Assignments by Siddramappa L

Assignment 1: SDLC Overview - Create a one-page infographic that outlines the SDLC phases (Requirements, Design, Implementation, Testing, Deployment), highlighting the importance of each phase and how they interconnect

Solution: The Software Development Process

The software development process is a structured approach to planning, creating, deploying, and maintaining software. It involves a series of interconnected phases, each with its own objectives, activities, and importance.

Phases:

1. **Requirements**
   - **Objective:** Define what the software should do.
   - **Key Activities:**
     - Gather requirements from stakeholders.
     - Document functional and non-functional requirements.
     - Analyze feasibility.
   - **Importance:** Ensures a clear understanding of what is needed, preventing scope creep and miscommunication.

2. **Design**
   - **Objective:** Plan the software structure.
   - **Key Activities:**
     - Create architectural design.
     - Design database schema.
     - Develop detailed technical specifications.
   - **Importance:** Provides a blueprint for development, ensuring all components will work together seamlessly.

3. **Implementation**
   - **Objective:** Write the code and build the software.
   - **Key Activities:**
     - Develop and integrate modules.
     - Follow coding standards.
     - Perform initial debugging.
   - **Importance:** Translates designs into a functional software product.

4. **Testing**
   - **Objective:** Ensure the software is defect-free.
   - **Key Activities:**
     - Conduct unit, integration, and system testing.
     - Perform user acceptance testing (UAT).
     - Identify and fix bugs.
   - **Importance:** Verifies that the software meets requirements and works as intended, ensuring quality and reliability.

5. **Deployment**
    - **Objective:** Release the software to users.
    - **Key Activities:**
        - Plan and execute deployment.
        - Provide user training and documentation.
        - Monitor and maintain post-deployment.
    - **Importance:** Delivers the product to users and ensures it operates smoothly in the live environment.

Interconnection of Phases:

The software development process is not a linear sequence. These phases are interconnected and work together to create a holistic approach. Here's how:

- **Sequential Flow:** Each phase builds upon the previous one. Requirements define what's needed, the design plans how to build it, implementation creates the software, testing ensures it works as planned, and deployment delivers it to users.
- **Feedback Loops:** There's continuous feedback between phases. Information from testing may reveal missing requirements, leading back to the requirements phase for adjustments.
- **Iterative Process:** Phases can be revisited and refined as needed. New requirements may emerge during development, prompting a return to the design phase.

This cyclical approach allows for continuous improvement and ensures the software remains aligned with user needs throughout the development lifecycle.