LAB 1-IT314

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a) **A simple data processing project.**
   - Model – WaterFall Model
   - Reason – The Waterfall Model is suitable for simple projects with well-defined requirements. Since the project is straightforward and the requirements are clear, following a sequential approach will be efficient.

b) **A data entry system for office staff who have never used computers before. The user interface and user-friendliness are extremely important.**
   - Model – Prototype Model
   - Reason - Because users are unfamiliar with this sort of functionality, they want attractive UI/UX facilities, thus I'll utilise a prototype model in this project.

c) **A spreadsheet system that has some basic features and many other desirable features that use these basic features.**
   - Model – Incremental Model
   - Reason - A spreadsheet system with basic features and additional desirable features: For this project, the Incremental Model is suitable. It allows the development team to build on the basic features and incrementally add the desired features to the system.

d) **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.**
   - Model – Agile Model
   - Reason - I'll adopt an agile model for this project since user needs are changing too quickly, and agile models are better suited for these kinds of functions. Users are involved in the agile at every level of development to produce high-quality software.

e) **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.**
   - Model – Agile - Scrum
   - Reason - Since there will be many new features in this project, I'll be using the Scrum Model, which divides the work into several sprints that begin immediately after the previous sprint is finished. Therefore, it is necessary to deliver updates with new features often.

f) **A system to control anti-lock braking in a car.**
   - Model – Spiral Model
   - Reason - The spiral model works well in this situation since it is a model that focuses on iterative development with risk management because, as stated in the issue statement, this challenge affects human life, thus we have to focus on minimising failures.

g) **A virtual reality system to support software maintenance.**
   - Model – Evolutionary Model

- Reason - Virtual reality systems require continuous improvement and adaptation to evolving maintenance needs, the Evolutionary model will be the best fit for this project.

h) A university accounting system that replaces an existing system.

- Model – WaterFall Model
- Reason - Since we must develop an existing system and are already aware with its features and needs, I will utilise the Waterflow model in this project. We can utilise the waterflow model because we are already aware with the needs and there won't be any further advancements to the current model or criteria. The Waterfall model is therefore the one that fits this sort of system the best.

i) An interactive system that allows railway passenger to find train times from terminals installed in stations.

- Model – Evolutionary Model
- Reason -We can use the evolutionary model because, as stated in the problem, the users may not be very comfortable with the user interface. In order to evaluate the system based on several user trials on a prototype for each of its functionalities and reduce the likelihood of making errors, we may utilise an evolutionary model.

j) Company has asked you to develop software for missile guidance system that can identify a target accurately.

- Model – Spiral Model
- Reason – The spiral model suits the issue statement's high degree of precision, safety, and danger nicely.

k) When emergency changes have to be made to systems, the system software may have to be modified before changes to the requirements have been approved. Choose a process model for making these modifications that ensures that the requirements documents and the system implementation do not become inconsistent.

- Model – Agile Model
- Reason - This system requires frequent modifications to be made, agile model have an advantage of being consistent with the frequent changes, hence we can implement the same.

l) Software for ECG machine.

- Model – Spiral Model
- Reason - This problem contains high accuracy and in some cases it can become fatal. It requires great expertise and near zero chance of error hence we should use Sprial model where each step is rechecked.

m) A small scale well understood project (no changes in requirement will be there once decided).

- Model – WaterFall Model
- Reason - We can utilise the Waterfall approach for this project since there won't be any modifications to the requirements, and it is ideal for projects with clear needs and few potential changes.