

Team OMEGA

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Software Project Management Plan – Version 1.1

CS 6387 Advanced Software Engineering Project

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1. Overview

Usually, houses include various devices and appliances (e.g., Sprinkler, Thermostat, etc.) that operate independently of one another. With the introduction of SHAS, these appliances and devices will communicate and collaborate in an effort to increase energy efficiency and improve the homeowner's quality of living. The SHAS system addresses the issues of power consumption, water conservation and providing safety to the homeowner.

2. Project Charter

In this project, our team will be designing and implementing SHAS (Smart Home Automation System), which is an intelligent monitoring and control system that monitors and controls various "smart" appliances and devices throughout an enabled house. The duration of the project is three months. The project consists of stakeholders like project sponsor, customer, development team, testing team and project manager. The Agile development model will be followed for developing this project.

3. Project Scope

In this project we propose to address the features affecting the water and energy consumption. We have identified the features that utilize electricity. By constantly monitoring these features with the SHAS helps to save water and electricity and improve the standard of living of the homeowner. The features addressed are:

- a. GUI
- b. Control Thermostat
- c. Control Sprinkler
- d. Generate Electric Usage pattern reports
- e. Generate Water Usage pattern reports

4. Project Management process

In this project, we are following Agile model, which is an iterative and incremental software development framework. The Agile team consists of stakeholders, development team, testing and QA team and project manager. The project will be broken into smaller parts and each part will be carried out in iterations. The duration of iteration is between one week and one month. Iteration plan meetings, iteration status meetings, feedback from the customer will be included as a part of the agile model.

5. Requirements change control process

Since we are planning to follow the Agile model, the changes in the requirements can be easily adapted in the later stages of the project. We will be planning the iterations with considering the requirement changes and make up with any contingencies.

6. Development/Maintenance Process

As we discussed above, we will be following the agile model for our project. The development team will be responsible for designing and coding the software. The testing team will carry out the testing and evaluation of the software. Both the development and testing will take place in multiple iterations.

7. Open issues and escalation process

We may be using open source tools like Bugzilla , Team Foundation Server etc., to track and escalate issues involved in the project.

8. Communication

We shall be meeting in Skype for the daily meetings, face to face for the sprint status meetings with the project team members and the project updates will be shared through email messages. We will meet the customer after every iteration.

9. Repository policies

We shall be using open source tool ‘github’ for maintaining the document and code revisions.

10. Risk Management

As we are following Agile model, the feedback will be collected after iterations and evaluations will be made on the progress of the project to maintain the pace and quality of the product. Based on the results of the evaluations, the buffer time and resources will be managed efficiently in order to achieve high quality results.

11. Life Cycle

The project will be carried out in 6 iterations (2 reviews per month). Each iteration will include Planning, Analysis, Design and implementation, Testing, validation and Release.

12. Work Breakdown Structure for SHAS

	Team	Progress
12.1 Planning		
12.1.1 Product Definition	Abu Hassan, Nawaz,Koushik, Gokulnath	100%
12.1.2 Project Proposal	Abu Hassan, Nawaz,Koushik, Gokulnath	75%
12.1.3 Customer Approval		
12.2 Definition		
12.2.1 Software Requirements Development		
12.2.1.1 Draft Software Requirements	Abu Hassan, Nawaz,Koushik, Gokulnath	100%
12.2.1.2 Final Software Requirements	Abu Hassan, Nawaz,Koushik, Gokulnath	100%
12.2.1.3 Software Requirements Approval		
12.2.2 Conceptual Design Development		
12.2.2.1 Conceptual Data Design	Abu Hassan, Nawaz,Koushik	100%
12.2.2.2 Design of Data base	Abu Hassan, koushik	
12.2.2.3 Conceptual Process Design	Abu Hassan	80%
12.2.3 High Level Design Development	Abu Hassan, Nawaz	
12.2.3.1 Architectural Design	Abu Hassan, Nawaz,Koushik, Gokulnath	
12.2.3.2 Design of the appliance components	Nawaz	
12.2.3.2.1 Design of Logic and Registration	Abu Hassan, koushik, Nawaz, Gokulnath	100%
12.2.3.2.2 Design of Home	Abu Hassan, koushik, Nawaz,	100%

	Gokulnath	
12.2.3.2.3 Design of Sprinkler	Abu Hassan, koushik, Nawaz, Gokulnath	100%
12.2.3.2.4 Design of Thermostat	Abu Hassan, koushik, Nawaz, Gokulnath	
12.2.3.2.5 Design of Reports	Abu Hassan, koushik, Nawaz, Gokulnath	
12.2.3.2.6 Design of Test Harness	Abu Hassan, koushik, Nawaz, Gokulnath	
12.2.3.2.7 Design of Lighting	Gokulnath, Koushik, Nawaz, Abu Hassan	100%
12.2.3.4 Design UML	Abu Hassan, koushik, Nawaz, Gokulnath	60%
12.2.3.5 System Design	Abu Hassan, koushik, Nawaz, Gokulnath	
12.2.3.6 Design Approval		
12.2.3.7 Address feedback	Abu Hassan, koushik, Nawaz, Gokulnath	
12.2.4 Resource Procurement		
12.2.4.1 Human Resources Procurement		100%
12.2.4.2 Hardware Procurement	Abu Hassan, koushik, Nawaz, Gokulnath	100%
12.2.4.3 Software Procurement	Abu Hassan, koushik, Nawaz, Gokulnath	100%
12.2.4.4 Communications setup (Skype)	Abu Hassan, koushik, Nawaz, Gokulnath	100%
12.3 Construction		
12.3.1 Detailed Design Development		
12.3.1.1 Data Design	Abu Hassan, koushik, Nawaz, Gokulnath	50%
12.3.1.2 Business Logic Design	Abu Hassan, koushik, Nawaz, Gokulnath	30%
12.3.1.3 User Interface Design	Abu Hassan, koushik, Nawaz, Gokulnath	90%
12.3.1.4 Internal Design Standards/feedback		
12.3.1.5 Design Approval		
12.3.2 High-Level Test Plan Development	Abu Hassan, koushik, Nawaz, Gokulnath	35%
12.3.3 System Components— Code, Unit Test		
12.3.3.1 Database Components		
12.3.3.1.1 Common Data layer	Abu Hassan, Nawaz, Koushik, Gokulnath	

12.3.3.2 Code/Logic Components		
12.3.3.2.1 User Registration and Login logic	Gokulnath	100%
12.3.3.2.2 Home Logic	Nawaz	100%
12.3.3.2.3 Sprinkler Logic	Abu Hassan	100%
12.3.3.2.4 Thermostat Logic	Koushik	
12.3.3.2.5 Reports (Water and Electricity) Logic	Abu Hassan, Nawaz, Koushik	
12.3.3.2.6 Test Harness Logic	Abu Hassan, Koushik	100%
12.3.3.2.7 Lighting Logic	Abu Hassan, Nawaz, Gokulnath	100%
12.3.3.3 Web GUI Interface Components		
12.3.3.3.1 User Registration and Login UI	Gokulnath, Nawaz	80%
12.3.3.3.2 Home UI	Nawaz	80%
12.3.3.3.3 Sprinkler UI	Abu Hassan	80%
12.3.3.3.4 Thermostat UI	Koushik	
12.3.3.3.5 Reports (Water and Electricity) UI	Abu Hassan, Nawaz, Koushik	
12.3.3.3.6 Test Harness UI	Abu Hassan, Nawaz, Koushik, Gokulnath	80%
12.3.3.3.7 Lighting UI	Gokulnath, Koushik	80%
12.3.4 System Installation (Configure)	Abu Hassan, Nawaz, Koushik, Gokulnath	90%
12.4 Testing		
12.4.1 Testing Execution		
12.4.2 System Test Plan		
12.4.3 System Test Cases		
12.4.4 System Test Results		
12.4.5 Acceptance Test Plan		
12.4.6 Acceptance Test Cases		
12.4.7 Acceptance Test Results		
12.4.8 Traceability Matrix		
12.4.9 Approved User Documentation		
12.4.10 Analyze Defects/Correct		
12.4.11 Production Readiness Verification		
12.5 Deployment		
12.5.1 Transition		
12.5.1.1 Support Personnel Training		
12.5.1.2 Support Procedures Documentation		

12.5.1.3 Software		
12.5.1.4 Hardware		
12.6 Project Management		
12.6.1 End User Support		
12.6.2 Maintenance		

13. Roles and Responsibility

Customer / Project Manager	Professor Dr.Mark Paulk
Lead	Nawaz
Requirements Engineering / Design	Abu Hassan, Nawaz, Koushik, Gokulnath
Development/QA team	Nawaz, Abu Hassan, Koushik, Gokulnath

14. Cost Estimates

To be decided with the customer.

15. Milestones and Schedule

No.	Task	Due Date	Resources	Progress	Project Manager	Estimated Duration (in hrs)
W1	Questions on Problem Statement	01/30/13	Nawaz, Koushik	100%	Professor Dr.Mark Paulk	8
W2	Draft of Project Management Plan v 0.0	01/30/13	Abu Hassan, Gokulnath	100%	Professor Dr.Mark Paulk	4
W3	Draft of Project Management Plan v 0.1	02/06/13	Abu Hassan, Gokulnath	100%	Professor Dr.Mark Paulk	8
W4	Software requirement Specification v 0.0	02/06/13	Nawaz, Koushik	100%	Professor Dr.Mark Paulk	10

W5	Software	02/13/2013	Abu,	100%	Professor	15
	Requirement		Gokulnath		Dr.Mark	
	Specification		Nawaz		Paulk	
	v.1.0		Koushik			
W6	Draft of	02/13/2013	Abu,	100%	Professor	10
	Project		Gokulnath		Dr.Mark	
	Management				Paulk	
	Plan v1.0					
W7	Software	03/27/2013	Abu,	100%	Professor	8
	Requirement		Koushik		Dr.Mark	
	Specification				Paulk	
	v.1.1					
W8	Draft of	3/27/2013	Nawaz	100%	Professor	8
	Project		Koushik		Dr.Mark	
	Management				Paulk	
	Plan v1.1					

16. Work Break Down Chart

Iteration	Work break down											Hours
Iteration 1												
6-Feb	Planning		Architec ture									22
13-Feb		Propos al	Architec ture	Design								22
Iteration 2												
20-Feb	Login,us er registrati on	Home			DB				Test			22
27-Feb	Login,us er registrati on	Home	Sprinkle r	Power outlet	DB				Test			22
Iteration 3												

6-Mar		Home	Sprinkler	Power outlet	DB				Test	Fix issues		22
13-Mar		Home	Sprinkler	Power outlet	DB				Test	Fix issues		22
Iteration 4												
20-Mar			Sprinkler		DB	Thermostat	Reports	Test Harness	Test	Fix issues		22
27-Mar					DB	Thermostat	Reports	Test Harness	Test	Fix customer issues		22
Iteration 5												
3-Apr						Thermostat	Reports	Test Harness	Test	Fix issues		22
10-Apr							Reports	Test Harness	Test	Fix issues		22
Iteration 6												
17-Apr								Test Harness	Test	Fix issues		22
24-Apr								Test Harness	Test	Fix issues		22
Iteration 7												
1-May										Fix issues	Postmortem	22
8-May											Final	
Total												286