

SMART REFRIGERATOR DESIGN PROJECT

PROGRESS REPORT VI

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April 23, 2012

1 Updated Milestone Chart

Milestone	Scheduled Date	Assigned	Modified Date	Comments
BeagleBoard procured	February 10, 2012	SS	NA	Complete
Angstrom operating system running on board	February 24, 2012	DS	NA	Complete
Peripherals properly interfacing with board	March 02, 2012	DS	April 27, 2012	Touch control still not working for LCD display. Temperature sensor moved to its own task.
Basic mobile UI, suitable for debugging	March 09, 2012	BR	NA	Complete
Basic base station UI, suitable for debugging	March 09, 2012	SS	NA	Completed basic GUI functionality. Incorporating duplicate item support and databases.
Database I/O configured	March 16, 2012	DS	March 23, 2012	Complete. MySQL databases configured, can be accessed with Python application.
Testing and integration of temperature and humidity sensor	March 16, 2012	SS/DS	April 27, 2012	May not be able to interact with sensor using Beagleboard GPIO and level shifter. Have obtained a replacement I ² C temperature sensor from Dr. Mondragon.
Database and web server hosted by Beagleboard	March 16, 2012	DS	NA	Complete
Beagleboard touchscreen display procured	March 16, 2012	DS	NA	Complete

Milestone	Scheduled Date	Assigned	Modified Date	Comments
Mobile application integrated with web server	March 30, 2012	BR	April 20, 2012	Complete
User profiling and statistical analysis	March 30, 2012	SS	April 6, 2012	Complete
Shopping lists, item modification, basic settings	March 30, 2012	SS		Complete. Added context menus and hidden “administrator” panel.
Updated base station UI	April 6, 2012	SS		Complete, awaiting review by team or outside testers.
Updated mobile application	April 6, 2012	BR	April 20, 2012	Complete
Improved robustness of mobile interface	April 13, 2012	DS		Purpose of this task has become unclear. May remove.
Integration testing and system verification	April 13, 2012	BR	April 27, 2012	
Web interface development	April 20, 2012	SS		Complete. Does not look flashy but is effective and functional.
System testing and demo preparation	April 20, 2012	SS	April 27, 2012	

2 Current Milestones

Milestone	Scheduled Date	Assigned	Modified Date	Comments
Mobile application integrated with web server	March 30, 2012	BR	April 20, 2012	Complete
Updated mobile application	April 6, 2012	BR	April 20, 2012	Complete
Testing and integration of temperature and humidity sensor	March 16, 2012	DS	April 27, 2012	May not be able to interact with sensor using Beagleboard GPIO and level shifter. Have obtained a replacement I ² C temperature sensor from Dr. Mondragon.
Web interface development	April 20, 2012	SS		Complete. Does not look flashy but is effective and functional.

3 Next Milestones

Testing and integration of temperature and humidity sensor	March 16, 2012	DS	April 27, 2012	May not be able to interact with sensor using Beagleboard GPIO and level shifter. Have obtained a replacement I ² C temperature sensor from Dr. Mondragon.
Peripherals properly interfacing with board	March 02, 2012	DS	April 27, 2012	Touch control still not working for LCD display. Temperature sensor moved to its own task.
Integration testing and system verification	April 13, 2012	BR	April 27, 2012	
System testing and demo preparation	April 20, 2012	SS	April 27, 2012	

4 Status

- Server-side PHP has been added to allow the mobile interface to query against the Beagleboard's MySQL databases. Http Post Requests are sent to indicate desired query, PHP is used to access the databases and elements are returned as a JSON string.
- The mobile interface development is complete, though it still needs to be tested on real phone.

- Touchscreen interaction has still not been resolved, and most options appear to be exhausted. As a last resort, we could revert to the test image for the touchscreen and add back in all other modules; this is not a very desirable option.
- Temperature sensor can not be controlled by Beagleboard with code used on Arduino, since very strict timing increments must be provided. Instead, a replacement I²C temperature sensor has been procured from Dr. Mondragon.
- The refrigerator must be prepared for demo.

5 Gantt Chart

ID	Task Name	Start	Finish	Duration	Mar 2012				Apr 2012		
					3/4	3/11	3/18	3/25	4/1	4/8	4/15
1	Mobile UI	3/2/2012	4/6/2012	26 d							
2	Base Station UI	3/2/2012	4/6/2012	26 d							
3	Database I/O	3/2/2012	3/23/2012	16 d							
4	Web Server	3/9/2012	3/30/2012	16 d							
5	Mobile UI w/ Network Interface	3/9/2012	3/30/2012	16 d							
6	Prediction Systems	3/16/2012	3/30/2012	11 d							
7	Integration Testing	4/6/2012	4/16/2012	7 d							
8	System Testing	4/13/2012	4/20/2012	6 d							