



VILNIUS UNIVERSITY
FACULTY OF MATHEMATICS AND INFORMATICS
INSTITUTE OF COMPUTER SCIENCE
INFORMATION TECHNOLOGIES STUDY PROGRAM

Problem-Based Project

Technical specification

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1 Overview

1.1 Project overview

1.2 Context diagram

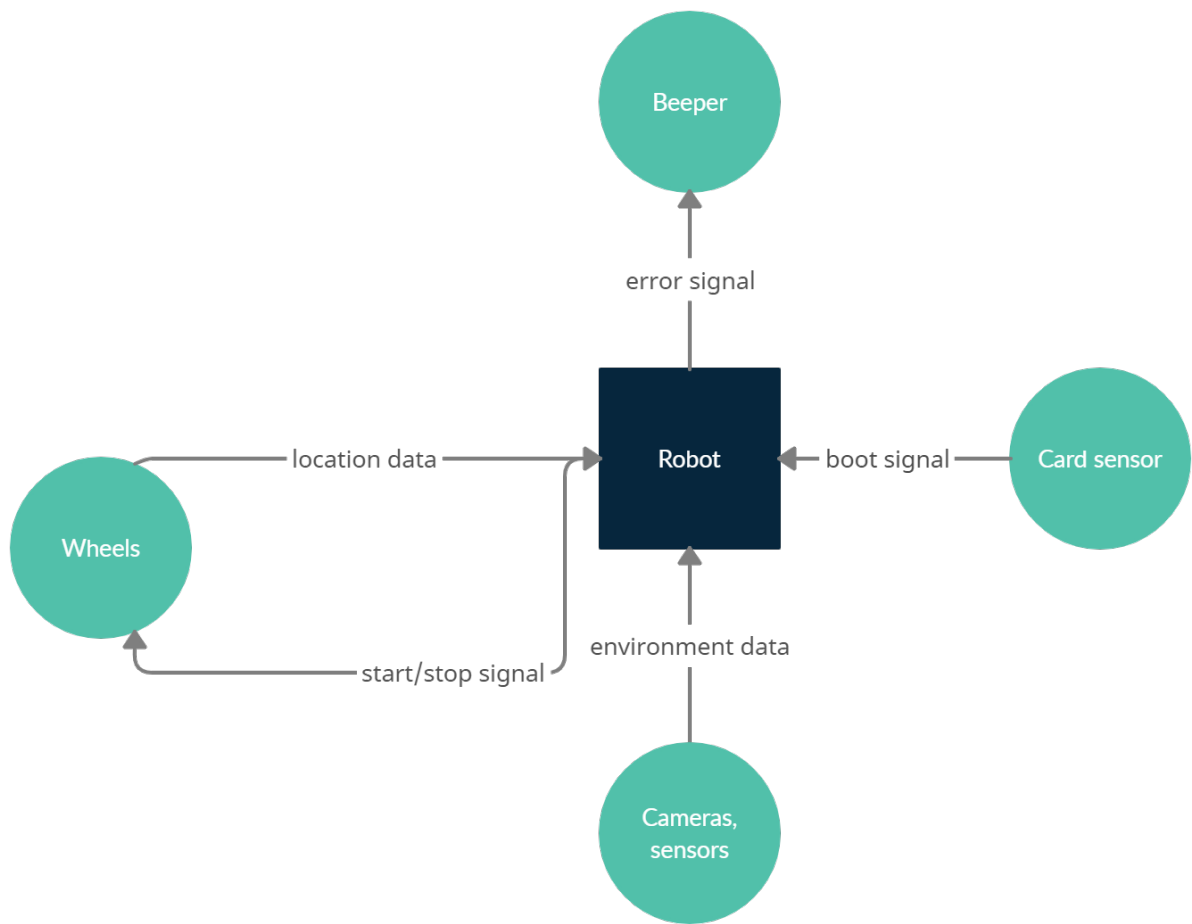


Figure 1. Context diagram

1.3 UML deployment diagram

2 Deliverable internals

2.1 Structural aspects

The main components of the robot are the raspberry pi, cameras and sensors, wheels, and the beeper. The cameras and sensors will be used to detect the robots surroundings, the wheels will move the robot, as well as transmit location data to the raspberry pi, and the beeper will be used to warn the user of errors.

2.2 Dynamic aspects

3 Testing

The robot is tested using two methods:

1. Testing will be done manually when the robot is turned on.
2. Testing will be done using simulations using Webots software.

4 Technologies and Tools

The following technologies will be used to build and test the robot, as well as maintain the required code:

- Linux OS
- Python
- OpenCV
- BASH
- Git
- Webots