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fONTYS UNIVERSITY OF APPLIED SCIENCE

# Project Plan

# Traffic Lights

# Final version

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# Project statement

## Formal client

Mr George is the formal client and he is the person responsible of handling the traffic situation in his city, Csharp. He is also acquainted with Mr. Kuah who is a teacher at the ICT department at Fontys University.

## Project leader

Monica Stoica is the leader of our group **D,** formed of Rosen Danev, Alexandru Vinerean, Blagovest Tsarev, Ventsislav Yotov, Preslav Gerchev and Dmytro Bunin. The members are students at Fontys University of Applied Science ICT&Software Engineering.

## Current situation

The formal client Mr George, is responsible of handling the traffic situations in his city. The city is quite small and the traffic is always busy. In order to take care of this problem, Mr George is looking into installing a new traffic light system in his city to diminish the number of accidents. He would like to add traffic lights for cars and pedestrians and sensors. However, before installing anything, he would like to know how this would affect the city. Therefore, he wants to investigate whether these traffic lights will not cause too many accidents.

## Project justification

The current problems faced by Mr George and his company are the main reason of our project. Due to his lack of experience with software engineering, he has requested our help. The main problem faced by Mr.George is resented by the busy traffic in his city. Currently the city has no traffic lights and/or sensors. In order to choose the best solution, Mr.George must be able to recreate real-life traffic situation. Moreover, thse sitations have to be presented to a committee in the simplest way possible.

## Project product

The purpose of this project is to deploy fully functional system. This should allow Mr George to simulate a real life traffic situation. This will be done according to points read as followed:

* Create a software system to simulate real-life traffic situations

## Risks

|  |  |  |  |
| --- | --- | --- | --- |
| Risk factor | Preventive measures | Probability | Priority |
| 1. Human error of a group member | The team will work with the AGILE method. To keep the members motivated, at the end of each block a peer review form will be handed out. | 60% | Medium |
| 2. Unrealistic schedule | The project will follow the deadlines set in the Phasing section of this document. The team will reuse software-code from previous assignments if available. | 50% | Low |
| 3. Standard software, external components (inexperience, incompatibility, etc.) | By releasing a prototype, the client will be able to test the software in his own environment. Moreover, we describe our software compatibility in the URS document under the ‘*non functional requirements’* section. | 60% | Low |
| 4. Requirements and developed functions do not match | The team will provide the client with a design document and URS document. | 25% | High |
| 5. User interfaces do not fit needs | Before the final version, a prototype will be launched and the client has the possibility to test it. | 50% | High |
| 6. Inadequate architecture, performance, quality | The team will make a test plan and will perform different simulations to make sure that the desired quality is achieved. | 30% | Medium |

## Constraints

1. Language

The windows application will be available only in English because our team has no knowledge of Dutch.

1. Programming Language

Due to our knowledge with Visual Studio we will use as programming language C#.

## Quality

The quality of our product consists mainly of a user friendly interface. The software application has to satisfy the needs of the client and his staff. It needs to be straight forward and easy to use. To make sure that our product will fulfil the criteria, our team will provide a deisgn document in which the user interface will be explained. Moreover, a prototype will be deployed before the deadline. In this way, the client can test the product and express is opinion about the usability of the software system. If the client considers that the user interface can be improved and the project leader decides that we have enough time to do so, the team will make the changes.

Another actor that influences the quality of the product is represented by the reliability. The team will make sure that no errors will be displayed during run time and the application will not crash unexpectedly by writing test plans.

## Deliverables

### Must

* Project plan
* User requirement specification (URS)
* Test Plan
* Class diagram design
* GUI design
* Prototype
* User’s manual
* C# Application
* Process report

### Won’t

* Anything hardware related

# Project Phasing

*Building*

*Analysis*

*Design*

*Testing*

*Deploy*

*Initiation*

*Start-up the project*

*Testing the system*

*Build Prototype*

*User requirements*

*GUI design*

*Deploy the system*

*Class Diagram*

*Test plan*

***M1***

*Write the user’s manual*

*Project plan*

*Build App*

***M2***

***M3***

***M5***

***M4***

***M6***

Deliverables for milestone **M1** are:

* Detailed division of work amongst team members.
* First version of Project Plan
* Interview with the client

Deliverables for milestone **M2** are

* Second version of Project plan
* First version of user requirements (i.e., which functionality does the new software system has to offer).
* Test plan

Deliverables for milestone **M3** are:

* GUI Design
* Final version of user requirements
* Test plan final version
* Class diagram design

Deliverables for milestone **M4** are:

* Implement of the design
* Prototype

Deliverables for milestone **M5** are:

* Application for traffic lights system
* Process report

Deliverable for milestone **M6** are:

* A deployed system consisting of C# application.
* Present the project in front of Mr. George and his staff.

## Time

1. It is estimated that this project will last 15 weeks. (February – July). The project will start on the 17th of February.
2. Time planning for project activities is as follows:

|  |  |  |
| --- | --- | --- |
| WEEK | ACTIVITY | MILESTONE |
| Week 1  17.0.2016 – 21.02.2016 | Division of work | Milestone 1 |
| Research about the traffic components  Project plan first version  Client interview |
| Week 2  22.02.2016 – 28.02.2016 | Project Plan second version  First version of user requirements | Milestone 2 |
| Week 3  29.02.2016 – 06.03.2016 | Final version for project plan and URS |
| Week 4 – 5  07.03.2016 – 20.03.2016 | Test plan |
|  |
| Week 6  21.03.2016 – 27.03.2016 | Class diagram design  GUI design | Milestone 3 |
| Week 7  28.03.2016 – 03.04.2016 | Deliver project plan together with URS, test plan and design |
| EXAM TIME  04.04.2016 – 17.04.2016 |
| Week 10  25.04.2016 – 30.04.2016 | Implement the design | Milestone 4 |
| HOLIDAY TIME  02.05.2016 – 08.5.2016 |
| Week 11-13  09.05.2016 - 29.05.2016 | Work at the application and show the first version | Milestone 5 |
| Week 14-15  30.05.2016 – 12.06.2016 | Work at the application and hand in the final version  Preparing presentation  Process report |
| Week 16  13.06.2016 – 19.06.2016 | Final presentation | Milestone 6 |
| Week 17-18  EXAM TIME  20.06.2016 – 03.07.2016 | Deploy the system |
| Present the project |

***Note: Every milestone will be presented within couple of days after the deadline.***

1. In parallel to project activities, several types of meetings will take place:

a. Weekly progress meeting

b. Reporting to customer

# Division of tasks

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Task: | Rosen | Monica | Dmytro | Alexandru | Blagovest | Ventsislav | Preslav |
| Project Plan | x | X | X | X | X | x |  |
| URS | X | X | X | X | X | X | X |
| Class diagram design |  | X | X | X |  |  | X |
| Test plan | X | X | X | X | X | X | X |
| UML Design |  | X | X | X |  |  | X |
| GUI | X |  |  |  | X | X |  |
| Prototype | X | X | X | X | X | X | X |
| Code implementation | X | X | X | X | X | X | X |
| Process Report | X | X | X | X | X | X | X |
| Presentation | X | X | X | X | X | X | X |

# Information table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Agenda & Minutes** | **Project plan** | **Test plan** | **UML Design** | **GUI** | **Deliverable** | **Process**  **Report** |
| *Formal client* | R | A,R | R | R | A, R | A, R, Di | R |
| *Teacher* | R | Di ,R | R, Di | Di, R | Di, R | Di, R | R, Di |
| *Project leader* | A | A,S | R,A, S | A, S | A, R, S | A, R, S | A, R,S |
| *Project team* | R | Di, Dr | Dr, Di | Dr, Di | Dr, Di | Dr, Di | Dr, Di |
| *Secretary* | Dr, Ar, S | Ar | Ar | Ar | Ar | Ar | Ar |

*(Dr=Draw up, Di=discuss, A=Approve, R=receive/read, Ar=archive, S=Send)*

# Organization

***Mr George*** represents the client. He is an employee of the city of Csharp and is responsible for the traffic situation in the city. Mr. George wants to reduce the accidents on the road. To solve this problem, he decided to place more traffic lights on the intersections. But the problem of traffic jams may occur. So Mr. George needs an application where he can test the busyness of the intersection.

***Mr. Kuah*** is is a teacher in ICT department of Fontys University. He is the link between Mr. George and the project group. The project meetings will be held with him.

***Monica Stoica*** is a project leader of the project group. She is responsible for organizing the members, divide the work between them and to make sure that all the deliverables are presented on time.

***Rosen Danev, Dmytro Bunin, Ventsislav Yotov, Blagovest Tsarev, Alexandru Vinerean and Preslav Gerchev*** are the memebrs of the project group. They will create the documentation for the project and implement it.

***Rosen Danev*** is also the secretary of the group. He will be taking notes during interviews and create the agenda for weekly meetings.