SOFTWARE DEVELOPMENT LIFE CYCLE

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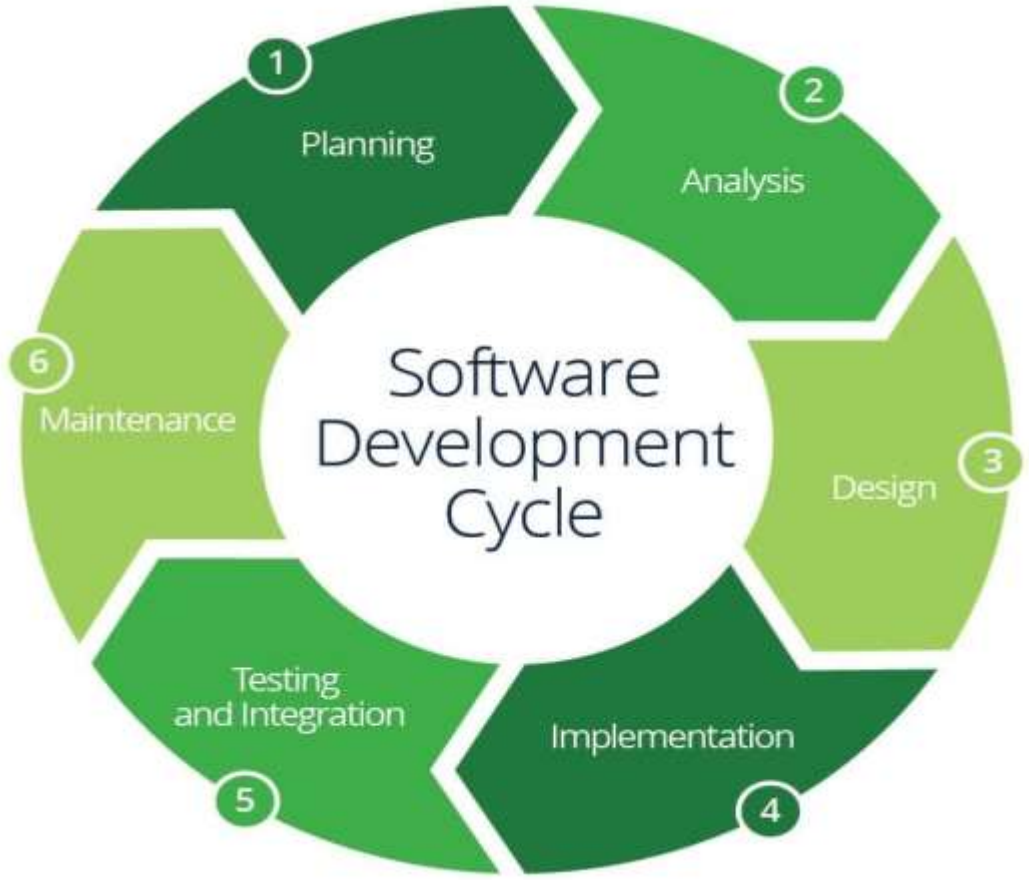
SDLC:

- It is a structured Process that software developers follow to design, develop, test and deploy software applications.
- The main goal of SDLC is to produce high quality software that meets customer requirements.
- There are 7 phases of SDLC that guide the software development process.

Phases of SDLC:



Phase 1: Planning

- Define project scope, goals
- Identify stakeholders and their roles
- Determine resources and budget

Phase 2 : Analysis

- Gather requirements from stakeholders
- Define functional and non-functional requirements
- Create use cases and user stories

Phase 3 : Design

- Create architecture and system design
- Develop user interface and user experience designs
- Plan testing and quality assurance

Phase 4 : Implementation

- Write code and develop software
- Integrate third-party libraries and services
- Conduct unit testing and integration testing

Phase 5 : Testing

- Plan and execute various testing types (e.g., system, acceptance, regression)
- Identify and fix defects
- Conduct performance and security testing

Phase 6 : Deployment

- Plan and execute deployment to production
- Configure and set up infrastructure
- Monitor and troubleshoot issues

Phase 7 : Maintenance

- Provide ongoing support and maintenance
- Fix defects and make updates
- Continuously improve and refine the software

SDLC Models:

- **Waterfall Model:**The Waterfall model, also known as the linear-sequential life cycle model, is primarily a linear project management approach. It involves a step-by-step process for developing software applications.Phases of the Waterfall SDLC Model are Requirement,analysis,design,coding and implementation,testing,operation and development,maintenance.

  →used in software testing,project planning,creating multiple projects etc..

- **V Model:**The V-model, is also known as Verification and Validation model,it extends the traditional Waterfall model by aligning development (verification) and testing (validation) and stages.

  →used in software development,project management,etc..

- **Agile Model:**The Agile model presents a highly practical and adaptive software testing and development approach. Designed to meet the specific requirements of each project.

  →The Advantages of Agile model may include increased customer satisfaction,lower defect rate..

- **Spiral model:**The spiral model is a software development model that is used to manage risk and is often used for large, complex, and expensive projects.
  →The spiral model has several advantages they are customer satisfaction,cost savings etc..
- **Incremental model:**The incremental model is a software development methodology that involves building a system by adding new features, or increments, to an existing system.
  →It's used to develop large and complex systems.