e-Lecture

for

B.C.A Sixth Semester
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Information System: Analysis Design & Implementation

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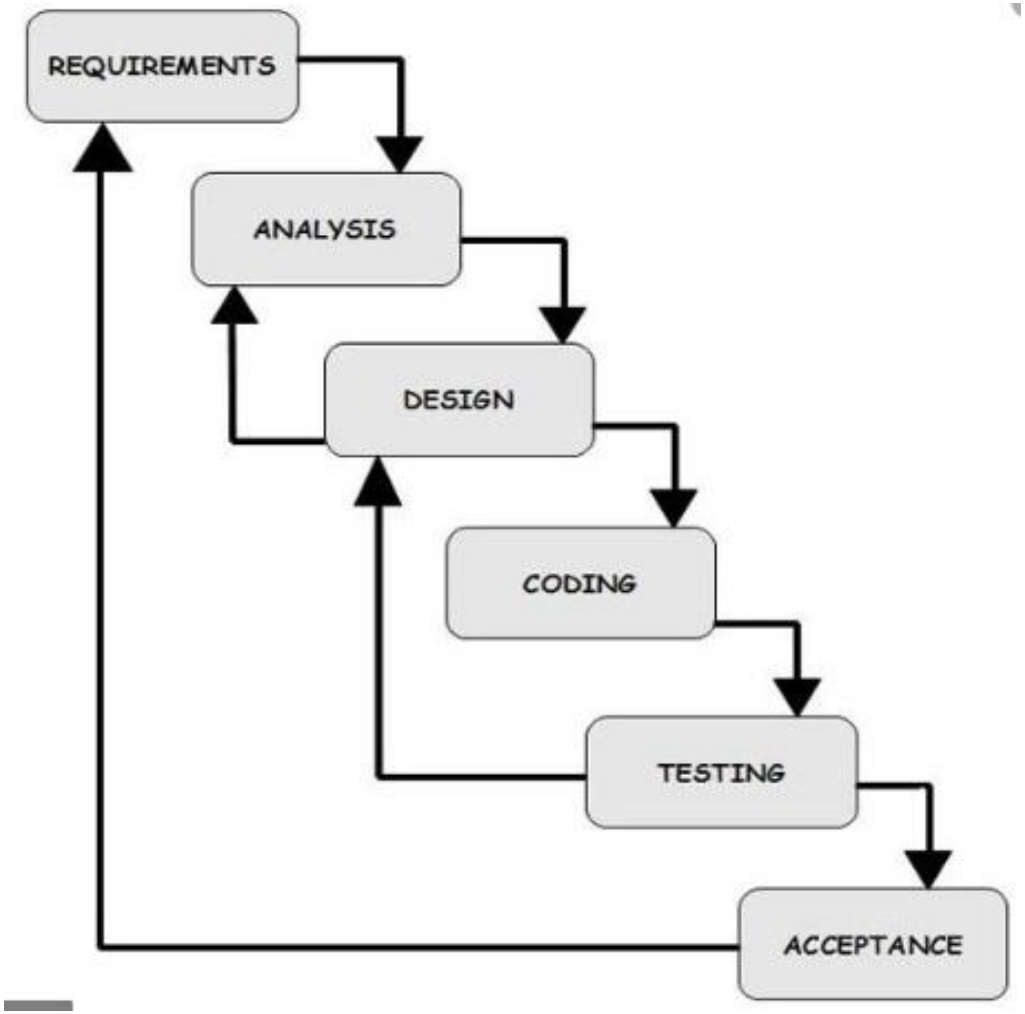
SDLC

- An effective System Development Life Cycle (SDLC) should result in a high quality system that meets customer expectations, reaches completion within time and cost evaluations, and works effectively and efficiently in the current and planned Information Technology infrastructure.
- System Development Life Cycle (SDLC) is a conceptual model which includes policies and procedures for developing or altering systems throughout their life cycles.
- SDLC includes the following activities −
    - ***Requirements***
    - ***Analysis***
    - ***Design***
    - ***Coding***
    - ***Testing***
    - ***Acceptance***

SDLC



Requirement Phase

- This phase starts with gathering the high-level requirements and refining them according to project goals.
- These requirements define the major functions of the intended application or system. Major functions include critical processes to be managed, including mission critical inputs, outputs, and reports.
- The Requirements Phase of the decides *end-user requirements.*

Analysis Phase

- Gathering requirements for the project is the most important part of the SDLC for project managers and internal stakeholders of a project. During this phase, the customer states the expectations of the project including who will use the product, how the customer will use the product, and the specific information included with any special customer requirements related to the software. The customer meets with business managers and analysts to provide the requirements. It's important for the project team to understand the needs of the customer because this information is critical to developing the product the customer requests.
- After the customer provides requirements for the product, the project manager and members of the project team begin to analyze the requirements. The business managers analyze each requirement to ensure the requirement can be included in the software without causing breaks or problems with system functionality.

Design Phase

- The system and software design documents are prepared as per the requirement specification document. This helps to define overall system architecture.
- High-Level Design (HLD)
  - Brief description and name of each module
  - An outline about the functionality of every module
  - Interface relationship and dependencies between modules
  - Database tables identified along with their key elements
  - Complete architecture diagrams along with technology details
- Low-Level Design(LLD)
  - Functional logic of the modules
  - Database tables, which include type and size
  - Complete detail of the interface
  - Addresses all types of dependency issues
  - Listing of error messages
  - Complete input and outputs for every module

Coding Phase

- Once the system design phase is over, the next phase is coding. In this phase, developers start build the entire system by writing code using the chosen programming language.
- In the coding phase, tasks are divided into units or modules and assigned to the various developers.
- It is the longest phase of the Software Development Life Cycle process.
- In this phase, Developer needs to follow certain predefined coding guidelines.
- They also need to use programming tools like compiler, interpreters, debugger to generate and implement the code.

Testing Phase

- Once the software is complete, and it is deployed in the testing environment.
- The testing team starts testing the functionality of the entire system.
- This is done to verify that the entire application works according to the customer requirement.
- During this phase, testing team may find some bugs/defects which they communicate to developers. The development team fixes the bug and send back to re-test.
- This process continues until the software is bug-free, stable, and working according to the business needs of that system.

Acceptance Phase

- Once the software testing phase is over and no bugs or errors left in the system then the final Acceptance process starts.
- Based on the feedback given by the project manager, the final software is released.
- Once the system is deployed, and customers start using the developed system, following 3 activities occur
  - Bug fixing - bugs are reported because of some scenarios which are not tested at all
  - Upgrade - Upgrading the application to the newer versions of the Software
  - Enhancement - Adding some new features into the existing software
- The main focus of this SDLC phase is to ensure that needs continue to be met and that the system continues to perform as per the specification mentioned in the first phase.

Thanks

Dear Students

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