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| *CometBites* |
| **Project Plan** |
| **SE 6387 Advanced Software Engineering Project**  **R.Z. Wenkstern**    ***Date*** |

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| **Group *CometBites*** |
| **Ronaldo Goncalves Junior**  **rxp152830** |
| **Twinkle Sharma**  **txs151730** |
| **Keerthi Santhalingam**  **kxs142830** |
| **Ramakrishnan Sathyavageeswaran**  **rxs142530** |

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Description** | **Authors** |
| 0.1 | 9/15/16 | Completed initial draft | Ram, Ronaldo |
| 0.2 | 9/20/16 | Added Work Plan – Team Sprint Activities | Ram |

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# 1. 1. Overview

Students have a routine that depends on their institution’s schedule, which affects most activities on campus. That is also true when it comes to eating. In the particular case of those that attend the University of Texas at Dallas (UTD), huge lines must be faced in order to eat during peak hours (between 11a.m and 1p.m). Encountering this reality, the students are left with limited options. They must wait a certain period of time in order to have a meal, or try to come back later. Unfortunately, for both students and food establishments, there is also the option to give up.

This document describes the planning involved for this project. This section describes the overview aspects of the project. The next section describes the organization, followed by the managerial process plan and the technical process plan. Subsequently, the last section shows other process planning, which represent the supporting aspects of the project.

## Purpose, scope and objectives

Our concept is a solution focused to overcome one of the major issues faced by the students of UTD every day and to upgrade the existing system to make their lives easier. The system needs to be revisited and rechecked considering the amount of growing lines at each food joint during the peak hours in our comet cafeteria. This is a game-changer constructed to overcome the long queues during the hungry times. The customer uses the mobile application to place order, check the wait time, and other features provided by the product. Once an order is placed, the software system sends the information to the kitchen for preparation. Later, when the order is ready, the kitchen updates the status of the order and sends the food for pickup. Once the update takes place, the customer gets notified and can pick up his food from the counter.

## 1.2 Assumptions and constraints

For our project we consider several assumptions and constraints which were taken into account.

### 1.2.1 Assumptions

* Team members are expected to have expertise in software development.
* Team members are expected to know the agile methodology.
* Project members will allocate enough time according to projected schedule in order to complete allocated tasks and objectives before the deadlines.
* UTD Dining Service will respond and interact with team in a timely manner (within 5 business days).

### 1.2.2 Dependencies

* Team member’s availability due to multiple simultaneous projects.
* Each sprint depends directly on the successful completion of the previous sprints.
* Stakeholders are available for project review.
* Effective face-to-face communication within the team.

### 1.2.3 Constraints

* The project must be finished on or before December 2nd.
* UTD Dining Service business decisions and regulations.
* UTD Dining Service restricted budget allocation and policies on hardware acquisition.

## 1.3 Project deliverables

Project deliverables are as follows (subject to changes):

* Deliverable 1 (Due in: 9/06/2016)
  + Executive Summary
  + Feasibility Analysis
  + Vision Document
* Deliverable 2 (Due in: 9/16/2016)
  + Project Plan
  + Requirements Analysis: UC Diagrams
  + Project Status Report
* Deliverable 3 (Due in: 10/16/2016)
  + Presentation: Use Case Diagram, SSD, Domain Model
  + Updated deliverables
  + Requirements Analysis Document: UCDs, UC Prioritization, UC1 Fully Dressed, UC1 SSD, Operational Contracts (for the most important operations)
  + Supplementary Specification
  + Project Status Report
* Deliverable 4 (Due in: 10/20/2016)
  + Updated deliverables
  + System High Level Architecture
  + UI Design (sketches)
  + DB Design (tables)
  + Project Status Report
* Deliverable 5.1 (Due in: 10/27/2016)
  + Presentation: Demo (UC1)
  + Updated deliverables
  + System Detailed Design Document
  + UC1 initial Implementation
  + Project Status Report.
* Deliverable 5.2 (Due in: 11/3/2016)
  + Presentation: Demo (UC1+extensions)
  + Updated deliverables
  + UC1 + extensions Implementation
  + Project Status Report
* Deliverable 6 (Due in: TBA)
  + Presentation: UC2 Analysis and Design
  + Updated deliverables
  + Project Status Report
* Deliverable 7 (Due in: TBA)
  + Presentation: Demo (UC2)
  + Updated deliverables
  + Project Status Report.
* Final Deliverable (Due in: 12/2/2016)
  + Presentation: Live Demo + Video
  + Updated deliverables
  + Complete Code
  + Project Status Report.

## 1.4 Schedule and budget summary

TBD.

# 2. Project Organization

## 2.1. Roles and Responsibilities

# 3. Managerial process plan

## 3.1 Start-up plan

### 3.1.1 Estimation plan

TBD

### 3.1.2 Staffing plan

The table below presents the cost of the human resources involved in the project for its entire duration (13 weeks).

|  |  |  |  |
| --- | --- | --- | --- |
| Roles | Effort (in hours/week) | Pay (per week) | Total |
| Software Engineer | 20 | 800 (40/hour) | $10,400 |
| Developer | 20 | 800 (40/hour) | $10,400 |
| Project Manager | 15 | 675 (45/hour) | $8,775 |
| Test Analyst | 20 | 600 (30/hour) | $7,800 |
| Estimated total |  |  | $37,375 |

### 3.1.3 Resource acquisition plan

TBD

## 3.2 Work plan

### 3.2.1 Work activities

The Work activities are done in Sprint (iterative fashion). Below are the detailed work activities performed in each iteration by the team.

|  |  |
| --- | --- |
| Sprint 1 | Team Member |
| 1. Executive Summary | Keerthi |
| 2. Draft Feasibility report | Twinkle |
| 3. Vision Document | Ronaldo |
| 4. Dev Ops | Ram |
| 5. Github Setup | Ram |

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| Sprint 2 | Team Member |
| 1. Executive Summary | Keerthi |
| 2. Feasibility report Complete | Twinkle, Ronaldo |
| 3. Vision Document | Ronaldo,Ram |
| 4. Project Plan –Draft | Ronaldo,Ram |
| 5.Department Meeting | Ronaldo |
| 6.Feature Discussion | All |

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| Sprint 3 | Team Member |
| 1.Use Case Diagram | Ronaldo |
| 2.Use Case Prioritization | All |
| 3.Update Project Plan | Ram |
| 4.Textual Description | Keerthi |
| 5.SSD | Ronaldo,Twinkle,Keethi |
| 6.UC1 Fully Dressed | Ronaldo |

### 3.2.2 Schedule/Resource/Budget allocation

Final costs and pricing for the software system will be dictated by the type and the number of devices to be used since the application is going to run on the user’s smartphone. A single full kiosk price goes from $100.00 up to $10,000.00 or more. The following table shows the pricing list for a single full kiosk [6].

|  |  |  |
| --- | --- | --- |
| Item | Description | Average price |
| Full Kiosk | Touchscreen, CPU, Enclosure (only) | $3,440 |
| Touchscreen | 17" lcd | $1,180 |
| Touchscreen | **15" lcd** | **$872** |
| Thermal Printer | Across all models | $630 |
| CPU | **With OS** | **$736** |
| Keyboard | Industrial | $334 |
| Software | **License** | **$400** |
| Software | Management (36 months) | $1,800 |
| Technical support | 24/7 (36 months) | $3,600 |
| Installation | **Full** | **$1,000** |
| Enclosure (only) | **Across all materials** | **$1,330** |
| UPS | Across all models | $114 |
| Card Reader | Across all models | $113 |
| Bill Validator | Across all models | $368 |
| Fully Loaded Kiosk | \* | $13,383 |

A complete but economic setup (items in bold) might reduce the price of a single kiosk to $4,338. Alternatives that include only the standing (that supports a tablet), a minimal setup, can reduce the price even further to an average of $100. Although economically attractive, this minimal setup is prone to cease functioning in a short term, since the device is going to be used by a large number of users in a daily basis.

For the prototype, firstly, smartphones will be used to run the application. Secondly, a tablet will be used. It can simulate the usage of a kiosk closely, and the effort required to adapt the software system to run on a kiosk afterwards is considerably low. With economics options of $25 to $100, the tablet is technically, economically, and in terms of usability the best option for the device prototype.

## 3.3 Risk management plan

All the risks have been classified based on the following types

* People
* Technology
* Product
* Security
* Market

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| **Risk** | **Type** | **Risk level** | **Impact on Schedule** | **Risk Mitigation Plan** |
| Project scope  Misunderstanding | **People** | Medium | * Delays completion of tasks on time * Rework of documents which in turn increase the time for implementation * Documents end up being faulty | * Conduct brainstorming sessions to identify ideas * Conduct scrum meetings to pick tasks from the backlog |
| Changes in Schedule/deadlines | **Product** | Medium | * Since we use scrum methodology change in schedule impacts on the velocity of the team * It reduces the time for each sprint with an increase in product backlog | * Have sufficient buffer time to accommodate changes in schedules |
| Team member Technical Expertise | **Technology** | low | * Affects velocity of each sprint resulting in late submission of the required documents | * Cross train within team so that all team members are on the same page |
| Team member’s Commitment to Project | **People** | High | * Team work is required in the project to complete all backlogs | * Motivate the team * Work with a common goal |
| Quality of the Product | **Product** | **High** | * Ensuring quality of the documents requires user participation which involves the timeline of the user which would greatly impact the schedule | * Iterative development helps in obtaining user feedback after each sprint ensuring high quality of the end product |
| Data Loss | **Security** | **High** | * The application consists of user personal information which pose as a high risk to security * Ensuring security will have a huge impact on the schedule | * Perform regular reviews * Test driven development |
| Changing Requirement | **Product** | **High** | * Change in requirements change the scope of the projects increasing the timelines thus affecting the deadline | * Agile methodology aides in accepting changing requirements * Scope creep is analyzed prior to the start of the project |

# 4. Technical process plans

## 4.1 Process model

Entire project will be following “Scrum”, an agile methodology as a method to complete the project work.

## 4.2 Methods, tools and techniques

The tools and applications used by the team for this project:

1. Document Development: MS Office Word, MS Office Powerpoint
2. Software Project Management: MS Project
3. Software Configuration Management: Github
4. Document Versioning: Github
5. Requirement Management Tool: IBM Rational DOORS
6. Software Design Tool: IBM Rhapsody, Adobe Photoshop
7. Testing Tool: Maveryx(Functional Testing), Junit(Unit testing)
8. Email: official communication medium to interact among team members
9. Microsoft Visio: UML creation
10. Gliffy: Domain Model Diagram
11. Dia: Tool to draw Structured Diagram
12. Prototype Development: Justinmind Tool, Balsamiq mockup 3
13. Meet up/Conversation: Library Study room/ Open lab, Google Hangouts, Whatsapp Group

## 4.3 Infrastructure plan

TBD

## 4.4 Product acceptance plan

TBD

# 5. Supporting process plans

TBD

## 5.1 Configuration management plan

For the Configuration management our team use GitHub to maintain both documents and the software application

## 5.2 Test plan

TBD

## 5.3 Documentation plan

TBD

## 5.4 Quality assurance plan

TBD

# Appendix A: Glossary

|  |  |
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| **Term** | **Definition** |
|  |  |
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# Appendix B: References