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#### Homework #4

1. What is the software development lifecycle (SDLC)? Why is it useful?

The software development lifecycle is a process used by industries to design and develop softwares. It is a detailed plan that includes how to develop and maintain softwares. SDLC is useful because it helps the firm to identify the problem, create a plan, build the software, and maintains it. It helps break down the entire software development process into little parts which firms can easily follow. Thus, it promotes the firm to work more efficiently and effectively.

2. Apply one of De Palma's arguments about software – how might the SDLC address one of his concerns?

One of De Palma's argument states that lack of visibility and communications cause people to unable to understand their code. Not understanding the software means that if a problem occurs, the programmers cannot track down the error, which cause most projects to fail. However, using SDLC can drastically improve this situation. SDLC provides a very detailed plain of the development of softwares that allow employees to pinpoint exactly where the error occurred. Thus, they can identify the problem and propose solutions to fix it. This way, SDLC improves the visibility of the code.

3. Describe the type of methodology assigned in Step 1 (structured or agile).

The structured software development lifecycle method has various stages: requirements, design, implementation, verification, and maintenance. It has a strict and linear flow, meaning that it needs to complete each phase before moving on to the next without any overlapping. Once the stage has moved on, there is no going back and no changes can be made. Structured SDLC also relies on information from the previous stages to complete the work.

4. Identify two advantages of this type of methodology.

One advantage is that the structured method is easy to follow. Since the phases are all linear, it acts like a map of the system. Employees can know where they are in the process exactly, which helps them to stay organized and on track.

Another advantage is that the final product will be more complete than other strategies. Since each step in the lifecycle is clearly mapped out, there is less surprises on how the final product

will actually turn out. Furthermore, there is the “verification” step where programmers can test the product and fix the errors, making the outcome clearer.

5. Identify two weaknesses of this type of methodology.

One weakness is that the structured SDLC method can have a longer delivery time compared to other methods such as iterative. This is because structured requires all previous phases to complete before starting the next step, thus, it does not allow multitasking that can speed up the process, and the company has to wait for each step to be finished individually. Furthermore, if a mistake occurs and changes need to be made to previous phases, the company will need to start over since structured does not allow changes, which can increase delivery time.

Another weakness is the lack of flexibility. Since the structured model does not allow any changes to be made for the previous phases, it locks the process in place. Thus, if business plans or market influences need to make changes to previous, they cannot be made because of the linear and strict characteristic of structured methodology.

6. Identify the sources you used to find this information (e.g., textbook, Wikipedia, etc.)?

<https://www.testingexcellence.com/sdlc-methodologies-advantages-disadvantages/>

[https://www.tutorialspoint.com/sdlc/sdlc\\_waterfall\\_model.htm](https://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm)

<https://www.dcssoftware.com/pros-cons-waterfall-software-development/>

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