

Title: Centralized multirobot system
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This thesis focuses on design and implementation of a centralized multi-robot system. A host computer (or cellphone) controls several tiny PocketBot2 mobile robots. These robots feature various sensors. They can perform line-following and they are equipped with a system for detecting obstacles and other robots. Although the PocketBot2 robots were designed and built within the frame of this thesis, the core of the thesis itself lies in the software. For the PocketBot2 hardware, an embedded control system was designed and implemented. It interfaces robot's sensors and carries out basic movement commands. Bluetooth technology is used for wireless data transfer between robots and the host. In the host, a multi-platform control library was implemented. It provides access to sensors of individual robots and controls their movement. The library ensures convenient interface for implementing centralized multi-robot algorithms.

Keywords: robot, library, PocketBot, Bluetooth, Java