Seng 265 Term Portfolio Project

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Q1: Describe your continued learning experience in SENG 265.

Lecture week 1:

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- Learned of Jupyter Notebooks and how they can be great additions to
resumes
- Basics of C with Bill Bird
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Lecture week 2:

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- Development cycle
- How important Git is when it comes to sharing and updating software
worked on by teams of people
- How software development and technological augmentation can improve
the lives of many.
- Lab 1:
    -accessing UVic servers remotely and some basic bash commands
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Lecture week 3:

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- More bash commands and aliases
    - how to move around with cd
    - attributes for ls
    - piping
    - grep to filter for things
- How chatGTP can help with learning bash
- Lab 2:
    - Vim and its functionalities
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Lecture week 4:

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- midterm prep questions
- file permissions and how to change with chmod
- begin assignment 1
- basic c functions like strtok(), scanf(), strcpy()
- Lab 3:
    - Git work flow
    - git add, git commit -m "", git push
    - how to view and access branches
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Lecture week 5:

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- memory addresses and pointers for c
- declare pointer with * and set to memory location of variable with
&
- segmantation fault error occurs when trying to access memory you
don't have access to
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    - file IO for assignment 1
    - Lab 4:
        - Basic c programing and git
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Lecture week 6:

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    - c arrays and strings
    - typedef to give more info about the array EX: typedef int a[10]
    - sending values or pointers into function calls
        - if send value, need to return value if want to access changes
        - if send pointer any changed made in the function will hold for
    rest of program
    -Lab 5:
        - Differences between python and c
        - Basic python programing and pandas library
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Q2: What is the core functionality of Jupyter Notebooks?

Jupyter Notebooks are used for literate programming, a mix of natural language and snippets of code. This allows for Jupyter Notebooks to become vital in recording and sharing information in a meaningful(code wise) yet understandable way(language and logic wise).

Q3: Summarize simple Jupyter Notebook markdown including how to insert links and images?

To insert links you can display the link directly or have a refrence to a link using other text using [text](link).

https://www.youtube.com/

YouTube

To insert images you can can click the **Edit** button in the jupyter notebook tool bar and selected insert image. This will allow you to add any image you put in there.You can also use the HTML img block to add them in but you will need to know the path to the image.

Q4: How can you typeset mathematical formulas including Greek letters using LaTeX Markdown in Jupyter Notebooks?

LaTeX Markdown has commands inside dollar signs. These commands are often mathematical equations, symbols, or greek letters. LaTeX formatting often relies on \begin and \end blocks to organise blocks of text. \ is used to indicate that the following text is related to some command like \sum to get the summation symbol.

Ex: \sum_{n=1}^{\infty} x_i bewteen double dollar signs gives:

$$\sum_{n=1}^{\infty} x_i$$

Q5: What is the history of Unix or Linux?

Linux is a computer operating system created in the early 1990s by Linus Torvalds (a Finnish software engineer) and the FSF. In 1994 the Linux kernel that acted as the core of the operating system and around this time the FSF and an American software developer were trying to create an open source operating system similar to Unix (made in the 1960s). Unlike Linus who was working on the core components

the FSF were working on utilities first and when these utilities were added to the Linux kernel that made a complete operating system.

How prevalent is Unix or Linux in software development today?

While not as popular as Windows or MacOS it is very reliable and accounts for most of the servers we have today.

Q6: What is the core functionality of the Bash command and scripting language?

Bash commands are often typed in a command line interface where these commands are capable of changing files, making new directories, programing throught the use of something like vim, compiling and executing code, and much more. This makes Bash very powerful and useful tool in software development as it allows programmers to interact and change files without the need for a graphical user interface as bash can operate out of the terminal.

Q7: What is your background in the scripting language Bash?

For me personally I have never dabbled in the usage of Bash until this course. I have used the cmd terminal for a few things but nothing of the level that bash is capable of.

How prevalent is Bash in software development today?

Bash is very popular in software development today. This is because Bash with its capabilities became the go to interactive shell for most Linux users, and since most servers today run on Linux a lot of developers rely on Bash to maintain and operate their servers.

Q18: Describe the fundamental differences between C and Python.

	c	python
Type	Compiled	Interpreted
Line end	Requires ;	Nothing
Scope	Uses {}	Uses tabbed lines
Data structures	Arrays, Struct	Lists, Maps, etc
Memory	Can manually set	Automatic

Q19: How challenging were learning C and completing Assignment 1 for you?

The syntax for c is very similar to that of Java, which is the coding language I am most familiar with, so a lot of ideas were simple to remember. The hardest things to grasp were how in c there were no strings and you had to use char[] and pointers. The lack of strings made it hard to manipulate the icalander formatted time and the usage of pointers often tripped me up as I wasn't completly sure what was saved in each variable and how I could access and change the values.

Q20: What are your personal insights, aha moments, and epiphanies you experienced in the first part of the SENG 265 course?

The moment that truly resonated with me from the first part of SENG 265 was during the git introduction lecture and the git process lab. This is when I began to understand the importance of git and why it was that alot of game mod projects and such were released on github. My dad works as a tester so i've seen github being used in the context of his work but it wasn't until the lab where we delved into the git process where I began to understand why git is so redaly used in the industry. This introduction to git and the git workflow has helped me better grasp why the industry operates the way it does and I hope to learn more regarding the git workflow through using it in group projects, and learning about it from future lectures.

Q21: How did you experience chatGPT as a learning tool?

When I use chatGPT when studying I tend to get confirmation that my understanding is correct, that is I tend to use chatGPT to make myself feel more sure that I'm understanding the content correctly. When I use chatGPT for programing I use it to write basic code or programs that I can use to understand a concept or manipulate it to get my desired program output. As a learning tool chatGPT has helped me alot as it speeds up my coding proccess and boosts my confidence that my solution is correct.

Bibliography

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