ASSIGNMENT : 2

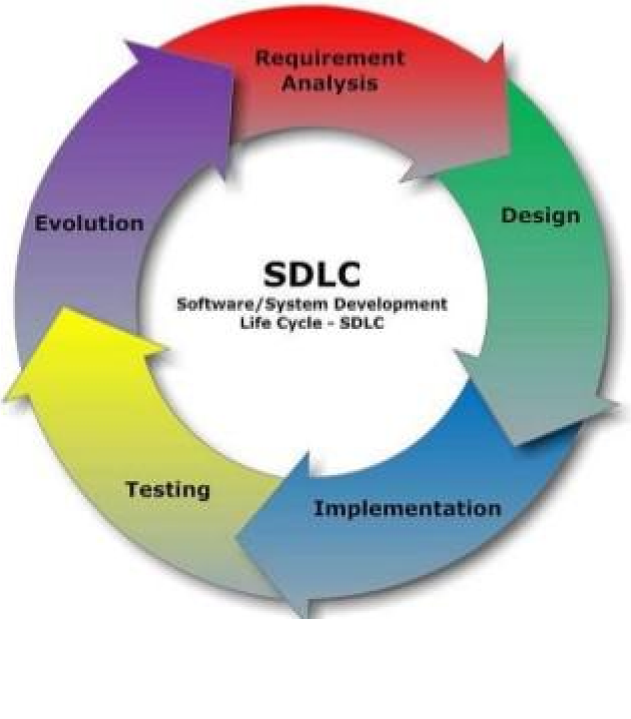
AIM : Study the complete Software Development Life Cycle (SDLC) and analyze various activities conducted as a part of various phases. For each SDLC phase, identify the objectives and summaries outcomes.

ANS:

SDLC definition :

The software development life cycle (SDLC) is a framework defining tasks performed at each step in the software development process. SDLC is a structure followed by a development team within the software organization. It consists of a detailed plan describing how to develop, maintain and replace specific software. The life cycle defines a methodology for improving the quality of software and the overall development process.

This term is also known as the software development process.



Agile process model :

Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

Following are agile Manifesto principles

- **Individuals and interactions** - in agile development, self-organization and motivation are important, as are interactions like co-location and pair programming.
- **Working software** - Demo working software is considered the best means of communication with the customer to understand their requirement, instead of just depending on documentation.
- **Customer collaboration** - As the requirements cannot be gathered completely in the beginning of the project due to various factors, continuous customer interaction is very important to get proper product requirements.
- **Responding to change** - agile development is focused on quick responses to change and continuous development.

Agile process workflow :

- **Requirements:**

Objective - Planning for the quality assurance requirements and identification of the risks associated with the project.

Summary - It is performed by the senior members of the team with inputs from the customer, the sales department, market surveys and domain experts in the industry. This information is then used to plan the basic project approach and to conduct product feasibility study in the economical, operational, and technical areas.

- **Development** - Design and develop software based on defined requirements

Once the requirement analysis is done the next step is to clearly define and document the product requirements and get them approved from the customer or the market analysts. This is done through SRS. Software Requirement Specification document which consists of all the product requirements to be designed and developed during the project life cycle.

- **Testing** - QA (Quality Assurance) testing, internal and external training, documentation development

The testing activities are mostly involved in all the stages of SDLC. However this stage refers to the testing only stage of the product where products defects are reported, tracked, fixed and retested, until the product reaches the quality standards defined in the SRS.

- **Delivery** - Integrate and deliver the working iteration into production

Once the product is tested and ready to be deployed it is released formally in the appropriate market. The product may first be released in a limited segment and tested in the real business environment.Then based on the feedback, the product may be released as it is or with suggested enhancements in the targeting market segment. After the product is released in the market, its maintenance is done for the existing customer base.

- **Feedback** - Accept customer and stakeholder feedback and work it into the requirements of the next iteration

Agile model Pros and Cons :

Pros:

- It is realistic approach to software development.
- Promotes teamwork and cross training.
- Resource requirements are minimum.
- Delivers early partial working solutions.
- Little or no planning is required.
- Easy to manage.
- Gives flexibility to developers

Cons :

- Not suitable for handling complex dependencies.
- More risk of sustainability,maintainability and extensibility.
- Depends heavily on customer interaction,so if customer is not clear,team can be driven in the wrong direction.
- Transfer of technology to new team members may be quite challenging due to lack of documentations.