Assign Final Project

Final Project

- Your project must use the Android platform
  - Quite a few teams from Spring term built on their Project #3 and added a hardware component to the project – not necessary but encouraged (after all this is an embedded system programming course)
- Your project must be at least as difficult as any of the projects or homework assignments
- You will work in your Project #3 teams of two or three unless you get permission to change
- Your project proposal must be approved by the instructor
  - Approval based on difficulty and whether I think you can complete it in the ~3 1/2 weeks you have to work on it
- You must demonstrate your project in class on an Android device…demonstrating on the emulator is not acceptable
- Your results must be visible and preferably interesting to the class (e.g. things that move, video, etc.)
  - You may use the document camera to show display, etc.

Timetable

- Teams formed this week
  - Please self-enroll in D2L
  - Your group must be assigned before you can submit a proposal
- Proposal submitted to D2L by10:00 PM on Sat, 10-Nov-2018
  - I will provide feedback to your Final Project Proposal dropbox
  - It would be to your advantage to beat this deadline - it is not unusual to negotiate demo commits before approval
- Progress report submitted to D2L by 10:00 PM on Sat, 01-Dec-2018
- In-class demos on **Thu**, 06-Dec-2018 from 8:00 AM – 9:50 AM in EB 103
- Final submission due to GitHub **Fri**, 07-Dec-2018 by 10:00 PM. No late submissions, please
  - **NEW:** Please upload a .zip file of your GitHub repository to your Final Project Deliverables dropbox on D2L, too. Doing this will make our grading/feedback a little more efficient

Project Proposal

The project proposal must include:

- Project name and team members
- Project description
  - What will your app do?
  - What Android capabilities will you use (ex: sensors, GeoLocation, web services, etc.)
  - What other hardware will you use (RPI, Robotic platform, etc.)
  - What tools (besides Android Studio) will you use?
- Design Approach
  - How do you plan to split the work?
  - How will you demonstrate success?
  - What are your options if you start running out of time?
- Milestones
  - Target dates to demonstrate that you're making acceptable progress towards completion

Grading

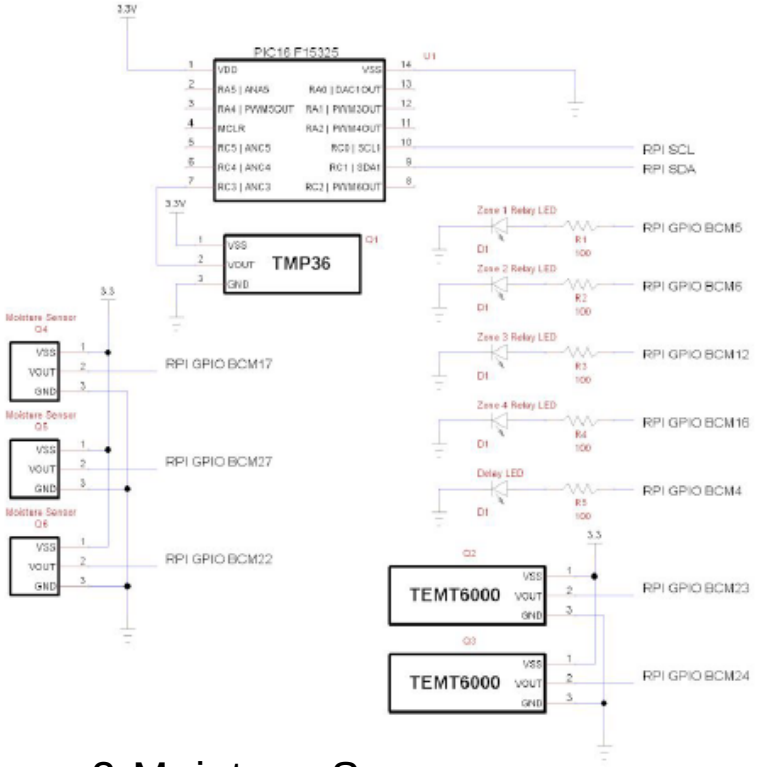
- Your demo grade will be based on successfully demonstrating what you committed to in the proposal
- You will be graded as a team: teams sink or float as a group
  - ...but you are encouraged to email confidential feedback on your partner(s) if you think his/her performance(s) helped/hindered your success
  - GitHub provides analytics that will help me to ascertain who was making the "big" contributions to the project
- **Points:**

Progress report:	15 pts
Demo:	40 pts
Design report:	20 pts
Code quality:	20 pts
Degree of difficulty:	5 pts
	100 pts
Extra credit:	up to 5pts

Grading (cont'd)

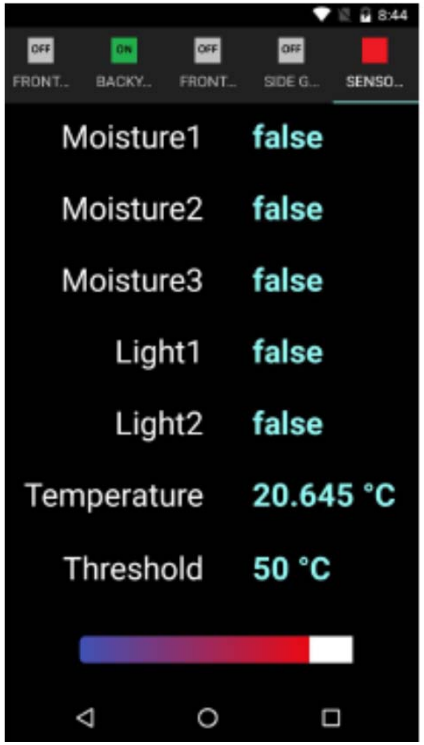
- **Wall of Fame:**
  - Overall best project(s) receives 3 extra points
    - "Overall" means it has to work well, it has to be documented clearly, it has to be implemented cleanly and it has to be presented well

Spring 2018 Wall of Fame Winner



Automatic Sprinkler System

John G., Robert C.



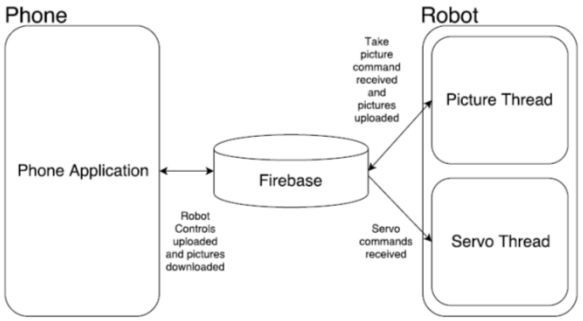
- 3 Moisture Sensors
- 2 Light Sensors
- 1 Temperature Sensor
- 4 Zone LEDs
- 1 Delay LED

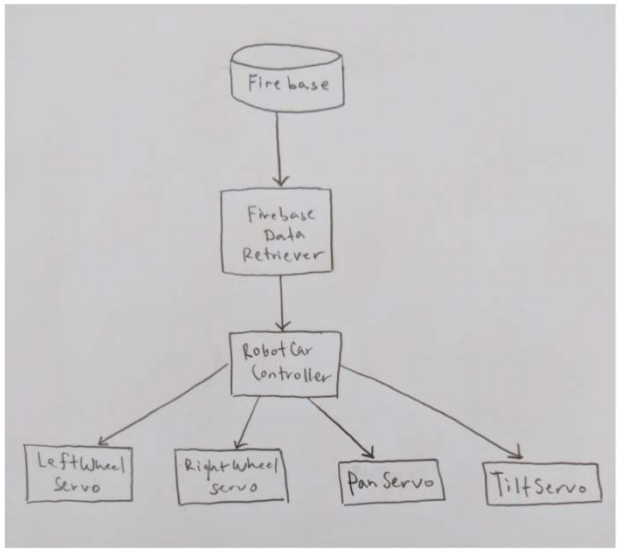
Portland State UNIVERSITY

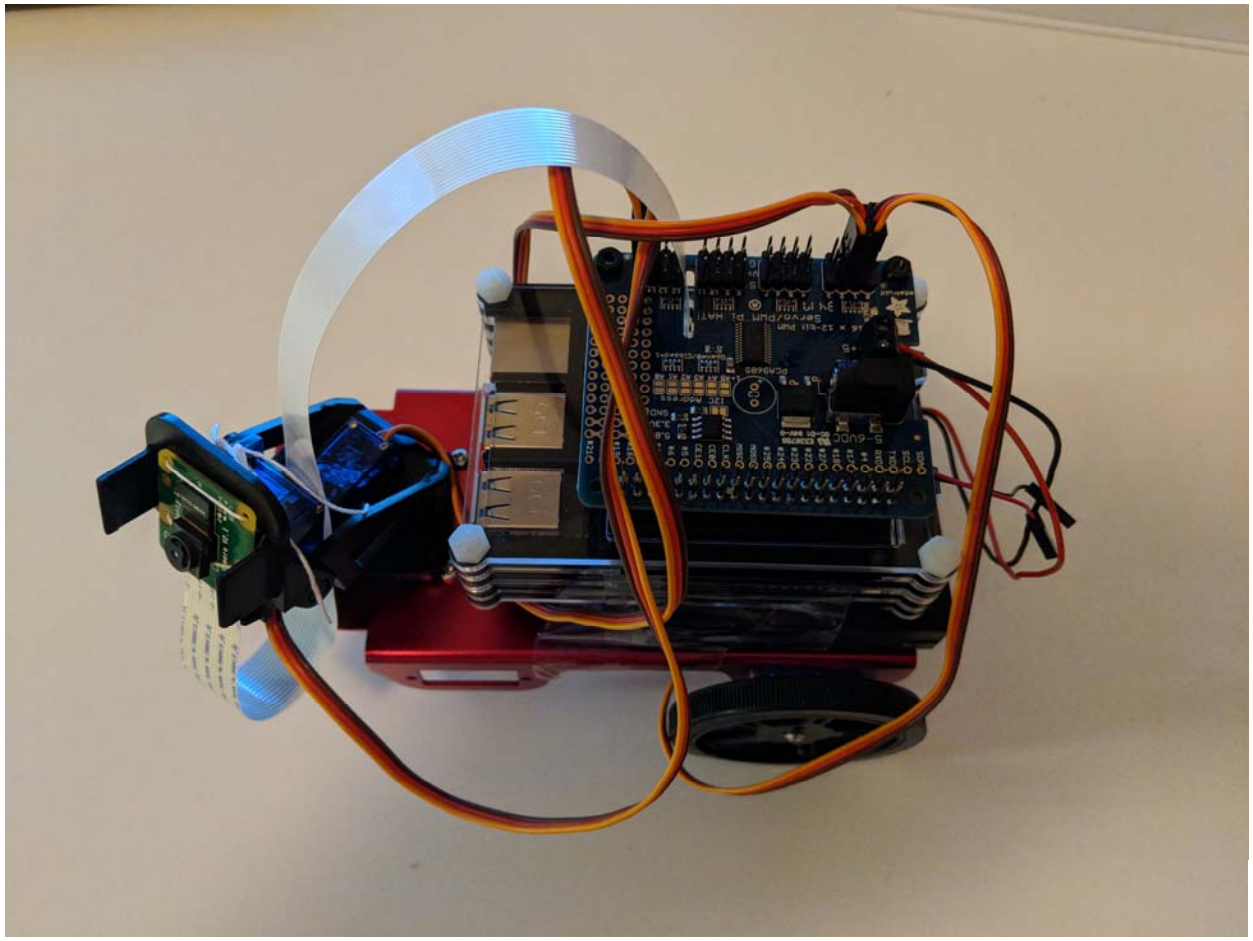
Fall 2017 Wall of Fame Winner

Mobile Camera Robot

Charles S., Brett C., Scott M.





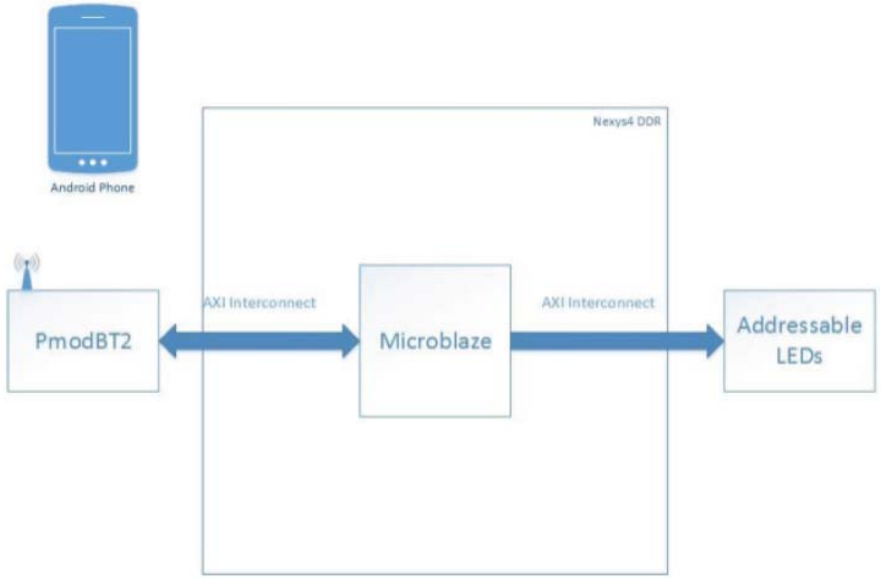


Android + Microblaze + Nexys4 DDR

NATAKU
- Fall 2016 -

Deven Bawale, Srivatsa Yogendra, Tejaswini Vibhute

"Nataktu is an Android app that listens to music via the Android device's microphone, connects to a Nexys4 DDR FPGA board via Bluetooth and sends appropriate RGB values to the board which are subsequently sent to a strip of addressable LEDs. The LEDs glow in response to the music being played considering factors such as amplitude and pitch of the music. The word 'Nataktu' is Sanskrit for 'dancing lights'."



Deliverables

- Your approved proposal
- Your written progress repot
- Design report:
  - Overview of your project
  - Design details, including a theory of operation, state transition diagrams, class diagrams or equivalent, etc.
  - Results (good and bad)
  - A description of how to set up and use your project/software.
  - Contributions of individual team members
  - No more than 10 pages please
- Source Code:
  - Your code should be liberally commented and use descriptive signal and/or variables names
- `.pdf` of your demo presentation
- (optional) Video(s) of your demo

Fall 2018 “Wall of Fame” Winner(s)

This space just waiting to be filled by....you