

Module 4

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★ Software Artifacts

An item that is produced during the development process
Eg: ER Diagrams, Use Case, SDS, Data Flow Diagrams (DFD)

★ Use Cases

- How a user interacts with a product or system

Key Components

- Actor
- System
- Goal

Use Scenario v/s Use Case

Use case shows all the ways a system functions when trying to reach goals; scenario only depicts one example.

∴ Multiple use scenarios build a use case.

Actors in Use Case

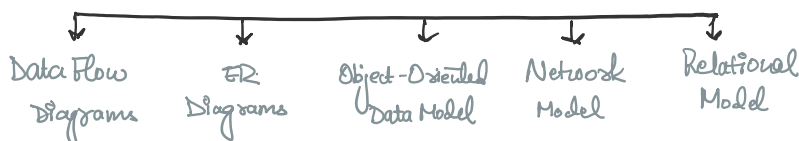
- Stakeholders
- Primary Actor
- Preconditions
- Triggers
- Basic flows
- Alternate flows

How to write Use Cases

- ① Describe your System what your system does for users
- ② Identify the actors interacts with the system
- ③ Define your actor's goals outcome actors want from system
- ④ Create a scenario sequence of actions customer takes; flow effects from ^{that} interaction
- ⑤ Consider alternate flows alternate flows that lead to diff. outcomes
- ⑥ Repeat steps 2-5 to compile your use case compiling together → use case!

★ Data Modeling

- Data Models are visual representations of an enterprise's data elements of the connections b/w them.



→ Data Flow Diagrams (DFDs)

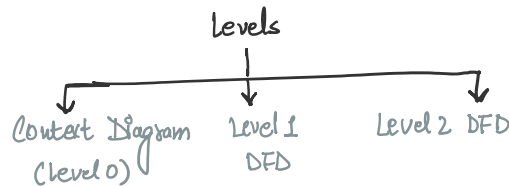
Represents flow of data within Information systems.

Graphical Representation of the data flow of a system that can be understood by both technical & non-technical users.



DFD rules & tips-

- Each process should have at least 1 input & 1 output
- Each data store should have at least 1 data flow in & 1 data flow out
- Data stored in a system must go through a process
- All processes in DFD go to another process or a data store



→ Entity-Relationship Diagram

Flowchart that illustrates how entities relate with each other

ERD Symbols



Key Attribute

———— mandatory relationship

----- Optional relationship

1 ——— 1

1 ———< N

N ———> 1

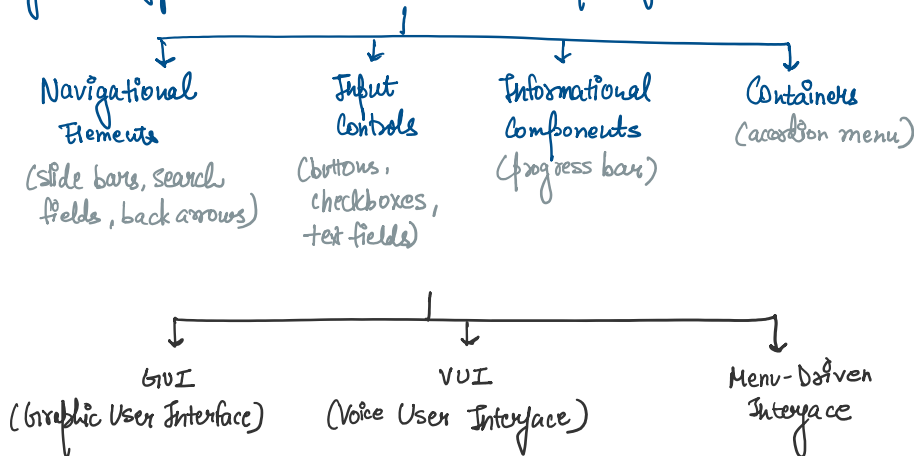
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★ User Interface (UI) Design

- Point of contact b/w humans & computers

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- Any technology one interacts with as a user is a part of UI.



★ Test Plan & Test Cases

Software Testing : process of validating & verifying the working of a software

Test Case : consolidated document with specific format to test the software

Parameters in Test Case

- Module Name
- Test Case ID
- Tester Name
- Test steps
- Prerequisite
- Test Priority
- Test Data
- Test Expected Result
- Actual Result
- Status : Remark (Pass/Fail)

Test Plan : A comprehensive document, describes testing objectives, strategies, schedule, estimation, criteria & deliverables.

① Analyze the Product

② Design the test strategy (define scope → identify test type → document risks & issues → create logistics)

③ Define the test objectives (reason or purpose for designing & executing test)

④ Define test criteria (Suspension & Exit Criteria)

⑤ Resource Planning (summary of all types of resources required - human, system)

⑥ Plan test Environment (setup of software & hardware; real business & user environment)

⑦ Schedules & Estimation

⑧ Determine Test deliverables (Before, During & After Testing)