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fONTYS UNIVERSITY OF APPLIED SCIENCE

# Project Plan

# Traffic Lights

# Version I

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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.

## Project leader

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

## Current situation

The formal client Mr George wants to install a new traffic light system in his city to diminish the number of accidents. 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. Another significant point is that the client’s company has no experience with building windows applications.

## 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 the points read as followed:

* There have to be two types of crossing possible
* The possibility to place a minimum of 1 and a maximum of 12 crossings in a grid
* Adjustment of car-flow for every road
* Real-time traffic movement
* For every crossing the ‘green’ time of the traffic light has to be adjustable

## Deliverables

### Must

* Project plan
* User requirement specification (URS)
* Test Plan
* Class diagram design
* GUI design
* Prototype
* User’s manual
* C# Application
  + Two types of crossings possible
  + Place a minimum of 1 and a maximum of 12 crossings in a grid.
  + Adjust the car-streams coming from outside.
  + Real-time traffic movement
  + Adjust the ´green´ time of the traffic-light

* Process report

### Should

* Resizable working space
* Save and load

## Non-Deliverables

### Won’t

* Traffic lights
* Sensor
* Anything hardware related

## Risks

|  |  |  |  |
| --- | --- | --- | --- |
| Risk factor | Preventive measures | Probability | Priority |
| 1. Human error on part of  Group member | rewards; team formation; training; peer reviews; adapt process  to available know-how | 60% | Medium |
| 2. Unrealistic schedule and  budget | Business-case analysis; incremental  development; reuse of software; modification of schedule and budget | 50% | Low |
| 3. Standard software, external components (inexperience, incompatibility, etc.) | Benchmarking; prototyping; review of reference installations; compatibility analysis; review of suppliers | 60% | Low |
| 4. Requirements and developed functions do not match | Win-win agreements between parties concerned; business-case analysis; prototyping; application description in early phases | 25% | High |
| 5. User interfaces do not fit needs | Prototyping; development of scenarios; description of users | 50% | High |
| 6. Inadequate architecture, performance, quality | Simulation; benchmarking; modeling; prototyping; tuning | 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#.

# Project Phasing

*Building*

*Analysis*

*Design*

*Testing*

*Deploy*

*Initiation*

*Start-up the project*

*Testing the system*

*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  177.02016 – 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 |
| Project Plan | x | X | X | X | X | x |
| URS |  |  |  |  |  |  |
| Class diagram design |  |  |  |  |  |  |
| Test plan |  |  |  |  |  |  |
| UML Design |  |  |  |  |  |  |
| GUI |  |  |  |  |  |  |
| Prototype |  |  |  |  |  |  |
| Code implementation |  |  |  |  |  |  |
| Process Report |  |  |  |  |  |  |
| Presentation | 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 |  |  |  |  |  |
| *Project leader* | A | A,S |  |  |  |  |  |
| *Project team* |  | Di |  |  |  |  |  |
| *Secretary* | Ar, S | 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 a 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 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.