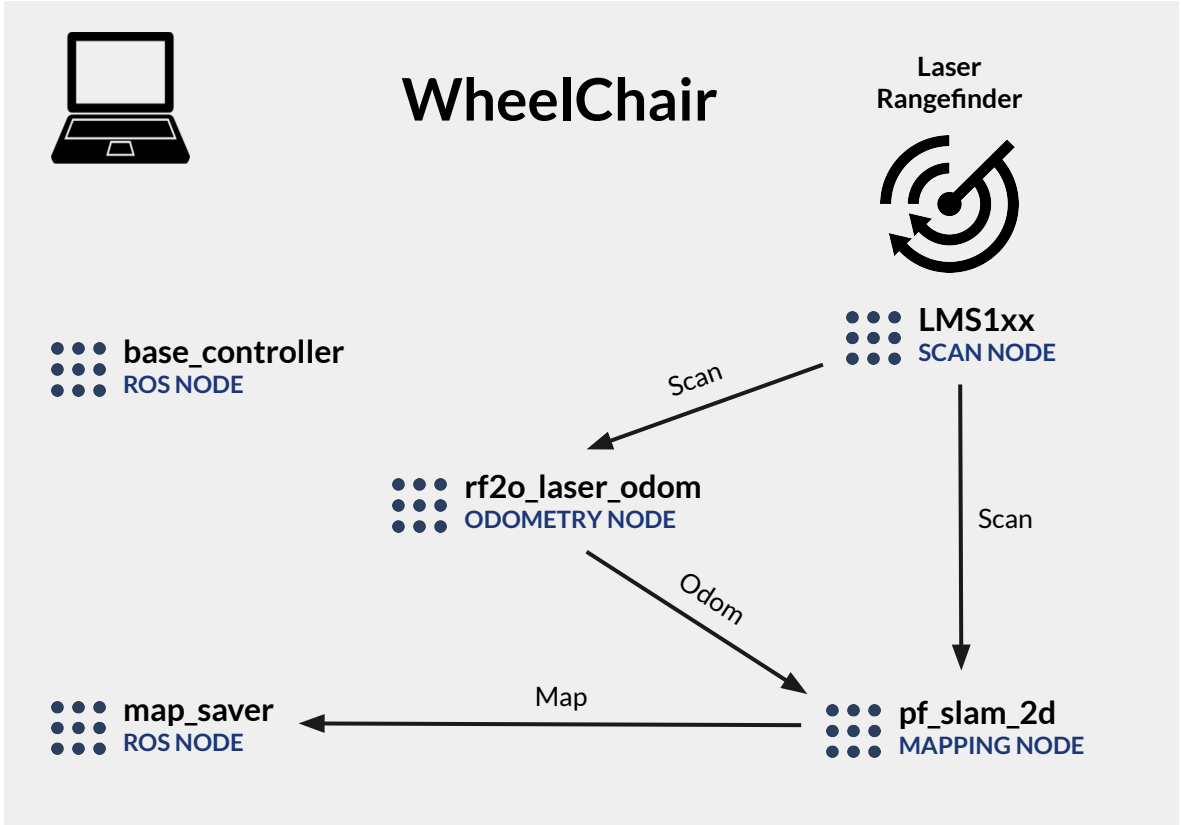
Users
Control user access and permissions

Maps
Manage all generated maps

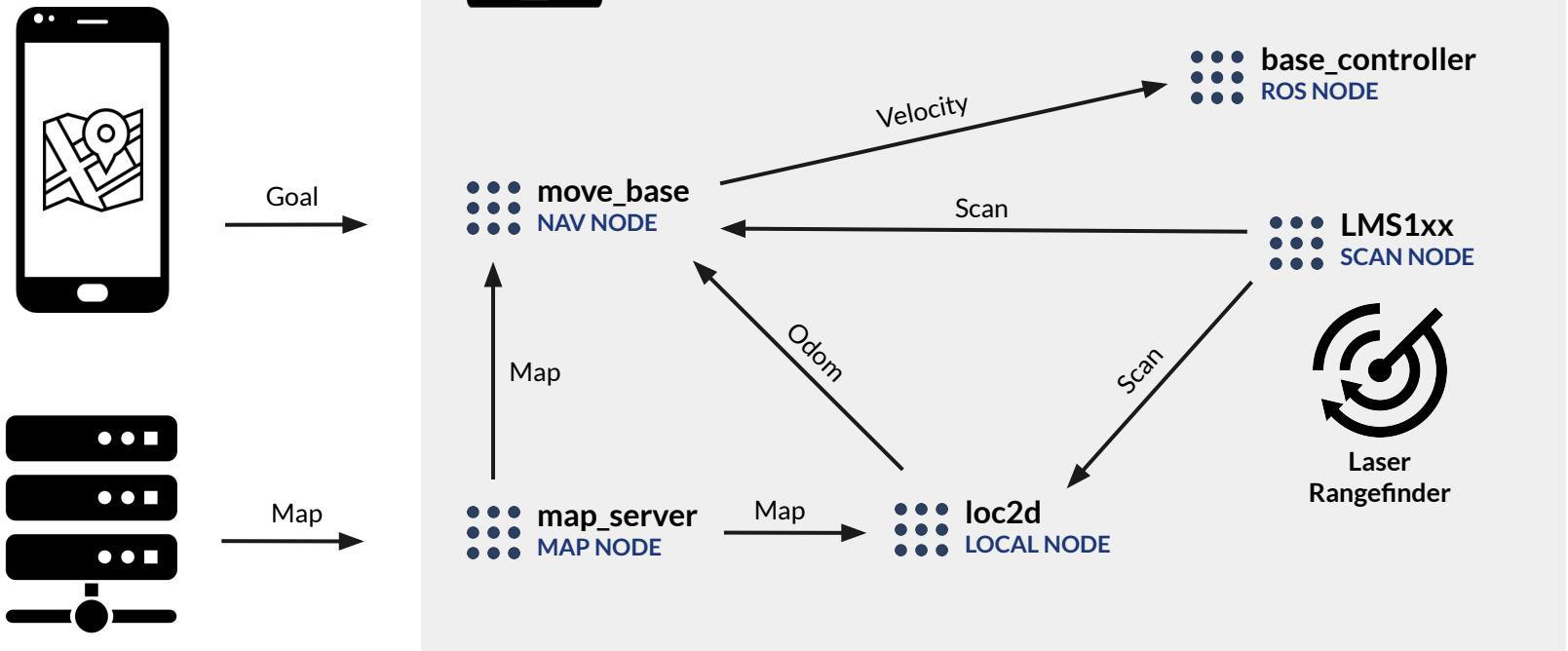
Manual Control



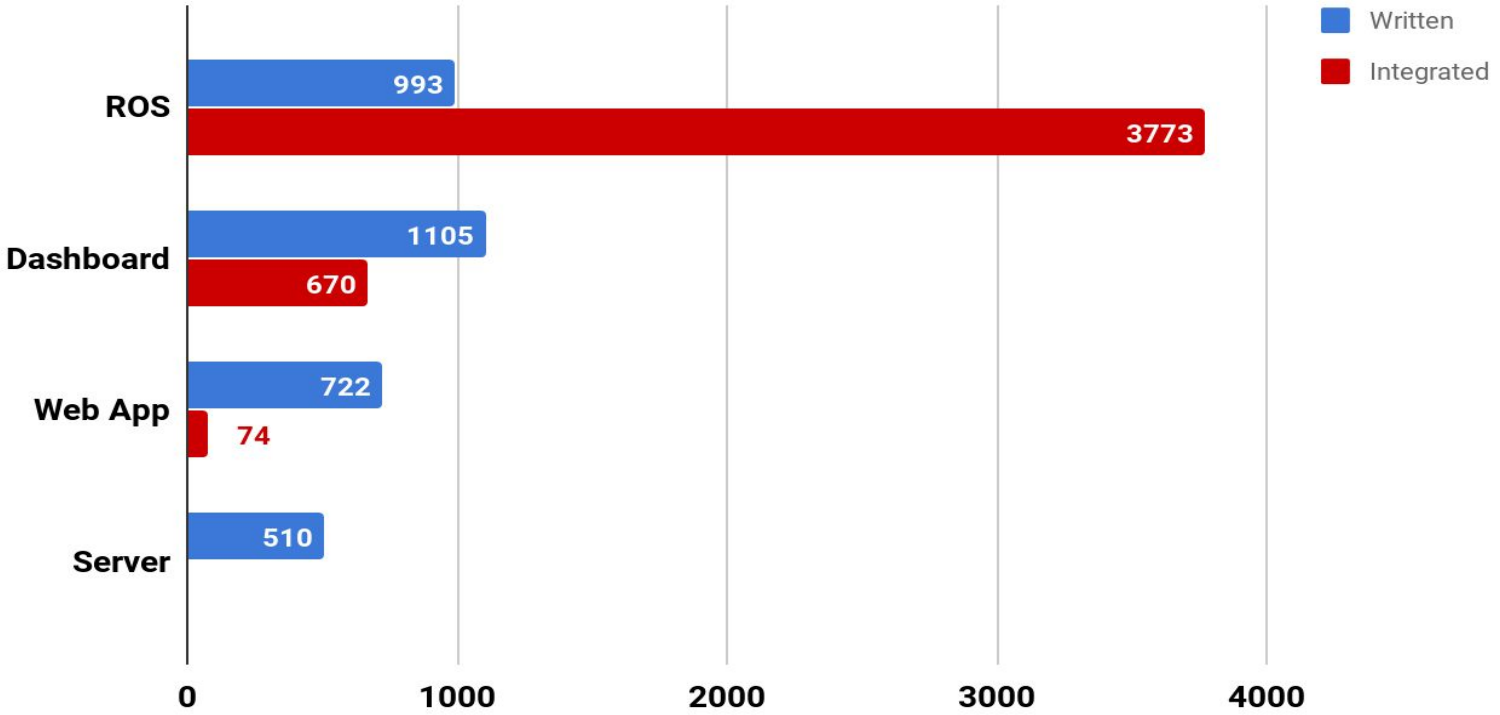
Mapping


WheelChair
Laser Rangefinder
Virtual Joystick
base_controller
ROS NODE
LMS1xx
SCAN NODE
Scan
rf2o_laser_odom
ODOMETRY NODE
Scan
Odom
Map
map_saver
ROS NODE
Map
pf_slam_2d
MAPPING NODE

Navigation


WheelChair
base_controller
ROS NODE
Velocity
move_base
NAV NODE
Scan
LMS1xx
SCAN NODE
Goal
Map
Odom
Scan
Laser
Rangefinder
Map
map_server
MAP NODE
Map
loc2d
LOCAL NODE

Lines Of Code



Real Scenario