Airport Traffic Simulator

[Process report]

Teacher: Chung Kuah

ProCP

19/02/2018

Developers: Yoanna Borisova, Teodor Genov, Vladimir Katrandzhiev, Monika Kerulyte, Ignas Kybransas, Rostislav Tinchev

Table of Contents

[Preface 2](#_Toc514062285)

[Process of every week 3](#_Toc514062286)

[Week 1 3](#_Toc514062287)

[Week 2 4](#_Toc514062288)

[Week 3 5](#_Toc514062289)

[Week 4 6](#_Toc514062290)

[Week 5 7](#_Toc514062291)

[Week 6 8](#_Toc514062292)

[Week 7 9](#_Toc514062293)

[Week 8 10](#_Toc514062294)

[Week 9 11](#_Toc514062295)

[Week 10 12](#_Toc514062296)

[Week 11 13](#_Toc514062297)

[Week 12 14](#_Toc514062298)

[Week 13 15](#_Toc514062299)

[Week 14 16](#_Toc514062300)

[Week 15 17](#_Toc514062301)

[Individual reflections 18](#_Toc514062302)

[Monika Kerulyte 18](#_Toc514062303)

[Ignas Kybransas 18](#_Toc514062304)

[Yoanna Borisova 18](#_Toc514062305)

[Teodor Genov 18](#_Toc514062306)

[Vladimir Katrandijev 18](#_Toc514062307)

[Rostislav Tinchev 18](#_Toc514062308)

[DOT Framework 19](#_Toc514062309)

[Agendas and minutes 20](#_Toc514062310)

[Hours worked overview per group member 21](#_Toc514062311)

# Preface

The process report shows a series of actions which are carried out each week in order to achieve the particular wanted results for the ProCp project during the study weeks, together with the problems and challenges faced during that period.

# Process of every week

## Week 1

05/02/2018 – 11/02/2018

**Planned activities**

1. Read course overview and get informed about the general idea about the project
2. Prepare questions for the customer
3. Teambuilding
4. Brainstorm ideas for the simulation.

**Performed and completed activities**

1. Meeting with mentor
2. Create Project Plan
3. Build a conceptual model of the solution

**Agreements**

1. Decided which idea we are going to use for the simulation.
2. Pick roles and contributions
3. Group meeting with a tutor: 19-02-2018, 13:45).

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **30min** – looking for ideas for the simulation.  **30min –** reading workbook. | **30min** – looking for ideas for the simulation.  **30min –** reading workbook. | **30min** – getting familiar with the workbook **1hr** – gathering ideas for the project | **20min** – ideas for benchmarking, simulation.  **30min –** reading workbook. | **20min** – ideas for a simulation.  **30min –** reading workbook. | **30min** – ideas for a simulation **1hr** – familiarizing with the workbook |

**Total hours worked per group member this week**

* Monika: 1hr.
* Ignas: 1hr.
* Yoanna: 1hr 30min.
* Teodor: 50min.
* Vladimir: 50min.
* Rostislav: 1hr 30min.

## Week 2

19/02/2018 – 25/02/2018

**Planned activities**

1. Research domain based on information obtained
2. Working on the Project Plan

**Performed and completed activities**

1. Meeting with mentor.
2. Research about the subject.
3. Brainstorming the tasks.
4. Working on final version of the project plan.

**Agreements**

1. Pick roles and contributions
2. Group meeting with a tutor: 26-02-2018, 13:45).

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **1hr** – checking Project Plan, making some minor changes, filling in risks table. | **2hr** – working on   project plan | **1hr** – checking Project Plan, minor changes | **1hr –** working on project plan, minor changes | **2hr** – working on   project plan | **2hr** – working on   project plan |

**Total hours worked per group member this week**

* Monika: 1hr.
* Ignas: 2hr.
* Yoanna: 1hr.
* Teodor: 1hr.
* Vladimir: 2hr.
* Rostislav: 2hr.

## Week 3

26/02/2018 – 04/03/2018

**Planned activities**

1. Update project plan.
2. Discuss project plan.
3. Create concept version of plan for iteration 1.
4. Create URS.

**Performed and completed activities**

1. Updating project plan.

**Agreements**

1. Pick roles and contributions
2. Group meeting with a tutor: 05-03-2018, 13:45).

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **1hr** – meeting with a group: discussing Project Plan, making some minor changes in the Project Plan. | **1hr** – meeting with a group: discussing Project Plan, making some minor changes in the Project Plan.  **1hr** – work on Project Plan. | **1hr** – meeting with the group, discussing Project Plan, making minor changes. | **2hr** – meeting with the group, working on Project Plan. | **2hr –** meeting with the rest of the group; finishing the Project Plan. | **1hr** – group meeting, discussion on possibilities. |

**Total hours worked per group member this week**

* Monika: 1hr.
* Ignas: 2hr.
* Yoanna: 1hr.
* Teodor: 2hr.
* Vladimir: 2hr.
* Rostislav: 1hr.

## Week 4

05/03/2018 – 11/03/2018

**Planned activities**

1. Discuss URS & plan for iteration 1.
2. Create URS.
3. Create plan for iteration 1.
4. Create work division report.
5. Update project plan.

**Performed and completed activities**

1. Creating process report, including work division report in it.
2. Creating URS.
3. Creating plan for iteration 1.
4. Updating project plan.

**Agreements**

1. Pick roles and contributions
2. Group meeting with a tutor: 12-03-2018, 13:45).

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **2hr** – creating Process Report.  **1hr** – checking documentation.  **1hr** – filling in Process Report | **2hrs** – URS creation | **3hr** – checking URS and work division report, filling in/adding missing parts | **30min** – URS documentation check  **30min** – work on iteration document | **1hr** – meeting with group; discussing documentation as a whole  **1hr** – various work on documentation | **2hr** – Work on iteration document  **1hr** – Work on URS  **30min** – Meeting with group |

**Total hours worked per group member this week**

* Monika: 4hr.
* Ignas: 2hr.
* Yoanna: 3hr.
* Teodor: 1hr.
* Vladimir: 2hr.
* Rostislav: 3hr.

## Week 5

12/03/2018 – 18/03/2018

**Planned activities**

1. Discuss project.
2. Update URS.
3. Create design document.
4. Create test plan.

**Performed and completed activities**

1. Iteration 1 plan update.
2. URS update.
3. Created concept version of the test plan.
4. Updated process report.

**Agreements**

1. Pick roles and contributions
2. Group meeting with a tutor: 19-03-2018, 13:45).

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **45min** – group meeting  **30min** – mentor meeting  **1h –** process report update | **45min –** group meeting  **30min** – mentor meeting | **45min –** group meeting  **30min** – mentor meeting | **45min** – group meeting  **30min** – mentor meeting | **45min** – group meeting  **30min** – mentor meeting | **45min –** group meeting  **30min** – mentor meeting  **15min** – iteration 1 document work |

**Total hours worked per group member this week**

* Monika: 2hr 15min.
* Ignas: 1hr 15min.
* Yoanna: 1hr 15min.
* Teodor: 1hr 15min.
* Vladimir: 1hr 15min.
* Rostislav: 1hr 30min.

## Week 6

19/03/2018 – 25/03/2018

**Planned activities**

1. Create design document.
2. Make test cases.
3. Make use cases.
4. Code.
5. Create concept version of plan for iteration 2.

**Performed and completed activities**

1. Made test cases.
2. Made use cases.
3. Created design document.

**Agreements**

1. Pick roles and contributions
2. Group meeting with a tutor: 26-03-2018, 13:45).

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **20min –** meeting with tutor.  **20min –** meeting with group.  **3hr –** creating Test Cases, searching for information how to do them.  **20min –** edit Test Plan.  **30min –** checking Use Cases.  **40min –** update Process Report. | **20min –** meeting with tutor.  **20min –** meeting with group.  **3hr –** creating Test Cases, searching for information how to do them. | **20min –** meeting with tutor.  **20min –** meeting with group. | **20min –** meeting with tutor.  **20min –** meeting with group. | **20min –** meeting with tutor.  **20min –** meeting with group.  **1h 15m** – creating use cases  **1h** – going through and redacting helping with the redaction of other use cases and test cases  **1h –** assisting with the UML diagram creation  **40 min** - various | **20min –** meeting with tutor.  **20min –** meeting with group. |

**Total hours worked per group member this week**

* Monika: 5h and 10min.
* Ignas: 3h and 40min.
* Yoanna: 40min.
* Teodor: 40min.
* Vladimir: 3h and 45 min.
* Rostislav: 40min.

## Week 7

23/03/2018 – 01/04/2018

**Planned activities**

1. Code.
2. Make debug report.
3. Make test report.
4. Update process report.

**Performed and completed activities**

1. Finished proof of concept.
2. Made test report.
3. Updated process report.

**Agreements**

1. Group meeting with tutor: 24-04-2018, 13:45.

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **40min**  - meeting with a group and tutor.  **1h 30min** – fixing errors and bugs.  **12h**  - Researching information for making radar and grid, implementing graphics and grid with cells as an objects.  **3h**  - Making and filling test report  **30min**  - User testing and getting feedback from them.  **1h** – making iteration 2 plan, bug fixing | **40min**  - meeting with a group and tutor.  **12h**  - Researching information for GUI, implementing GUI Design, sliders, button functionality, checkpoints, saving data, loading data, simulation method(Calculation between wind/temp/prec).  **2h**  - Debugging application.  **1h**  - Filling test report data. | **40min**  - meeting with a group and tutor. | **40min**  - meeting with a group and tutor. | **40min**  - meeting with a group and tutor  **10h** – working on implementation of different aspects of the application, mostly the pathfinding algorithm; doing research on said algorithm | **40min**  - meeting with a group and tutor.  **3h** – Documentation templates research  **2h** – Work on documentation |

**Total hours worked per group member this week**

* Monika: 18h and 40min
* Ignas: 15h and 40min
* Yoanna:
* Teodor:
* Vladimir: 10h and 40 min
* Rostislav: 5h and 40min

## Week 8

23/04/2018 – 29/04/2018

**Planned activities**

1. Make clear work division.

**Performed and completed activities**

1. Divided work between group members.

**Agreements**

1. Group meeting with tutor: 07-05-2018, 13:45.

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **50min**  - meeting with group and tutor. | **50min**  - meeting with group and tutor.  **1h**  - improving design of the GUI, adding some button functionality. | **50min**  - meeting with group and tutor. | **50min**  - meeting with group and tutor. | **30min**  - catching up on the missed meeting | **50min**  - meeting with group and tutor. |

**Total hours worked per group member this week**

* Monika: 50min
* Ignas: 1h and 50min
* Yoanna: 50min
* Teodor: 50min
* Vladimir: 30min
* Rostislav: 50min

## Week 9

07/05/2018 – 13/05/2018

**Planned activities**

1. Update iteration 2 plan.
2. Improve algorithm for finding path.

**Performed and completed activities**

1. Updated iteration 2 plan.
2. Improved algorithm.

**Agreements**

1. Group meeting: 10-05-2018, 15:00.
2. Group meeting with tutor: 14-05-2018, 13:45

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **40min**  - meeting with group and tutor.  **3h** – meeting with group. | **40min**  - meeting with group and tutor.  **3h** – meeting with group. | **40min**  - meeting with group and tutor.  **3h** – meeting with group. | **40min**  - meeting with group and tutor.  **3h** – meeting with group. | **40min**  - meeting with group and tutor.  **3h** – meeting with group.  **3h –** switching code design to a moreflexible structure and merging all the branches we had until this point | **40min**  - meeting with group and tutor.  **3h** – meeting with group. |

**Total hours worked per group member this week**

* Monika: 3h and 40min
* Ignas: 3h and 40min
* Yoanna: 3h and 40min
* Teodor: 3h and 40min
* Vladimir: 6h and 40min
* Rostislav: 3h and 40min

## Week 10

14/05/2018 – 20/05/2018

**Planned activities**

1. Improve path finding algorithm.
2. Implement weather conditions.
3. Implement and improve already existing graphics.
4. Make login form with functionalities.

**Performed and completed activities**

1. Improved path finding algorithm.
2. Implemented weather conditions.
3. Implemented and improved already existing graphics.
4. Made login form with functionalities.

**Agreements**

1. Group meeting with tutor: 22-05-2018, 13:45

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **40min**  - meeting with a group and tutor.  **20min** – fixing local git bugs.  **1h** – organizing agendas and minutes, modifying iteration 2 plan, looking over documentation. | **40min**  - meeting with a group and tutor.  **2h**  - adding airplanes functionality. | **40min**  - meeting with a group and tutor. | **40min**  - meeting with a group and tutor. | **40min**  - meeting with a group and tutor.  **10h –** added the zones in the airspace, fixed which checkpoint is reachable from where, minor restructuring of parts of the code, changed the way the distance between 2 points was calculated (to time instead of just distance), path following | **40min**  - meeting with a group and tutor.  **1h** – Sequence diagram polishing |

**Total hours worked per group member this week**

* Monika: 2h
* Ignas: 2h and 40min
* Yoanna:
* Teodor:
* Vladimir: 10h 40min
* Rostislav: 5h and 40min

## Week 11

21/05/2018 – 27/05/2018

**Planned activities**

1. Debug.
2. Improve already existing code.
3. Update documentation.

**Performed and completed activities**

1. Debug.
2. Improve already existing code.
3. Update documentation.

**Agreements**

1. Group meeting with tutor: 28-05-2018, 13:45

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **40min**  - meeting with a group and tutor.  **40min** – implementing airplane graphics.  **4h20min**  - modifying weather conditions code.  **10min** – updating process report.  **3h** – debugging.  **30min**  - updating documentation. | **40min**  - meeting with a group and tutor.  **1.5h**  - Random airplanes functionality.  **5h**  - Remaking code for uploading/loading data so it could save more fields. | **40min**  - meeting with a group and tutor. | **40min**  - meeting with a group and tutor. | **40min**  - meeting with a group and tutor.  7h – path following complete, a lot of git management, different features added (e.g. speed of simulation, etc. see git for a complete list), some code restructuring, various bugfixing | **40min**  - meeting with a group and tutor.  **2h** – Path Finding Algorithm planning  **2h** – Class Diagram and Sequence Diagram research  **30min** – Class Diagram update  **30min** – Sequence Diagram update |

**Total hours worked per group member this week**

* Monika: 9h and 20 minutes
* Ignas: 7h and 10 minutes
* Yoanna:
* Teodor:
* Vladimir: 7h 40min
* Rostislav: 5h and 40min

## Week 12

28/05/2018 – 03/06/2018

**Planned activities**

1. Group meeting

**Performed and completed activities**

1. Group meeting

**Agreements**

1. Create a meeting with tutor
2. Improve path finding algorithm to use more than 1 checkpoints
3. Creation of zones

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **40min**  - meeting with a group and tutor.  **4h** – Group meeting | **40min**  - meeting with a group and tutor.  **4h** – Group meeting | **40min**  - meeting with a group and tutor.  **4h** – Group meeting | **40min**  - meeting with a group and tutor.  **4h** – Group meeting | **40min**  - meeting with a group and tutor.  **4h** – Group meeting | **40min**  - meeting with a group and tutor.  **2h** – Path Finding Algorithm improvements research  **1h** – Path Finding debugging  **4h** – Group meeting |

**Total hours worked per group member this week**

* Monika: 4h and 40min
* Ignas: 4h and 40min
* Yoanna: 4h and 40min
* Teodor: 4h and 40min
* Vladimir: 4h and 40min
* Rostislav: 7h and 40 minutes

## Week 13

04/06/2018 – 10/06/2018

**Planned activities**

1. Tutor meeting
2. Group meeting
3. Debugging
4. Research

**Performed and completed activities**

1. Tutor meeting
2. Group meeting
3. Debugging
4. Research

**Agreements**

1. Login form creation
2. Database authentication
3. Airplane panel creation
4. Path following algorithm
5. Creation of impact that the zones have

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
| **40min**  - meeting with a group and tutor.  **1h** – Group discussion | **40min**  - meeting with a group and tutor.  **1h** – Group discussion | **40min**  - meeting with a group and tutor.  **1h** – Group discussion | **40min**  - meeting with a group and tutor.  **1h** – Group discussion | **40min**  - meeting with a group and tutor.  **1h** – Group discussion | **40min**  - meeting with a group and tutor.  **2h** – Path Following algorithm  **1h** – Login Form design research  **30min** – Login Form creation  **1h** – Group discussion |

**Total hours worked per group member this week**

* Monika:
* Ignas:
* Yoanna:
* Teodor:
* Vladimir:
* Rostislav: 5h and 10 minutes

## Week 14

11/06/2018 – 17/06/2018

**Planned activities**

1. Debugging
2. Additional functions adding
3. Group discussion
4. Tutor meeting

**Performed and completed activities**

1. Debugging
2. Additional functions adding
3. Group discussion
4. Tutor meeting

**Agreements**

1. Airplane panel list to be added
2. Darker colors to be used
3. Add sprites instead of graphics
4. Extend program to work with multiple airplanes
5. Put Airstip to be in the middle
6. Weather condition to move to randoms spots on GUI and stick longer

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
|  |  |  |  |  | **40min**  - meeting with a group and tutor.  **1h** – Path Finding Algorithm debugging  **1h** – GUI improvements discussion  **30min** – GUI improvements coding |

**Total hours worked per group member this week**

* Monika:
* Ignas:
* Yoanna:
* Teodor:
* Vladimir:
* Rostislav: 3h and 10 minutes

## Week 15

18/06/2018 – 24/06/2018

**Planned activities**

1. ///

**Performed and completed activities**

1. ///

**Agreements**

1. ///

**Table with activities and hours spent per group member**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Monika** | **Ignas** | **Yoanna** | **Teodor** | **Vladimir** | **Rostislav** |
|  |  |  |  |  |  |

**Total hours worked per group member this week**

* Monika:
* Ignas:
* Yoanna:
* Teodor:
* Vladimir:
* Rostislav:

# Individual reflections

## Monika Kerulyte

## Ignas Kybransas

## Yoanna Borisova

## Teodor Genov

## Vladimir Katrandijev

## Rostislav Tinchev

# DOT Framework

# Agendas and minutes

# Hours worked overview per group member

Monika Kerulyte

Ignas Kybransas

Yoanna Borisova

Teodor Genov

Vladimir Katrandijev

Rostislav Tinchev