



TableTanks: Interactive battlefield

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Motivation

Project Concept:

An interactive touch-screen table with QR code reading capabilities that can interact with objects on table



Development Environment

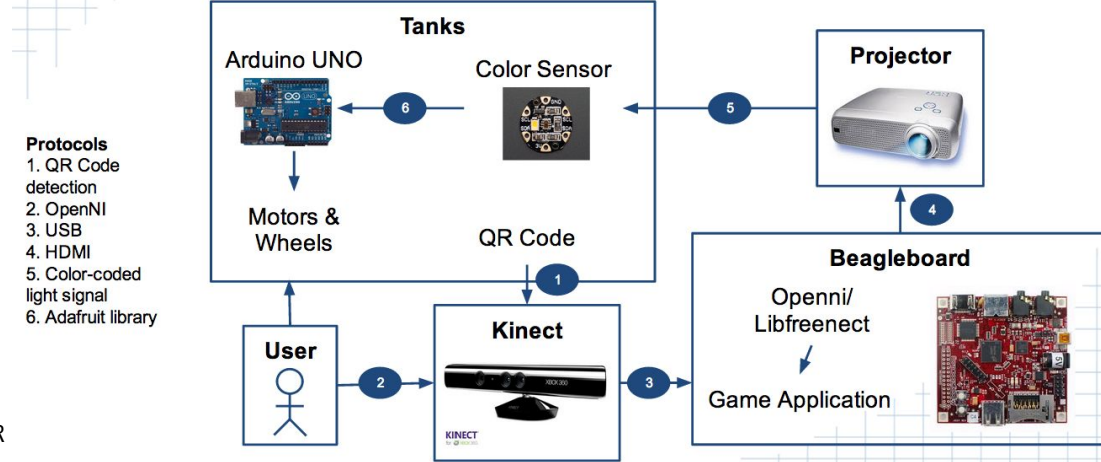
Hardware:

- BeagleBoard-xM - Processes information from Kinect and QR code detection
- Arduino Uno - Mounted on objects on table
- Projector - Used to project image onto glass table
- Kinect - Used to detect objects on the table
- Color Sensor - Used to detect location of moving vehicle
- Motors and Wheels - For moving objects on table

Software:

- Ubuntu 13.10
- OpenKinect (Libfreenect)
- ROS
- Arduino
- Processing

Architecture



Results

- System is able to successfully locate QR Code in 81.25% (13/16) of tests. System failure to locate the QR Code has been attributed to glare from the glass table.
- Light Sensor is able to detect change in light color with less than 1 second of delay.
- System is able to locate a QR Code with less than 1 second of delay.