BusPlanner	Version: 1.3
Project Plan	Date: 02-11-2016

Distributed Software Development: BusPlanner Project Plan

Revision History

Date	Version	Description	Author
02-11-2016	1.0	Initial draft	Team
04-11-2016	1.1	Update in requirements	Team
08-12-2016	1.2	Update in team roles	Team
04-01-2017	1.3	Changes in special characters	I. Agosti

Contents

1 INTRODUCTION

1.1 Purpose of this document

The purpose of this document is to provide the project plan, project vision and team organization of the BusPlanner project.

1.2 Document organization

The document is organized as follows:

- Section 1, Introduction describes the content of this project plan document.

- Section 2, Background and Objectives describes the identified problem, goals of the project and high level requirements.

- Section 3, Project Organization describes how the project members are organized and the tools used for development and collaboration.

- Section 4, Development process describes how the scrum process is planned for our development activities.

- Section 5, Deliverables describes the list of deliverables to be delivered as part of this project.

- Section 6, Project plan describes the time plan scheduled for this project.

- Section 7, Project risk describes the potential risks identified in advance that might occur in the project and the mitigations planned to avoid/solve such risks.

1.3 Intended audience

The intended audience of this document are:

- Development team, as a guidance during the development activities and for the team to ensure that they have the same level of understanding on the project vision.

- Stakeholders, as an information regarding the plan and scope of the project.

1.4 Scope

This document will provide an overview about our project, required actions to be done and also the development process which we follow. This document will serve as a foundation for creating the document containing requirements analysis and design.

1.5 Definitions and Acronyms

1.5.1 Definitions

Keyword	Definitions
User	A person who requests for bus by being from bus stop.
Fleet Manager	Who owns the buses. He/she wants to know the utilization of buses and scheduling of buses.
User Request	Information generated with timestamps for the scheduling purpose.
Algorithm	A method used to enhance the scheduling process which is static as well as dynamic.
Sprint	A repeatable work cycle which is also known as iteration.

1.5.2 Acronyms and abbreviations

Acronym/abbreviation	Definitions
UI	User Interface
GUI	Graphical User Interface
MDH	Mälardalens Högskola, Västerås, Sweden
POLIMI	Politecnico di Milano, Milan, Italy
QA	Quality Assurance
DSD	Distributed Software Development

2 BACKGROUND AND OBJECTIVES

2.1 Background

Johannesburg has a complex bus system which is quite different from what is used elsewhere. There exist a gap of effectiveness and perfect schedule time. Technology has not yet fully revolutionized the process of scheduling as most of the processes are done by manual work. These are the main factors that have created a problem when users wanted to schedule their everyday trips.

A lot of waiting time, missed and late buses seem to be a normal day routine. Still, finding the perfect scheduling algorithm that will ease the transportation is yet a big step to be achieved. A lot of factors, such as the number of passengers that want to use a bus, the alternative routes, etc, are to be considered in this process.

2.2 Project goal

In order to solve the above mentioned problems, it was requested the creation of an algorithm that will help in the bus planning process. It will increase the process' efficiency and reduce the time needed to do a scheduling. The users waiting time should be dropped from hours to minutes.

2.3 Requirements

- The fleet manager should map the user requests with the available buses.

- The system should be mobile responsive.

- The users can generate the requests from a bus stop using the mobile application.

- The users can visualize the buses location in the city.

- The users waiting time must be minimum.

- Bus drivers should be notified for upcoming and pending user requests.

- Bus drivers can visualize where the requests come from.

- The buses are of two different sizes, each with a maximum number of persons.

- The buses should not leave the depot without passengers.

3 ORGANIZATION

3.1 Project group

Our team working on BusPlanner is composed of 7 members located in 2 universities as follows:

1. Team members located in MDH Sweden:

   - Albi Dode
   - Huy Hoang Nguyen
   - Muhammad Ejaz Khan
   - Sharvathul Hasan Ameerjan

2. Team members located in POLIMI Italy:

   - Andrea Colombo
   - Isabella Agosti
   - Stefano Antonino Badalucco

More information on the members can be found at:
http://www.fer.unizg.hr/rasip/dsd/projects/busplanner

3.2 Roles

In our development process we will use SCRUM. The scrum roles are as follows:

- Product owner - Isabella Agosti
- Scrum master:
  - Albi Dode (from the beginning to 01-12-2016).
  - Stefano Antonino Badalucco (from 01-12-2016).

Every team member will contribute equally in the coding and documentation process.

3.3 Customer

The customer is Aneta Vulgarakis Feljan from Ericsson.

3.4 Supervisor

The team will have two supervisors for the project:

1. Abhilash Thekkilakattil - From MDH

2. Elisabetta Di Nitto - From Polimi

3.5 Communication

The communication between the team members is done every day, mainly using WhatsApp. This was thought to be the fastest way since the team members are in different countries.

For documentation purposes and when new updates are made at the code or documentation, Google Drive comes in help. The audio/video calls with the customer and supervisors are done using Skype.

Each member keeps trace of the working hours and discussions done in the group and daily SCRUM meetings.

3.6 Tools

Skype - Mostly used for communicating with the customer or supervisors and also between the team members.
GitHub - Used for code sharing, version control.
WhatsApp - Used for instant messaging.
Google Drive - Used for documents.

4   DEVELOPMENT PROCESS

For this project we were suggested to use SCRUM methodology. It is a framework which has customer and communication as its foundation roots. The development process is done in iterations known as Sprints every 2 weeks.

4.1   Sprint Planning

We, as a team, decided that sprints will be done in a basis of 2 weeks. During these Sprints, the activities for the coming days will be discussed and there will be an estimation of the tasks, along with several meetings with all the team and scrum coaches.

4.2   Sprint Review

Reviewing the work done so far which will help the team for doing a retrospective. All the non finished work and the high priority works will be scheduled for the next Sprint.

4.3   Sprint Retrospective

A retrospective helps in the development process and it is done after the Sprint Review. This retrospective is needed as it helps in further improvements for the next Sprint.

4.4   Daily Scrum meeting

Basically it is a short meeting where each team member needs to update his/her status on the project. What has been done and what is going to be done. Also, to be pointed the role of the Scrum Master in this meeting as it is his/her job to help the team progress in the process.

5 DELIVERABLES

- Project Vision presentation: Short introduction on the project.

- Project Plan document: Details on how the project will be done, team organization.

- Project Requirements and Architecture: Description of what the project can do.

- Project Design document: Description of the architecture and technologies used.

- Alpha prototype: First release of the product. Not all functionalities may work.

- Beta prototype: Better version than alpha prototype.

- Testing report: Tests to be done in order to be as close to the requirements of the client.

- Final Product: The product is in its final version.

6 PROJECT PLAN

6.1 Time schedule

The project schedule is a detailed plan of major project phases, milestones, activities, tasks, and the planned start and end date for each task.

PRESENTATION	DATE
Project vision and Project Plan	2016-10-25
Requirement Design, revised Project Plan	2016-11-08
Status Report	2016-11-15
Milestone - Alpha prototype	2016-11-29
Milestone - Beta prototype	2016-12-13
Final project presentation	2017-01-10

7 PROJECT RISKS

Nr	Description	Mitigation	Risk level
1	Lack of communication within the team	Check and use the communication tools daily.	Medium
2	Low experience with the technology	Go through the tutorials. Help each other.	High
3	Requirements not well understood	Communicate with the supervisors, customer and get it clarified.	High
4	Team members are not available	Plan well in advance and have back up plan.	High
5	Code not well integrated	Debug and fix it during integration.	Medium