Tutorial 3 Solutions

Solution to Exercise 1

Task Description	SDLC Phase
1. Writing the system design document, including details for the database and user interface.	System Design
2. Running structured tests to ensure all system components work together properly.	Tests
3. Evaluating technical feasibility and financial justification for a new system request.	Preliminary Analysis
4. Writing the actual software code based on the system design document.	Programming
5. Converting old system data and providing user training on the new system.	Deployment

Solution to Exercise 2

Description	Term/Methodology
1. Focuses on quickly building a working model and using user feedback to update it.	**RAD**
2. A change in strategy (or idea) decided by the Lean development team based on MVP feedback.	**Pivot**
3. This methodology is better suited for **large, resource-intensive projects**.	**SDLC**
4. A set of methodologies that use **incremental, iterative changes** released within a **timebox**.	**Agile**
5. The design stage is characterized as **Interactive**, involving user representatives.	**RAD**

Solution to Exercise 3

Term	Definition / Key Feature
1. Integrated Development Environment (**IDE**)	**C.** A software tool that provides an environment with a code editor, a compiler, and a debugging tool for programmers
2. **Unit Testing**	**B.** A structured set of tests to evaluate different parts of the code to detect errors or bugs
3. **CASE Tool**	**A.** A tool that allows a designer to develop software with little or no programming by writing code for them
4. **Iterative Development**	**D.** An approach where the complete set of system requirements is often unknown at the start of the project.

Solution to Exercise 4

Scenario	Implementation Methodology
1. A government agency must upgrade its email system but cannot risk any downtime, requiring a seamless backup plan.	**Parallel Conversion**
2. A large international retailer wants to test its new inventory management system in one small regional warehouse before rolling it out globally.	**Pilot**
3. A startup needs to launch its new system as quickly and cheaply as possible, accepting a higher level of risk.	**Direct Switching**

Solution to Exercise 5

1. What is the primary objective of the **Lean methodology's MVP** (Minimum Viable Product)?
   - The objective is to create a **functional application with just enough functionality to demonstrate the idea** behind the project, which is then given to potential users for evaluation and feedback.
2. During the **Tests** phase of the SDLC, what is the specific purpose of **User Acceptance Testing (UAT)**?
   - The purpose of UAT is to **allow users to test the system to ensure it meets their standards**.
3. What is the primary difference between a **Compiler/Interpreter** and a **Debugging Tool** within an IDE?

- The **Compiler or Interpreter** converts the source code into executable machine language , whereas the **Debugging Tool** is used to identify and fix errors (or bugs) that exist in the code.

4. Besides fixing reported bugs, name one other key activity that occurs during the **Maintenance** phase of the SDLC.
    - Another key activity is the **evaluation and implementation of new feature requests** , or ensuring the system remains aligned with business priorities and continues to function correctly.
5. Why is **Change Management** considered a critical component of IT monitoring when transitioning to a new system?
    - Change Management is critical because it ensures that proposed changes are **communicated before they occur** and that plans are made to minimize the negative impact of the change across the organization.