java III PQ1

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A picture containing graphical user interface

Description automatically generated

JAVA III

5/05/21

Design specification

Analysis

1. Purpose (Context)

I have been hired as the new programmer by the Jupiter Mining Corporation to produce a set of programs for their staff. I will be expected to consider my lecturer a key stakeholder and may ask questions to elicit information, this can then be documented and added to the specification document. – The project needs to include a nested class that shows countries with cities inside. These countries must be stored in a doubly linked list with no less than four countries in it. This project will be created in IntelliJ using the command line application as well as junit testing.

1. Stakeholders (Scope)

The key Stakeholder within this project includes my lecturer who will act as the project manager, sales representative, software developers, technical writers, systems analysts, Jupiter mining corporations management who will be requested for permission to perform a survey asking Jupiter staff about their current systems critical feedback response. The survey will not be mandatory. Client meetings with Jupiter mining will be organised by the project manager which will determine the suitable functionality of the future program addressing the company’s needs. Stake holders also include miners/health and safety professionals who will monitor this information for safety.

2. Design Procedure (methodology)

Design patterns include previous projects developed by software developers across companies. Patterns will determine the nature of the design as well as the software tools used too develop the program. Software development companies use a specific software development lifecycle. For this project the most modern software development lifecycle will be chosen which is the agile methodology. The steps within the agile lifecycle are Planning, analysis, Design, Implementation, Testing and Maintenance. The cycle’s steps can be completed multiple times. This keeps the cycle up to date with client expectations.

1. Software Tools

Interviews with Jupiter mining staff and management (lecturer) have revealed that the agile methodology is the best methodology for this project. The software tools that will be used for the development of this project are used for the steps within the agile development methodology which are Planning, analysis, Design, Implementation, Testing and Maintenance. Listed below in bullet points are the software tools which will be used too develop the program. Sublime is used as well.

* Microsoft Word (2021)
* MS Project (2021)
* IntelliJ Console Application (2019)
* Google Chrome (research)
* Website Draw.io

1. Core design

Diagram

Description automatically generated

1. Implementation Plan

The implementation plan for the project is to create an immediate prototype labled Apha1.0. Once the alpha version has been released any bugs will be reported and fixed releasing versions. Once the program has become error free a new version Beta will be released with added features and so forth until the final version of the program can be released. Please see GitHub for more of this plan, using the name IsChus the email [Atuitupou2@gmail.com](mailto:Atuitupou2@gmail.com). The system specifications for use of this program will be any system that is capable of installing windows/Mac.

1. Testing Tables

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| INPUT Country | INPUT city | NODE  HEAD | NODE TAIL | EXPECTED OUTPUT | OUTPUT |
| France | Paris | - | NULL | France, Paris | France, Paris |
| Japan | Tokyo | - | France, Paris | France, Paris | Japan, Tokyo |
| Germany | Berlin | - | Japan, Tokyo | Germany, Berlin | Germany, Berlin |
| Angola | Luanda | - | Germany, Berlin | Angola, Luanda | Angola, Luanda |
| China | Beijing | - | Angola, Luanda | China, Beijing | China, Beijing |
| Greece | Athens | - | China, Beijing | Greece, Athens | Greece, Athens |
| Portugal | Lisbon | - | Greece, Athens | Portugal, Lisbon | Portugal, Lisbon |
| Samoa | Apia | - | Portugal, Lisbon | Samoa, Apia | Samoa, Apia |

\*Testing if each node is correct

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| INPUT Country | INPUT city | NODE AHEAD | NODE BEFORE | EXPECTED OUTPUT | OUTPUT |
| France | Paris | Japan Tokyo | NULL | France, Paris | France, Paris |
| Japan | Tokyo | Germany, Berlin | France, Paris | France, Paris | Japan, Tokyo |
| Germany | Berlin | Angola, Luanda | Japan, Tokyo | Germany, Berlin | Germany, Berlin |
| Angola | Luanda | China, Beijing | Germany, Berlin | Angola, Luanda | Angola, Luanda |
| China | Beijing | Greece, Athens | Angola, Luanda | China, Beijing | China, Beijing |
| Greece | Athens | Portugal,  Lisbon | China, Beijing | Greece, Athens | Greece, Athens |
| Portugal | Lisbon | Samoa, Apia | Greece, Athens | Portugal, Lisbon | Portugal, Lisbon |
| Samoa | Apia | NULL | Portugal, Lisbon | Samoa, Apia | Samoa, Apia |

\*Testing if linked list is correct.

7. Debugging Information

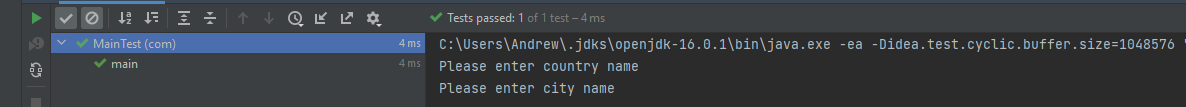
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\*Adding the first set of country and city names which is expected in the head node

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|  |
|  |

\*Adding the second set of country and city which is expected in the tail node

1. Junit Testing



\*Please see the junit testing file within the project for test information.