IT314 - Software Engineering
Lab-1
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LAB1: Selecting Software Process Model

Solution:
1) simple data processing project. -> Waterfall Model
Due to the project's simplicity, the requirements will be provided in advance with little to no revisions. Customers will be able to understand it simply and easily.

2) A data entry system for office staff who have never used computers before.The user interface and user-friendliness are extremely important. -> Prototyping Model
Because the data input system for office workers is a project for total computer newbies and because it has rookie users, the User Interface is crucial for user friendliness, prototyping models can be utilized to meet this demand.
Additionally, the project might be completed with a quick design, the creation of a prototype, and its refinement in accordance with user requirements.

3) A spreadsheet system that has some basic features and many other desirable features that use these basic features. -> Incremental and Waterfall Model
The spreadsheet system is a project with some fundamental components that meet predetermined standards. The waterfall model could be used to meet these software needs. And as it becomes necessary to add new features and make other desirable adjustments, a newer version must be created. An incremental model can be used to do this. Therefore, waterfall and incremental modeling techniques are suitable.

4) A web-based system for a new business where requirements are changing fast and where an in-house development team is available for all aspects of the Project. -> Spiral Incremental Model
The web-based system for new businesses uses a spiral incremental model since the needs change quickly and are vague in nature, allowing for the addition of new capabilities with each iteration by weighing the risk and previous experience. A good project will give the new company visibility and will be able to suggest requirements based on demands.

5) A Web-site for an on-line store which has a long list of desired features it wants to add, and it wants a new release with new features to be done very Frequently.-> Incremental and Prototyping Model
A good user interface with a lengthy list of needed features is required because it is the website of an online store. The incremental architecture makes it simple to add new features when we want to. As a result, incremental models allow for frequent adjustments while prototype models might improve the customer's user experience.

6) A system to control anti-lock braking in a car. -> Waterfall Model
The Waterfall Model is the best suitable general software process model for managing anti-lock braking in automobiles. A safety-critical system is the anti-lock braking system. According to the waterfall approach, the analysis and design requirements must be fully satisfied before the system is implemented in order for the car's anti-locking system to function properly.

7) A virtual reality system to support software maintenance -> Incremental Model
The Incremental Model is the most suitable software process model for virtual reality systems to facilitate software maintenance. The system requirements are constantly changing, making it impossible to predict them before implementation and necessitating intricate software coding.

8) A university accounting system that replaces an existing system -> Waterfall Model
The Waterfall Model is used to create an accounting system for a university that will replace an existing sy

stem. The system needs can be projected as a result of the current system. The specifications are reliabl e and reusable.

9) An interactive system that allows railway passenger to find train times from terminals installed in station s. -> Prototyping Model
The prototype model is the most suitable software design for an interactive travel planning system. The us er's needs could change, thus quick delivery is crucial to put into practice. The prototype model will enabl e developers to concentrate their initial efforts on the most crucial features.

10) Company has asked you to develop software for a missile guidance system that can identify a target accurately. -> Waterfall model
The Waterfall Model can be used to create a missile guiding system with accurate target identification cap abilities. It is a government-funded project for the military with pre-established specifications. All prerequis ites for this application must be met by the deadline.

11) When emergency changes have to be made to systems, the system software may have to be modifie d before changes to the requirements have been approved. Choose a process model for making these m odifications that ensures that the requirements documents and the system implementation do not become inconsistent. ->Incremental Model
Before requirements have been accepted, the systems must be adjusted in order to accommodate emerg ency adjustments. The incremental model can be used to fulfill this requirement.

12) Software for ECG machines. -> Waterfall Model
The waterfall model will be the most appropriate one for creating ECG equipment. As a safety-critical syst em, ECG devices require suitable analysis and design specifications to ensure that measurements are err or-free. Consequently, the Waterfall Model is used to create ECG software.

13) A tiny, clearly defined project with predetermined needs that cannot be amended. The waterfall model can be used to create projects of this nature. As this project is small in scope, a huge team is not necess ary.