OnlyBugs Inc.



Project Plan

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## Note: i1, i2, i3 and i4 are mentioned across this document- they stand for iteration 1, iteration 2, iteration 3 and iteration 4, the text after them concerns the first, second, third and fourth iteration of the project respectively

## Client Description

Our client is Ms. Sreedevi who will represent and who we can contact using email: s.thayyakatheraveendran@fontys.nl and weekly meetings.

Media Bazaar is a daughter company of Jupiter that is trying to open a shop in Eindhoven and for that they need an application which helps them with the overall management of the store but mainly for that of employee and stock.

## Team Introduction

Our team consists of 4 people who will be represented by Daniil Blagoev.  
you can contact him using email: [d.blagoev@student.fontys.nl](mailto:d.blagoev@student.fontys.nl) and weekly meetings.

Team: Daniil Blagoev, a student from Bulgarian origin.  
 Jakub Jelínek, a student from the Czech Republic.  
 Rositsa Nikolova, a student from Bulgarian origin.  
 Rens van den Elzen, a student from the Netherlands.

We are software engineering students in Fontys and we all have worked together on a different project before and all of us contributed something that helped get the project to a very respectable and well-functioning final version. We think that we can do even better with this project since we have acquired new skills and knowledge.

## Current situation

Parent company Jupiter wants to open a new shop called Media Bazaar and they prefer being well prepared before they open the shop. They feel that the biggest roadblock will be managing employees and their shifts. That is why they want an application that will allow them to manage their employees and their statistics, and a way to manage their inventory.

(i1) After having the application delivered, they want to have a web application in which the employees can login using their own credentials in order to view their schedule and make suggestions for their schedule. The suggestions are something along the lines of saying they prefer working on certain days.

(i2) After seeing the latest iteration of the project, the client now wants to be able to filter the products in stock. This is to make it easier to look for specific products for when the inventory becomes larger over time. The client also wants workers to receive an email with their login credentials so that they can change their password with the first login in the website. For the scheduling the client wants worker to be able to suggest up to two leave days per month from the website and the admin in the desktop application to approve it.

(i3) the client was satisfied with the latest iteration and now wants to build upon that. They now want the employees to receive an email notifying them if they get fired and they also want employees to be able to send preferences on when they want to work to the admins. They also want either a barcode or a QR-code to navigate through products easier. After seeing how cluttered the statistics were, the client also requested that the statistics get their own tabs. And last but not least they want an automatically generated schedule for the following week.

(i4) the latest iteration of the project was approved by the client. Now for the final iteration the client wants some small adjustments to the project. Think of things like adding Saturday and Sunday to the schedule. When an employee requests a leave day it should be represented in the schedule. The client also wants a small rework of the UI and physical barcodes. Finally, they also want the stock of a certain product to change with the corresponding barcode.

## Problem statement

The software solution focuses on two main problems: managing employees and keeping track of stock. The administration of the employees has the highest priority as the client requested. For the administration department the system is going to solve the problems with assigning work shifts, keeping track of attendance and adding and removing employees. The management department is currently not able to see an overview of the employees, stock, and detailed information about every employee, which is essential for every management team.

(i1) The employees cannot adjust their working shifts and edit their personal information at the moment, which can cause misunderstandings in the working process. There is also no way for sending requests from the sales department to the warehouse department which is particularly important for the proper functioning of the store. To summarize, the issues listed above can lead to misinformation, lack of coordination between the different departments, difficulties in the working processes and delays.

(i2) At the moment there is not a search function in the product interface. Along with that the products do not have barcodes and they can be created only with the predefined categories from the backend. On the website employees can see only the current month for now. Additionally, employees cannot request a leave request if needed. Currently, employees can login only with the credentials that admin set for them when adding them and they do not receive any email or message with these credentials, and they cannot change their password.

(i3) When employee requests a leave request he is not removed from the list with available employees for that day. In the email that is send after creating an employee account by admin there is no link to the website where they should login. Also, the schedule is still manual. The employees cannot give preferences when they want to work. Additionally, an employee does not receive an email when his account is deactivated by the admin. Last but not the least the UI in the desktop application currently is not the most user-friendly one.

(i4) The majority of the functionalities are already implemented after iteration 3 but currently, when scanning products quantities are not reduced from sales quantities. Saturday and Sunday are not present in the preferred shifts. When employee requests a leave request is not shown in the automated schedule. Barcodes can be only scanned from the screen; it should be possible to be printed. Also, the UI can be improved. Automated schedule for the next week cannot be deleted and generated again. The home page on the website will be used for showing announcements created by the manager. When partially accepting or rejecting a request for a product a reason is not saved.

## Project goal

Our team aims at designing a user-friendly and easily extensible software system for managing employees and stock in the hardware store from scratch. The first release includes a desktop application with three types of users – Administrator, Manager and Worker. The user interface and functionalities are going to be different for every user. For administrators, the application is going to provide the ability to manage employees and schedule, for managers - useful statistics and overview of employees and for the workers - checking their own schedule.

(i1) In the second release a website for the workers is going to be created where they can login to see their own schedule. The desktop application is going to be extended. Functionalities for managing the products will be added. For managing the availability of the stock, we are going to create different user interfaces for the sales and warehouse departments. Employees in the sales department will be able to send request for stock, while the employees in the warehouse department should decide if the request can be approved. We are also going to show useful statistics regarding product requests in the manager view.

(i2) In the second iteration we are going to add barcodes for the products so in the future they can be scanned with mobile phone. We are also going to give the ability to the admin to add custom categories for the products. A search function for searching by product name, brand and category is going to be developed for admin and warehouse employees. New statistics for the distribution of products per category is also going to be added. For the warehouse employee view, we are also going to improve the user interface and show on the right side only the selected product. We are planning to design a company logo as well. For the website, a function for seeing the past and next months is going to be created. When an admin adds a new worker (sales or warehouse department) an automatic email will be sent with the credentials for login into the website. At first login the employees should change their password. On the website employees should also be able to request a leave request up to 2 times per month where admin should approve it or decline it form the desktop application.

(i3) The highest priority for this iteration is the automated weekly schedule which is combined with the preferences for workdays of the employees. This is going to be implemented on the website. Secondly, an email should be sent when an employee is deactivated and a link to the website will be added to the email when employee account is created. When employees are requesting a leave, this should be reflected in the manual schedule and the employee should not be shown as available for the day. The user interface in the desktop application also will be changed to be more user-friendly.

(i4) The goal for this iteration is to fully finish all functionalities. Automated schedule is working properly, but when employee request a leave on the website this day should be reflected in the schedule. Also, we are going to add Saturday and Sunday as options for the preferred shifts. UI in product management, sales, and warehouse views can be improved. Additionally, when scanning a product on the sales tab and pressing a button, quantities of the scanned products will be reduced. Printing the barcodes and scanning them is in the plan for the final product as well. We will implement the functionality for deleting the generated schedule for the next week and generating it again. Also, a new functionality is manager creating announcements for the employees and showing them on the home page on the website.

## Deliverables x non-deliverables

Our team will deliver an external deliverable, i.e. working system which solves the problems mentioned during our meeting interview, URS (User Requirements Specification) document which describes the business needs for what users require from the system and an internal deliverable such as user’s guide, i.e. how to use an app (e.g. user accounts).

Since our client was clear about his main concerns and priorities, we will focus on those. Priorities such as managing employees and managing stock. For first six weeks period we promised just employee management. (i1) Since this period passed, we managed to finish employee management so we can now concentrate on stock management.

During iteration one(i1), our team managed to make product and stock management work. We also updated URS and Project plan.

At the end of iteration two(i2), our team will deliver updated URS, Project plan and upgraded version of application and website with new features in area of stock management and product management.

At the end of iteration three(i3) out team will deliver updated documentation such as URS, Project plan, and new document Activity diagram for automated scheduling. Adding to this we will deliver working Application and Website with new features in area of product management and scheduling.

With last coming iteration four(i4), our team will finish all the deliverables. Final deliverables are URS, Project Plan, Process report, activity diagram for automated schedule, working Application and finished Website and basic user guide with credentials. All deliverables will be polished and ready to publish and show to the client and other audience.

We can promise a working solution (App) with employee management and updated stock and product management website with schedule view for employees, leave request and as a new feature we will concentrate on automated scheduling and product management with barcode.

We will do our best to get to point when we can also concentrate on automated schedule. Opportunity to schedule shifts manually is guaranteed.

Our team will do its best to delight you with our software solution and the attached documents.

## Project Constraints

The first product presentation has a hard deadline of week 6. It will consist of the team presenting the functionalities with the highest priority (managing employees and stock), which will come in the form of an application. The team’s focus will be on making the prioritised requirements fully functional and the visual quality of the product might suffer slightly, as it will be put in the background until most other things are fully working. The programming languages which will be used are: C# and SQL for the application’s logical processes, HTML and CSS for the visual representation of it. We suspect that no money will have to be spent on hardware as such problems can be taken care of by our university (ISSD).

## Phase planning

Phase 1:

* Activities: Pre-implementation documents
  + Activity 1.1a:
    - Analysis of the first interview with the customer and initial work on the Project plan document
    - Estimated time: ~3 hours; done by the end of week 1
  + Activity 1.2a:
    - Finalisation of the project plan document based on feedback
    - Estimated time: ~1 hour; done by the end of week 2
  + Activity 2.1a:
    - Second customer interview
    - Estimated time: ~1 hour; done at the very beginning of week 2
  + Activity 3.1a:
    - Analysis of the second customer interview, outlining the discussed requirements and initial work on the URS document
    - Estimated time: ~4 hours; done by the end of week 3
  + Activity 3.2a:
    - Finalisation of the URS document based on feedback
    - Estimated time: ~1 hour; done by the end of week 4
* Deliverables (Milestone 1):
  + Deliverable 1.1: Project plan document
  + Deliverable 2.1: URS document

Phase 2:

* Activities: Implementing the software solution
  + Activity 1.1a:
    - Creation of the base architecture of the app based on the customer’s functional requirements and beginning the building process
    - Estimated time: ~7 hours; done by the end of week 4
  + Activity 1.2a:
    - Finishing touches on the app and work on the final UI design
    - Estimated time: ~5 hours; done by the end of week 5
  + Activity 2.1a:
    - Creation of a test plan and sending it to peers
    - Estimated time: ~3 hours; done by the end of week 5
  + Activity 3.1a:
    - Review peers and filling in their test report
    - Estimated time: ~2 hours; done by the end of week 5
* Deliverables (Milestone 2):
  + Deliverable 1.1: Test plan for our own project
  + Deliverable 2.1: Test report for the other group’s project

Phase 3:

* Activities: Presenting the software solution
  + Activity 1.1:
    - Creating a process report
    - Estimated time: ~2 hours
  + Activity 2.1:
    - Presenting the software solution to the customer and peers
    - Estimated time: ~1 hour
* Deliverables (Milestone 3):
  + Deliverable 1.1: Process report
  + Deliverable 2.1: Software solution

(i1) Phase 4:

* Activities: Planning the first iteration of the project and updating project plan + URS
  + Activity 1.1:
    - Meeting with customer to discuss functionalities for the next iteration
    - Estimated time: ~1 hour
  + Activity 2.1:
    - Update Project plan and URS according to the latest agreements with the customer
    - Estimated time: ~2 hours
  + Activity 3.1:
    - Split the work into tasks and assign them
    - Estimated time: ~1 hour
* Deliverables (Milestone 4):
  + Deliverable 1.1: Updated project plan
  + Deliverable 2.1: Updated URS document

Phase 5:

* Activities: Implementing latest requirements
  + Activity 1.1:
    - Update our UML class diagram & database
    - Estimated time: ~2 hours
  + Activity 2.1:
    - Update the windows forms UI
    - Estimated time: ~1 hour
  + Activity 3.1:
    - Implement the new classes for the latest functional requirements
    - Estimated time: ~6 hours
  + Activity 4.1:
    - Show the tutor our latest work and get feedback on it
    - Estimated time: ~1 hour
  + Activity 4.2:
    - Implement the feedback
    - Estimated time: ~2 hours
* Deliverables (Milestone 5):
  + Deliverable 1.1: Code
  + Deliverable 2.1: Code binaries

Phase 6:

* Activities: Present the first iteration to the customer
  + Activity 1.1:
    - Creating a process report
    - Estimated time: ~2 hours
  + Activity 2.1:
    - Presenting our work and discussing it with the customer
    - Estimated time: ~1 hour
* Deliverables (Milestone 6):
  + Deliverable 1.1: Process report

(i2) Phase 7:

* Activities: Planning the second iteration of the project and updating project plan + URS
  + Activity 1.1:
    - Meeting with customer to discuss functionalities for the next iteration
    - Estimated time: ~1 hour
  + Activity 2.1:
    - Update Project plan and URS according to the latest agreements with the customer
    - Estimated time: ~3 hours
  + Activity 3.1:
    - Split the work into tasks and assign them
    - Estimated time: ~1 hour
* Deliverables (Milestone 7):
  + Deliverable 1.1: Updated project plan
  + Deliverable 2.1: Updated URS document

Phase 8:

* Activities: Implementing latest requirements
  + Activity 1.1:
    - Update our UML class diagram & database
    - Estimated time: ~3 hours
  + Activity 2.1:
    - Update the windows forms UI
    - Estimated time: ~2 hours
  + Activity 3.1:
    - Implement the new classes for the latest functional requirements
    - Estimated time: ~8 hours
  + Activity 4.1:
    - Show the tutor our latest work and get feedback on it
    - Estimated time: ~1 hour
  + Activity 4.2:
    - Implement the feedback
    - Estimated time: ~2 hours
* Deliverables (Milestone 8):
  + Deliverable 1.1: Code
  + Deliverable 2.1: Code binaries

Phase 9:

* Activities: Present the second iteration to the customer, tutor, and peers
  + Activity 1.1:
    - Creating a process report
    - Estimated time: ~2 hours
  + Activity 2.1:
    - Presenting our work
    - Estimated time: ~1 hour
* Deliverables (Milestone 9):
  + Deliverable 1.1: Process report

(i3) Phase 10:

* Activities: Planning the third iteration of the project and updating project plan + URS
  + Activity 1.1:
    - Meeting with customer to discuss functionalities for the next iteration
    - Estimated time: ~1 hour
  + Activity 2.1:
    - Update Project plan and URS according to the latest agreements with the customer
    - Estimated time: ~2 hours
  + Activity 3.1:
    - Split the work into tasks and assign them
    - Estimated time: ~1 hour
* Deliverables (Milestone 10):
  + Deliverable 1.1: Updated project plan
  + Deliverable 2.1: Updated URS document

Phase 11:

* Activities: Implementing latest requirements
  + Activity 1.1:
    - Update our UML class diagram & database
    - Estimated time: ~2 hours
  + Activity 2.1:
    - Update the windows forms UI
    - Estimated time: ~1 hour
  + Activity 3.1:
    - Implement the new classes for the latest functional requirements
    - Estimated time: ~6 hours
  + Activity 4.1:
    - Show the tutor our latest work and get feedback on it
    - Estimated time: ~1 hour
  + Activity 4.2:
    - Implement the feedback
    - Estimated time: ~2 hours
* Deliverables (Milestone 11):
  + Deliverable 1.1: Code
  + Deliverable 2.1: Code binaries

Phase 12:

* Activities: Present the third iteration to the customer
  + Activity 1.1:
    - Creating a process report
    - Estimated time: ~2 hours
  + Activity 2.1:
    - Presenting our work and discussing it with the customer
    - Estimated time: ~1 hour
  + Activity 3.1:
    - Creating an activity diagram
    - Estimated time: ~2 hours
* Deliverables (Milestone 12):
  + Deliverable 1.1: Process report

(i4) Phase 13:

* Activities: Planning the fourth and final iteration of the project and updating project plan + URS
  + Activity 1.1:
    - Meeting with customer to discuss functionalities for the next iteration
    - Estimated time: ~1 hour
  + Activity 2.1:
    - Update Project plan and URS according to the latest agreements with the customer
    - Estimated time: ~3 hours
  + Activity 3.1:
    - Split the work into tasks and assign them
    - Estimated time: ~1 hour
* Deliverables (Milestone 13):
  + Deliverable 1.1: Updated project plan
  + Deliverable 2.1: Updated URS document

Phase 14:

* Activities: Implementing latest requirements
  + Activity 1.1:
    - Update our UML class diagram & database
    - Estimated time: ~3 hours
  + Activity 2.1:
    - Update the windows forms UI
    - Estimated time: ~2 hours
  + Activity 3.1:
    - Implement the new classes for the latest functional requirements
    - Estimated time: ~8 hours
  + Activity 4.1:
    - Show the tutor our latest work and get feedback on it
    - Estimated time: ~1 hour
  + Activity 4.2:
    - Implement the feedback
    - Estimated time: ~2 hours
* Deliverables (Milestone 14):
  + Deliverable 1.1: Code
  + Deliverable 2.1: Code binaries

Phase 15:

* Activities: Present the fourth iteration to the customer, tutor, and peers
  + Activity 1.1:
    - Creating a process report
    - Estimated time: ~2 hours
  + Activity 2.1:
    - Presenting our work
    - Estimated time: ~1 hour
* Deliverables (Milestone 15):
  + Deliverable 1.1: Process report