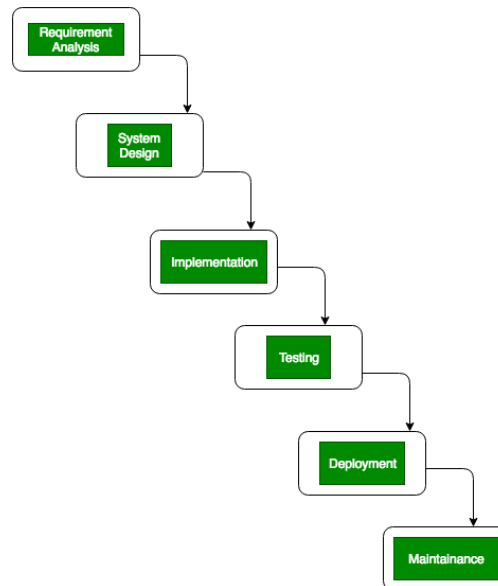


Edson Paolo Tenorio

Assignment 2

Waterfall Model

a



b

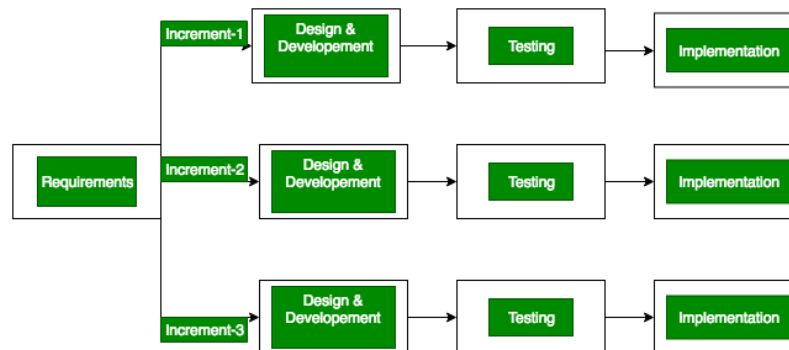
Requirement Analysis is when the software development team meets to discuss the requirements for the project the team will be working on. This would take less than a day to complete. System Design is when the team lays out a design and plan for how they will complete the project. This would take a few days at most to do. Implementation is putting the design and plan into fruition. This is the longest part. It could be weeks or up to a month for the university scheduling system. Testing is when the project is checked for any issues or bugs. This would take weeks but likely no longer than the time it took for Implementation. Deployment is when the project is published to be used for whatever purpose it was planned for. This is done after the testing is done and would take less than a day. Maintenance is ensuring that the project runs as needed and adding changes or revisions if needed. This happens over time when the project is deployed and has no time limit.

c

In the context of the university scheduling system, Requirement Analysis would be reviewing the given project details. System Design would be laying out a plan on how to complete the project using the chosen programming language. Implementation would be putting the plan into fruition. Testing would be done with dummy data. All the methods and functionality created would be tested to ensure they work as designed. Deployment would be submitting the project. Maintenance would be making any necessary corrections/improvements to the university scheduling system.

Incremental Development Model

a



b

Requirements is when the software development team meets to discuss the requirements for the project the team will be working on. This would take less than a day. Increment-X is the version of the project. Increment-1 is a very basic version of it that is Designed & Developed, Tested, and lastly Implemented. Then Increment-2 is started and is Designed & Developed, Tested, and lastly Implemented again. This cycle is continued as many times as needed for the project to be completed and maintained. This cycle would take weeks or months to complete as each increment builds on the previous. Its duration would depend on the size of the project.

c

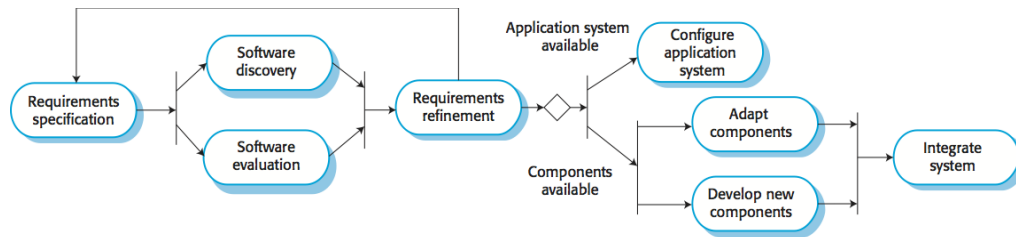
The subsystem that would be developed and tested first would be setting up the classes, their methods, and the database. To test it, one object per class would be created with dummy data. Then in the main function, every method will be called and checked to see if they work as intended.

In the second version, a UI will be created for the data and method functionality to be applied to. To test it, all the functionality in the UI will be tested to ensure that the result of each method is as expected.

In the final system, the dummy data will be replaced with real data. Testing it will be the same as it was for the second version. However, because there is much more data and objects, the testing will have to be much more thorough.

Integration and Configuration Model

a



Requirements Specification is when the software development team meets to discuss the requirements for the project the team will be working on. This would take less than a day. Software Discovery and Software Evaluation is when the team researches for any available existing software that can be integrated into the project. This would take several days to over a week depending on how much can be found in the research. Requirements Refinement is when the team meets again to discuss the requirements for the project. However this time, they go over the limitations of the newfound software in regards to the project. This would take less than a day. If there is an application system available to use, the team configures it so that it can be applied to the project. If there are components available to use, the team will adapt the components as needed or develop new components that will be integrated into the project. This would take weeks or months to complete as it depends on how many components or systems are being integrated.

b

[1] M. Goldstein, "The Top Python GUI Frameworks for Developers in 2023," Built In, May 12, 2023. [Online]. Available: <https://builtin.com/software-engineering-perspectives/python-gui>. [Accessed: May 23, 2024].

This is a list of 10 libraries for python for developing GUIs. Any of these can be used to create the UI for the scheduling system. To be applied, extensive research must be done to see how the libraries works and how it can be adapted to be integrated into our project.

[1] Apple Inc., "Class Scheduling - FoundationDB," May 6, 2023. [Online]. Available: <https://apple.github.io/foundationdb/class-scheduling.html>. [Accessed: May 23, 2024].

FoundationDB is a free and open-source database developed by Apple. This site shows how it was used to create a class scheduling system in Python similar to the one assigned. In the tutorial, many coding techniques can be adapted to be applied into our project if the database is used.

The incremental development would be best for the university scheduling system. This is because the increments allow the opportunity to adjust to any changes much more easily than the other models. The waterfall model is too structured for most projects as the wants and needs for a project can change over time depending on the project. The integration and configuration model could work however I find that executing a design created by yourself is much more beneficial than taking the time to find libraries and tools and then taking more time to understand how they work and then taking more time to see if they can be used in your own project with the real chance that it may not be compatible with project.