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SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC)

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

STAGE 1: SYSTEM STUDY

- Gives clear picture of what the physical system is.

STAGE 2: FEASIBILITY STUDY

- A feasibility study precedes the decision to begin a project It is an assessment of the practicality of a proposed system.
    - **Operational Feasibility:** It refers to the measure of solving problems with the help of a new proposed system It helps in taking advantage of the opportunities and fulfills the requirements as identified during the development of the project It takes care that the management and the users support the project.
    - **Economic Feasibility:** A project is considered economically feasible when the benefits that will accrue to the broad community are greater than the cost of undertaking the project.

STAGE 3: SYSTEM ANALYSIS

- Forms the basis of agreement between user and developer.
- It is the study of specification, operations, and relationships within the system and outside the system.
- Specifies “What” not “How”.
- Output of this stage: Software Requirement Specification (SRS) document.

STAGE 4: SYSTEM DESIGN

- Moving from problem to solution.
- New system must be designed based on system analysis.
- Output of this stage: System Design Specification (SDS)
    - **General Design:** Components and connectors that should be there in the system.
    - **Detailed Design:** Logic of modules.

STAGE 5: CODING

- Implement the design with simple and easy to understand code.
- Programs must be modular in nature; this makes making changes easy in the future.
- Well-written code reduces testing and maintenance effort.
- Output of this stage: Source-Code.

STAGE 6: TESTING

- Software testing is a process of analyzing software for the purpose of finding bugs.
    - **Unit test:** Performed on individual units of code to ensure that individual unit is current in terms of requirements and functionality.
    - **System test:** Program is tested as whole in this stage. Actual output is matched with the expected output.
    - **User acceptance test:** This test determines if the system completes business requirements.
- Output of this stage: Test Plans and Final (reliable) tested code.

STAGE 7: BUILT RELEASE

- Final phase of SDLC, puts the product into production.
- All the programs are loaded into user's computer.
- User is trained on how to use the program.

STAGE 8: MAINTENANCE

- Eliminate errors in the system.
- Tune the system to any variation.
- If a major change is the system is needed, a new project may have to be set up to carry out the change.
- New project will then proceed through all the above cycles.