IT314 - Software Engineering
Lab 1

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A) A simple data processing project.

Waterfall Model:
As mentioned in the problem, It is a simple problem so it has limited complexity so a waterfall model would be the most appropriate.

B) A data entry system for office staff who have never used computers before. The user interface and user-friendliness are extremely important.

Prototyping Model :
As mentioned in the problem, We require a less complex user interface and user friendly model so Prototyping model would be the best.

C) A spreadsheet system that has some basic features and many other desirable features that use these basic features.

Incremental Model :
As mentioned in the problem, This problem already has some features and we want to add some new features on the base version so the most suitable would be an incremental model.

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.

Agile Model :
As mentioned in the problem, the Agile model provides rapid updates and great flexibility which are required by the current client. Hence Agile is the best approach here.

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.

Incremental Model :
As mentioned in the problem, We will have to add new features very frequently so to keep the update cost low we can use the incremental model.

F) A system to control anti-lock braking in a car.

Spiral Model :
As mentioned in the problem, It involves risk to human life so we have to focus on making failures as low as possible so the spiral model fits best according to the situation.

G) A virtual reality system to support software maintenance.

Incremental Model :
As mentioned in the problem, VR is the technology that is evolving so we don't have a clear set of instructions, so it has to be updated frequently. so the Incremental model fits best here.

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

Waterfall Model :
As mentioned in the problem, the university accounting system is already set so the instruction set given to us is already defined so a waterfall model would be most appropriate.

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

Evolutionary Prototyping Model:
As mentioned in the problem, Users here are not trained or experienced here so UI should be user friendly and the model has to be trained based on multiple user trials on a prototype for each of its functionalities hence the evolutionary prototyping model is used here.

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

Spiral Model :
As mentioned in the problem, It requires safety, low risk and high preciseness so the spiral model fits best here.

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.

Agile Model :
As mentioned in the problem, this system requires frequent changes to be made. Agile models can be consistent with frequent changes and it fits the best.

L) Software for ECG machines.

Spiral Model :
As mentioned in the problem, It requires high accuracy and it can be a life and death. It means zero chance of error is there so the spiral model fits best here.

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

Waterfall Model :
As mentioned in the problem, since it is a small and well understood problem it is always beneficial to use the waterfall model.