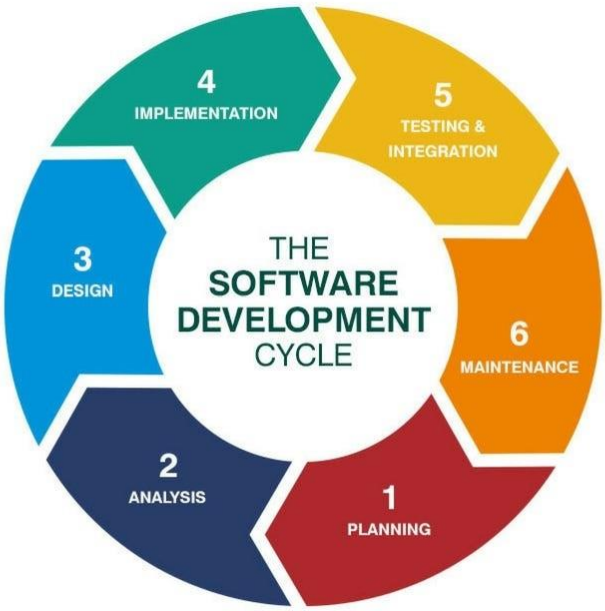
Assignment 1 – Day 2

1. 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.



SDLC is a process used by software industry professionals to design, develop, and test high-quality software.

Assignment 2

2. Develop a case study analyzing the implementation of SDLC phases in a real-world engineering project. Evaluate how Requirement Gathering, Design, Implementation, Testing, Deployment, and Maintenance contribute to project outcomes.

Phases of SDLC:

- **Requirements:**
  - Description: Gathering and documenting the functional and non-functional requirements.
  - Importance: Clear requirements ensure that the project meets the needs of the users and stakeholders.
  - Icon: Checklist or document icon.
- **Design:**
  - Description: Architectural design and detailed design of the system.

    - Importance: A well-thought-out design reduces the risk of errors and rework.
    - Icon: Blueprint or design layout icon.
- **Implementation:**
    - Description: Coding and converting design into a functional software application.
    - Importance: Actual creation of the software happens here; it's where the project comes to life.
    - Icon: Coding or development icon.
- **Testing:**
    - Description: Verifying that the software meets all requirements and identifying defects.
    - Importance: Ensures the quality and functionality of the software, minimizing post-deployment issues.
    - Icon: Bug or checkmark icon.
- **Deployment:**
    - Description: Releasing the final product to users and deploying it in the production environment.
    - Importance: The software is made available to users, fulfilling the project's purpose.
    - Icon: Rocket or launch icon.
- **Maintenance:**
    - Description: Ongoing support and updates after the software is deployed.
    - Importance: Ensures long-term success and adaptability of the software.
    - Icon: Wrench or gear icon.

Interconnection of Phases:

- Arrows or flowchart showing the sequence and feedback loops between phases.
- Emphasize how each phase relies on the previous one and impacts the next.

Assignment 3

3.Research and compare SDLC models suitable for engineering projects. Present findings on Waterfall, Agile, Spiral, and V-Model approaches, emphasizing their advantages, disadvantages, and applicability in different engineering contexts.

Waterfall Model:

- **Description:**
    - Linear and sequential approach.
- **Advantages:**
    - Simple and easy to understand.
    - Clearly defined stages and deliverables.
- **Disadvantages:**
    - Inflexible to changes.
    - Late testing phase can lead to costly fixes.
- **Applicability:**

    - Suitable for projects with well-defined requirements and low risk of changes.

Agile Model:

- **Description:**
    - Iterative and incremental approach with a focus on collaboration and customer feedback.
- **Advantages:**
    - Flexible to changes.
    - Frequent delivery of functional software.
- **Disadvantages:**
    - Requires high customer involvement.
    - Can be less predictable in terms of scope, time, and cost.
- **Applicability:**
    - Ideal for projects with evolving requirements and where quick delivery is valued.

Spiral Model:

- **Description:**
    - Combines iterative development with risk assessment.
- **Advantages:**
    - Emphasizes risk management.
    - Iterative approach allows for refinement at each phase.
- **Disadvantages:**
    - Can be complex to manage.
    - May be more costly due to extensive risk analysis.
- **Applicability:**
    - Suitable for large, complex, and high-risk projects.

V-Model:

- **Description:**
    - An extension of the Waterfall model with a focus on validation and verification.
- **Advantages:**
    - Each development phase has a corresponding testing phase.
    - Clear and disciplined approach.
- **Disadvantages:**
    - Inflexible to changes.
    - Early test planning can be challenging.
- **Applicability:**
    - Best for projects with well-defined requirements and a strong focus on testing.

Conclusion:

- Recommendations on selecting the appropriate SDLC model based on project characteristics and requirements.