Smart Fridge Kitchen Assistant

Project Plan

CSC 532: Software Engineering
Louisiana Tech University

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1 Introduction

The aim of this document is to provide information about the projected development of the *Smart Fridge: Kitchen Assistant and Inventory Management System*. It includes deliverables, schedules, dependencies, assumptions, estimates, project team, and change management.

2 Software Project Description

2.1 Original Product Description

Web Server Implementation facilitates platform independence and allows for multiple users.

Shopping List Management allows users to create a shopping list. Items in the refrigerator are automatically added to the shopping list when low.

Inventory Management allows users to keep track of the food in their refrigerator, and moves items from shopping list to inventory after food is purchased.

Recipe Suggestions provide recipes based off of food currently in the fridge and link to instructional videos from YouTube to assist with cooking.

2.2 Description of Requirements

Energy Saver will recommend an optimized temperature given the contents of the refrigerator. This can be interfaced with an automatic temperature control system or may be displayed to the user so that the user can set the temperature manually.

Waste Approximation will estimate the amount of money lost on purchasing and refrigerating spoiled food as well as the total mass of the spoiled food.

Generalized Inventory System will allow for the inclusion of several different types of inventories such as refrigerator, pantry, spice cabinet, and medicine cabinet.

Bulk Update System will parse receipts, obtain nutritional information about items, and add items directly to the appropriate generalized inventory.

User Interface Refinement will allow for the user to more easily add and subtract individual items from their inventories. The UI will also include information from the Waste Approximation and Energy Saver Modules.

The requirements listed above are assumed to be all requirements to be requested by the client.

3 Team Members

Name	Background
Ahmed Humayun	C, HTML, Python, Data Analysis
Zhen Li	Python, Raspberry Pi
Sai Sivva	EE, Front-End, Database
Joshua Wilson	Python, UNIX, OpenCL
Shu Yang	EE, Java SE, Networks

4 Responsibility Assignments

Name	Assignments
Ahmed	Personalized Health Plan
Li	UPC/Data Conversion via Nutritionix,
Sai	EE, Front-End, Database Manipulation
Josh	Project Management, Receipt Parsing
Shu	EE, Java SE, Networks

5 Deliverables

- Project Plan
- Requirements Document
- Design Document
- Test Plan
- Project Demo

6 Potential Difficulties

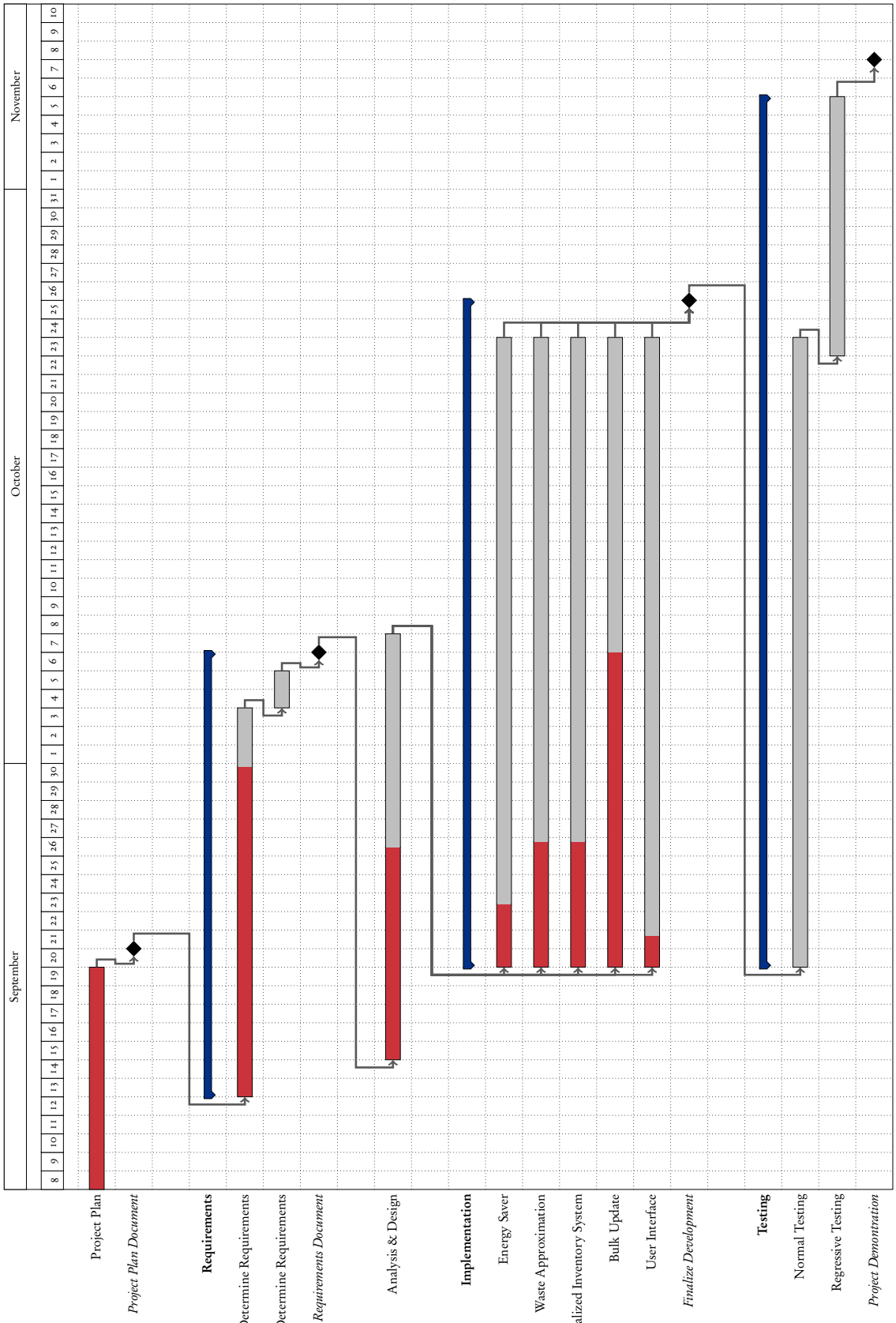
- JavaEE to Python interface
- Image Processing Power on Raspberry Pi is limited

7 Resources

- Apache HTTP Server
- Programming Languages
  - JavaEE
  - Python
  - SQL
- APIs
  - Nutritionix
  - ImageMagick
  - Tesseract

8 Project Timeline

On the next page is a Gantt chart detailing the schedule and current progress.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Project Plan
Project Plan Document
Requirements
Determine Requirements
Determine Requirements
Requirements Document
Analysis & Design
Implementation
Energy Saver
Waste Approximation
Generalized Inventory System
Bulk Update
User Interface
Finalize Development
Testing
Normal Testing
Regressive Testing
Project Demonstration

Revision History

Rev.#	Date	Nature of Revision	Version
1	09.14.2016	ORIGINAL VERSION	1.0