Fontys University of Applied Sciences

Eindhoven, The Netherlands

Airport Baggage Simulation

Project Plan



ProCP Class

Team members: Supervisor:

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Version 1.0

10.02.2019

# Version History

The following table provides information about the development of the Project Plan, including the main changes in the Project Plan (adding and editing information) and the dates for the approval of this information:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID &**  **Version #** | **Prepared by** | **Revision Date** | **Approved by** | **Approval Date** | **Reason** |
| 1.0 | The team | 11.02.2019 | Mikaeil Shaghelani | - | Project Plan draft |

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## Formal Client

Client name: Mr. Mikaeil Shaghelani

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## Team

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## Current Situation

SIM Software has hired our team to develop an application which will simulate an airport luggage system and will provide the means to find the optimal resource allocation via statistics related to how the luggage has been processed.

## Problem

SIM Software is a company which is growing at a fast ratio and they would like to expand their business to cover a broader area of simulation software. Without this new simulation software SIM Software will not be able to grow in their sector.

## Project Goal

The goal of the project is to create a simulation software which will administer the complete process of luggage handling in any given airport. The software should start from the check-in of a luggage and should end at a check-out (arrival). The goal is to also have this software to be able to optimize itself by taking data from statistics done on the luggage and thus keep the process optimized at all times.

## Deliverables and Non-Deliverables

Deliverables:

* Documentation, including URS, Project Plan, Proof of Concept and Design Document.
* Source code.
* Prototypes of the end of each iteration.
* An object-oriented application which will perform simulations on the path that a luggage goes from the check-in until the check-out in an airport.
* A database that will store models and results from the simulations of the application.
* Process flow documentation (i.e. Meeting Agenda documents)

Non-deliverables:

* Technical equipment, this includes anything technical which is needed to transport the luggage from one point to another.
* Manuals for usage of the software.

## Constraints

*Constraint 1:* ​Time

The project should be completed within 5 months.

*Constraint 2:* ​Programming language

The applications should be programmed in an object-oriented language, which all the team members are familiar with, e.g. C#. The applications should obey the principles of the object-oriented approach.

*Constraint 3:* ​Version control

Working with a version control system (GitLab) is required.

*Constraint 4:* ​Database hosting

The database must be hosted on the hosting provided by Fontys.

## Risks

*Not all project features are finished on time*

* Probability: Low
* Impact: High
* To prevent: ​​Communicate often with the client
* Solution: ​​Focus on the must haves

*Conflict between team members disrupts the project*

* Probability: Low
* Impact: Medium
* To prevent: ​​Discuss the entire project together, encourage team communication
* Solution: ​​Have a meeting, find problems and then find the solutions to those problems together with the team.

*Team might not possess the required knowledge to successfully complete the project*

* Probability: Medium
* Impact: High
* To prevent: ​​Inform tutor on time
* Solution: ​​Contact tutor and ask for assistance

# Project Phasing

In this chapter the overview of the project tasks is shown distributed over the time the team is given for the project.

## Activities and Milestones

**For milestone M1 – Kick-off Phase**​ ​**(week 1 - 2):**

Activities:

* Team forming.
* Research on algorithms that need to be implemented.
* Preparation for meeting with client.

Deliverables:

* Draft of Project Plan.
* Application Proposal.

**For milestone M2 – Initial Phase (week 3 - 4):**

Activities:

* Create Project Plan for Iteration 1
* Update version of Project Plan & URS.
* Prepare for meeting with client/tutor.
* Create work division report.

Deliverables:

* Final version of Project Plan for Iteration #1
* Updated URS.
* Work Division Report.

**For milestone M3 – Iteration 1 (week 5 - 10):**

Activities:

* Present, Discuss and Update URS according to tutor/client wishes.
* Work on the application (code) and database.
* Create UML Class Diagrams and Sequence Diagrams.
* Create Project Plan for Iteration #2
* Update Work Division Report
* Prepare for meeting with client/tutor.

Deliverables:

* Final URS Version for Iteration #1
* Final version of Project Plan for Iteration #2
* Source code of proof of concept.
* Proof of concept.
* Updated work division report.
* UML Class & Sequence Diagrams.

**For milestone M4 – Calibration (week 11):**

Activities:

* Prepare for presentation in front of board of tutors.
* Update URS.
* Start working on Design Document.

Deliverables:

* Updated URS.
* Design Document & Testing Plan for Iteration #2

**For milestone M5 – Iteration 2 (week 12 - 14):**

Activities:

* Work on finalizing URS, Design Document & test reports of Iteration #2
* Work on Project Plan for Iteration #3
* Work on creating the first prototype of the system.
* Work on cleaning source code and bugs in the application by conducting various tests.
* Update Work Division report.

Deliverables:

* Final URS, Design Document & Test Report for Iteration #2
* Final version of Project Plan for Iteration #3
* Source code, unit tests of prototype and prototype itself.
* Updated work division report.

**For milestone M6 – Iteration 3 (week 15 – week 17):**

Activities:

* Finalize all URS, Design Document and Test report for iteration #3
* Work on cleaning bugs, conducting tests on current application functionality.
* IF there is free time, add some extra functionality.
* Finalize all work on documentation & coding.
* Create Process Report.

Deliverables:

* Final URS, Design Document & Test Report for Iteration #3.
* Source code, unit tests of final product and final product itself.
* Final version of work division report.
* Process Report.

**For milestone M7 – End Phase (week 18/19):**

Activities:

* Prepare for presentation in front of board of tutors.

Deliverables:

* Presentation about application.

## Time Distribution

The proposed time to complete this project is 180 hours (18 weeks), each of the members is supposed to work at least 10 hours per week. Below is how the team will allocate time for each task:

|  |  |
| --- | --- |
| Documentation (Project Plans, URS, UML Diagrams, Design Documents, Test Reports, Process Reports, Work Division Reports) | 45 hours. |
| Meetings with tutor (Presentations and normal meetings) | 15 hours |
| Application Design | 10 hours |
| Database Design | 10 hours |
| Building Application | 85 hours |
| Building Database | 15 hours |

# MOSQUITO

The following chapter includes organizational topics, such as money distribution, skills needed for the successful implementation of the project, the quality of the end product and team organization and information.

## Money

|  |  |
| --- | --- |
| **Project expenses** | **Prices** |
| Planning | € 350 |
| Application Design | € 450 |
| Application Programming | € 3 800 |
| Database Design | € 500 |
| Database Implementation | € 1 200 |
| Copyright License | € 120 per year |
| Maintenance | € 450 per year |
| Server Back-Up Storage | € 80 per year |
| Customer Support | € 500 per year |
| **Initial Total Price:**  **Yearly Expenses:** | **7 450$**  **1 150$** |

## Skills

In order for this project to be fulfilled, the team must consist of people with skills in the following areas:

* Project Management
* Customer Support
* C#
* SQL
* Database Design

## Quality

In order for the client to be content, there are certain quality aspects which need to be met:

* C# Application with complete functionality as desired by the client.
* Bug-free C# Application written in an Object Oriented way.
* Optimized database.
* User-friendly design of application which would make the user experience more comfortable.

## Information

The following table contains information about the distribution of tasks in the team and the actions to them - to read, approve, write or discuss.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ~ | Project Plan | Application  Development | Database  Development | Database  relationship | Testing &  Documentation |
| Customer | [A] | [A] | [A] | [A] | [R] |
| Project Leader | [W] | [D] | [D] | [D] | [R/D] |
| Designers | [R] | [W] | [D/W] | - | [D/W] |
| C# Developers | [R] | [W] | - | [W] | [D/W] |
| Database Developers | [R] | - | [W] | [W] | [D/W] |

(Legend: R = Read; A = Approve; W = Write; D = Discuss.)

## Team Organisation

The scheme below depicts the roles in the team and their connections.

