The logo of TAMK UAS. 

Airport simulation project

by Dmitrii Bacherikov

**Contact information**

Email: [dmitrii.bacherikov@tuni.fi](mailto:dmitrii.bacherikov@tuni.fi)

Tel.: 046-611-2164

Target points: 5

Compilation and run information, screenshots from Terminal

Text

Description automatically generated

P1 version:

Input:

Text

Description automatically generated

Output:

Text

Description automatically generated

**P2 version:**

Input:

Text

Description automatically generated

Output:

Text

Description automatically generated

**P3 version:**

Input:

Text

Description automatically generated

Output:

Text

Description automatically generated

P4 version:

Input:

Graphical user interface, text

Description automatically generated

Output:

Text

Description automatically generated

**P5 version:**

Input

Text

Description automatically generated

Output

Text

Description automatically generated

**Design ideas**

Project 3.2.1.

Combined existing code pieces into one project, corrected a few mistakes in the source code and got the program working.

Project 3.2.2

Created one more runway. Each runway was used separately for landing and takeoffs.

Project 3.2.3

Same as Project 3.2.3 with 2 runways, but additionally was checked if one of them is idle or not. I just added one more method in Runway to check the queue size. The main problem here was how count arrivals and takeoffs correctly because planes were using different runways.

Project 3.2.4

Added one more extra runway in the main4 function and implemented there some logics when to use this extra runway.

Project 3.2.5

Added one more Plane class member ‘fuel’ and put a value (0-5) which is generated for each arriving plane in the main5 function. Changed the main5 function to allow planes with 0 fuel to land immediately. Also implemented a static Plane member which counts crashed planes (during landing the program defines whether a plane has any fuel left or not).

**My observations**

Adding one more runway almost doubled amount of planes accepted for landing/takeoff without refusals. Adding the third runway allowed decrease amount of planes refused the service, but idling time increased.

**Hourly report**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Month** | **Day** | **Hours** | | **Work tasks** | |
| 2021 | Nov | 10 | 2 | | Reading chapter 3 in the textbook and studying the source code | |
| 2021 | Nov | 11 | 3 | | Combining pieces of code into one project | |
| 2021 | Nov | 12 | 1 | | Bug fixing, eliminating compiling errors | |
| 2021 | Nov | 17 | 2 | | Running Phase 1 of the project and playing with different input numbers | |
| 2021 | Nov | 18 | 2 | | Making report for Phase 1, coding the introduction menu for other Phases | |
| 2021 | Nov | 19 | 3 | | Coding Phase 2, testing and comparing output with Phase 1 | |
| 2021 | Nov | 20 | 4 | | Phase 3 coding, debugging | |
| 2021 | Nov | 22 | 3 | | Phase 4 coding and testing | |
| 2021 | Nov | 23 | 2 | | Phase 5 coding | |
| 2021 | Nov | 24 | 5 | | Phase 5, comparing results, making up the project report | |
|  |  |  |  | |  | |
|  |  |  |  | |  | |
| **HOURS TOTAL** | | | | 27 | |  |