

Software System Design and Implementation - Assignment II

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Q 1.

Ans : There are various types of applications which require specialized software techniques as they have different requirements. For example, real-time systems like air traffic control are required to respond instantly, as a result of which these systems undergo testing regularly. Embedded systems like washing machines do not require high-level programming. On the other hand, e-commerce platforms are required to adapt quickly to user demands, so methods like incremental development allow features to be added step-by-step based on feedback.

Q 2.

Ans : The idea of certifying engineers like doctors or lawyers has its advantages and disadvantages. The certification makes sure there is accountability, ethics and transparency especially in areas where if a software malfunctions there are serious consequences. Establishing a certification for engineers and doctors will definitely increase trust and credibility for these professions. However, the software industry changes at a rapid rate making it almost impossible to establish a certification which is common for all.

Q 3.

Ans : Incremental development is the best approach as it allows the system to deliver fast updates and user feedback to refine the product. However, this approach does not work for real-time systems where strict timing and reliability are critical. In systems such as these any delay or instability can lead to disasters for example with devices such as pacemakers or autonomous vehicles.