Quiz 2 Solutions

Question 1: Government Defense Agency - Missile Control System

Scenario:

A government defense agency has contracted your software company to develop a missile control system. This system must comply with strict safety regulations, undergo rigorous testing, and have zero tolerance for errors. Each phase must be thoroughly reviewed and verified before moving to the next stage. Additionally, due to the high-risk nature of the project, any design flaws or defects found later in development could result in catastrophic failure, making early validation of requirements and design non-negotiable. The project must follow a structured, phase-by-phase approach with predefined test cases for each stage, ensuring that every requirement is validated before coding begins. Once development starts, no major changes to the design or requirements are allowed.

Question:

Which SDLC model should be chosen for this project, and give 3 reason?

Solution:

The V-Model (Verification and Validation Model) is the most suitable for this project.

Reasons:

1. **Strict Safety Regulations & Zero Tolerance for Errors –** The V-Model ensures that every phase undergoes rigorous validation and testing before moving forward, reducing the chances of defects.
2. **Early Requirement Validation –** This model enforces validation at the requirements stage, preventing costly fixes later in the development process.
3. **No Major Changes Allowed After Development Starts –** Since the V-Model follows a strict, sequential approach, it aligns well with the requirement that no major design or requirement changes can occur after development begins.

Question 2: Large Banking System - Real-time Transactions & Fraud Detection

Scenario:

A large banking system is being developed to support real-time transactions, fraud detection, and customer data management. The system has multiple interconnected components. The strict project deadlines and dependencies mean that waiting for one phase to complete before starting another would significantly delay the launch. Instead, multiple teams work simultaneously on different components, ensuring faster completion and better collaboration.

Question:

Which software process flow is the suitable approach for this project, and why?

Solution:

The Parallel Flow is the most suitable for this project.

Reasons:

1. **Parallel Development of Multiple Components –** This model allows different teams to work on various components simultaneously, ensuring that the system is developed faster.
2. **Handling Interconnected Components Efficiently –** The concurrent approach ensures that different modules of the banking system (e.g., transactions, fraud detection, customer data) are integrated smoothly without waiting for one phase to finish.
3. **Better Collaboration & Shorter Deadlines –** Since strict deadlines exist, the concurrent process allows different teams to collaborate in parallel, reducing delays and improving efficiency.