1-4 ePortfolio Selection and Refinement Plan

CS-499-H6771 Computer Science Capstone 22EW6

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Module 1-4 ePortfolio Selection and Refinement Plan

Initially my plan for to fulfill this portion of the ePortfolio as well as to demonstrate my skills in three

Categories within the Computer Science: software design/ engineering data structures, database, and algorithms. I will discuss the work as well as the proposed enhancements that I have been instructed.

Prompt

The artifacts that I have chosen for each category that will accurately showcase my growth within the Computer Science Program. The artifacts that are selected demonstrate my skills within the referenced key category. These artifacts will also illustrate some core skills across key categories.

Software Design and Engineering

Artifact: Prototype with Data

Origin: CS319 UI/UX Design and Development

Enhancement Plan: This time around I wanted to design a porotype that was just simplistic in design, the home screen on the borrower's device, they will be shown important updates that pertain to the loan in question. So, for example the changes would include terms, loan payback options, funding progress, days pending on loan request. This update would vary depending on whether the said borrower has an active request on a loan and or if the borrower is actively working on a loan payback.

Skills: This prototype will only include the home screen; I have included the navigational buttons towards the bottom of the screen so that the user will be able to navigate in between screens

without any issues. The home screen, the updates are shown so that the borrowers can have access to the information about KIVA with important information available. Since the need for simplicity is apparent, I integrated the information about KIVA with the important updates concerning the user, so that the information is all in one place of the user

[CS-319-T5612] Demonstrate an ability to use a well-founded and innovative techniques, skills and tools in computing practices to implement a solution that will deliver value to accomplish a specific goal.

Pseudocode:

1. Improvement of code function of a database KIVA design.
2. Add the ability to track and update users on loan application
3. Improve the source code functionality between the user and database.

Algorithm and Data Structures

Artifact: Authentication and Monitoring System

Origin: IT145 Foundation in Application Development

Enhancement plan:

To expand the application capabilities by adding a dashboard (monitoring system). According to the user authentication and authorization, it will perform activities in the dashboard to know the activities of the animals in they are care and monitor their living habitats. Add the functionality of reads input from the user and uses system output. Utilizes appropriate control structures for program logic and standard libraries to pull in predefined functionality using the JAVA programming language and run in the computer terminal console. Break the program in proper classes and correctly utilize all included methods within the classes

Skills:

The introduction will demonstrate to our understanding of the algorithm's logic and the relationship between data structures to integrate the essential object-orientated programming elements effectively. To illustrate the skills and concepts of using as well as maintaining JAVA programming sources codes to assemble basic, working programs that effectively incorporate

crucial aspects of object-orientated programming to develop successful programs. The detail of the proper syntax and conventions in terms of their best practice and use in programming. How to debug coding errors by testing existing code, identifying errors, and correcting errors for improved functionality.

Outcomes:

[CS-499-01] Employ strategies of building collaborative environments that will enable a diverse audience to support the organization within the field of Computer Science.

[CS-499-05] Develop a mindset of security that can anticipate the adversarial exploits within the software architecture and design to potentially expose vulnerabilities, mitigated flaws in design, and ensure privacy and or enhance security of the data and resources.

Pseudocode:

1. Show different screens according to the user authentication as well as the authorization
2. Utilize the appropriate control structures for programing logic
3. Design and display a simple GUI dashboard

Databases

Artifact: Salvare Search for Rescue App

Origin: CS340 Client/Server Development

Enhancement plan

The development of this project was created in the Apporto platform. The idea was to reproduce an application within my local VMWare and improve the dashboard GUI. My plan was to refine the corresponding guidelines for the implementing the dashboard that was running on my local VMWare.

Skills:

Demonstrating the understanding of the Python language as well as the integration of MongoDB database through the implementation as well as use of the Python driver PyMongo

and the use and modification of Python framework. Demonstrate the use as well as control of Jupiter Notebook to produce, run and test the Python Scripts.

Outcomes:

[CS-499-03] Evaluate and design the computing solutions that solve any given problem using algorithmic principles and computer science practices and standards that is appropriate to the solution while also managing the trade-offs involved in design choices.

[CS-499-04] The demonstration and the ability to use a well founded and innovative techniques skills, and tools in computing practices to implement computer solutions that deliver value and accomplish industry specific goals

Pseudocode:

1. Documentation to improve the dashboard in different computer environments.
2. Describe the software used in the development of the application.

ePortfolio Overall

Throughout this entire code review of artifacts, my plan is to illustrate the skills of creating a secure coding standard from initiation in a more appealing way to reduce the security risk so that it's not left to the end of the software development cycle. I found that the more complex the application then it is more likely there are to create vulnerabilities. So as a result, all software development processes must be revised within their structure, logic, style, performance, test coverage, design, and readability but most importantly maintain functionality. Although there are some that can be automated checks with the use of a third-party tool, other still require human interaction in order to review and evaluate structure and functionality.

Using specific questions can also help while reviewing code can help focus on the project. By evaluating the codes, we will be able to check for the correct issues. Furthermore, will also help reducing the time allotted to testing. The categories including software design, engineering, algorithms and data structures, illustrating the skills and knowledge acquired by applying the appropriate data structures for effectively organizing the data given the requirements as well as constraints of different problems. Technically the sound algorithms that accurately perform the required functions as well an employ the basic algorithms that share data structures in

development stage that is effective to the computer programs. This would employ an appropriate organizational method when tracking the progress of the software development projects as well as the development of software and system services that are enforced with the security practices and techniques.

When and if possible, a breaking the software into smaller methods to accommodate the needs of each block of code and implement the security techniques though the rectification of the methods behavior.

References

Southern New Hampshire University. (2022, March 4). Module 1-4 ePortfolio Selection and Refinement Plan. Retrieved from Module One: Introduction: Portfolios, Supporting Tools, and Keeping Pace

Southern New Hampshire University. (2022, March 4). CS499 ePortfolio Selection and Software Design Document. Retrieved from Module 1-4 ePortfolio Selection and Refinement Plan

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