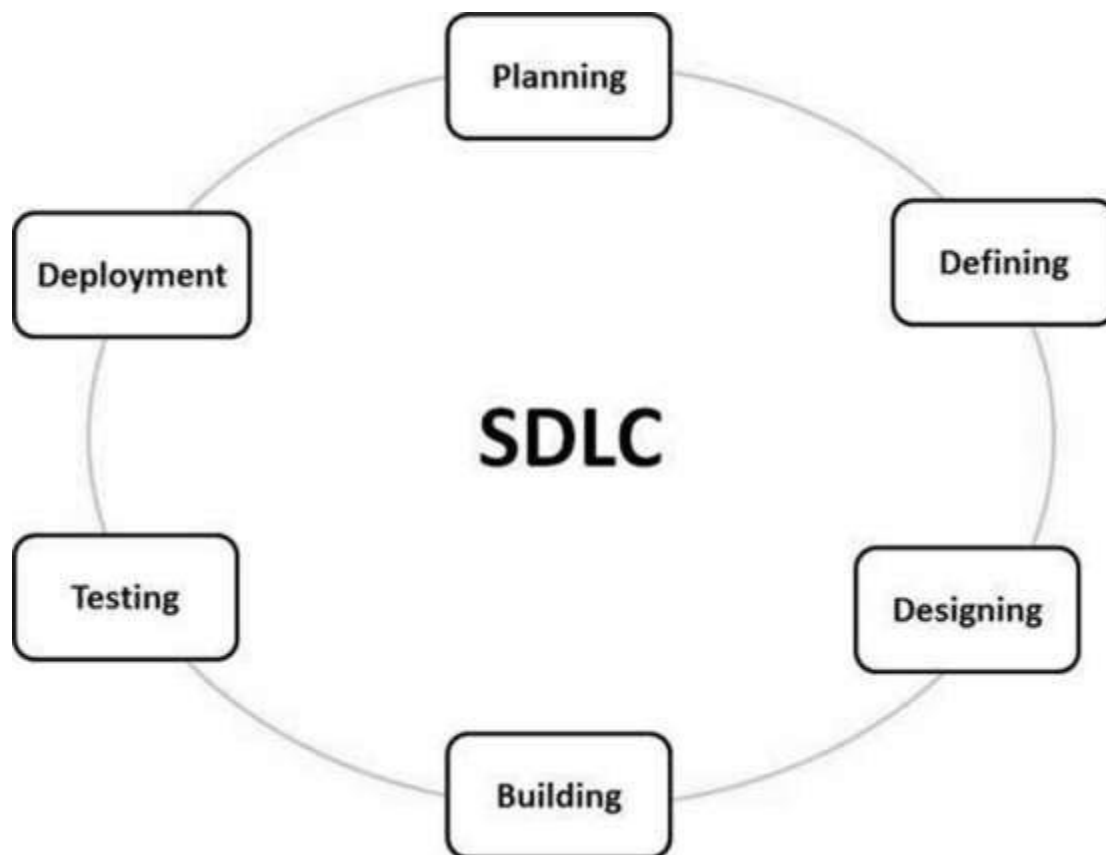**Assignment 1:** SDLC Overview - Create a one-page infographic that outlines the SDLC phases (Requirements, Design, Implementation, Testing, Deployment), highlighting the importance of each phase and how they interconnect.

SOFTWARE DEVELOPMENT LIFE CYCLE:

SDLC or the Software Development Life Cycle is a process that produces software with the highest quality and lowest cost in the shortest time possible. SDLC provides a well-structured flow of phases that help an organization to quickly produce high-quality software which is well-tested and ready for production use

Requirements Phase:

- Identify stakeholders' needs and expectations.
- Define project scope, objectives, and constraints.

Importance:

- Sets the foundation for the entire project. Clear requirements ensure alignment between stakeholders and developers.

Design Phase:

- Create architectural, system, and detailed designs.
- Define data structures, algorithms, and interfaces.

Importance:

- Transforms requirements into a blueprint for development. A well-designed system ensures scalability, efficiency, and maintainability.

Implementation Phase:

- Write code based on design specifications.
- Develop and integrate components/modules.

Importance:

- Brings the design to life. Skilled implementation ensures the product functions as intended and meets quality standards.

Testing Phase:

- Conduct unit, integration, system, and acceptance testing.
- Identify and fix defects.

Importance:

- Validates the functionality and quality of the product. Rigorous testing reduces the likelihood of bugs and ensures a reliable end product.

Deployment Phase:

- Release the product to users or clients.
- Monitor performance and gather feedback.

Importance:

- Marks the transition from development to real-world use. Successful deployment ensures user satisfaction and allows for continuous improvement.

- Each phase of the SDLC is crucial for delivering a successful software product. Collaboration and communication among stakeholders, designers, developers, testers, and users are essential for seamless progression through the phases.