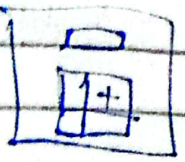
Software Engineering

Wireframes :-

User level Requirements.

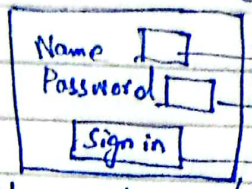


SDLC :-

→ Requirements :-

↳ User Stories (Why, How, What)

↳ Wireframes (User requirements of each Screen)



↳ Story boards (collection of wireframes)

↓

Representation

↳ Graphical ~~Requirements~~ of user requirements

↳ Functional / Non-Functional / User / Business / Physical Product / Requirements

→ Analysis :-

↳ Break down of Requirements

↳ What do you need to build the Software

→ Design :-

[VML]

↳ → High level (Departments for management)

↳ → low level (Database, programs)

→ Building / Development

→ Testing

↳ → Alpha Testing (Testing by developers)

↳ Beta Testing (Testing by users)

↓

↳ Customes Testing e.g Microsoft, Games

→ Maintainance:-
↳ To Maintain you need all SDLC steps
→ Updation / Upgrading
→ To remove errors

Developing Team

Supporting Team

Requirement:-
A Grecific description of client needs which can be used to create a real world product.

needs:-

wants:- Google need is to provide best Searching facility

↳ Usecase (flow user interact with Software) ↓ Client

IEEE
ISO → create Standards

In Pakistan ← Netsol level-5 CMM } Internation Organizations

formal Definition
Requirement:-
A condition or capability that must be met by a system or its component to satisfy standard, Specification, Contract or other formal document.

SRS (Software Requirement Specification) Document

Software Engineering:

Requirement:-

The requirements of user for a software.

Types of Requirements:-

① Functional Requirement:- (core functionality)

↳ Without it software is not acceptable

↳ The inputs by users are functional Requirement.

↳ Any input and output gotten will be functional Requirement.

i-e; As a user, I shall log into the System.

i-e; As a user, I shall click register to do registeration in a subject.

The word shall indicate that it is functional requirement.

↳ The central processing in between of input and output is also functional Requirement.

ⓘ Business Requirements:-

↳ Involve the purpose of project.

Business rules are different from the business rules.

Business rules are necessary to make a project appropriate or successful.

i-e. budgets, regulations

Users / End users Requirements:-

↳ Functional Requirements are extracted from users requirements

↳ These requirements are more important.

→ Requirment gathering are user requirements.

② Non-functional Requirements:-

Performance:-

↳ Response time, Utilization

↳ As a user I must log into the System with

(*) in the three seconds.

Methods to write non-functional Requirements:

(i) Exact Method (ii) Range

(*) ⟹ within 3 seconds (Exact). From 1 to 3 seconds (range)

Test is done according to statement.

Rapidly

The response time of the software must be

↓

(not even shall) Don't write should

3 to 10 seconds.

Throughput:-

Respone, Volume, Scalalbility.

How may data can proces, and how much users can use the system.

Utilization:-

must

How much resource will be used by software.

Network bandwith.

Scalability:-

must

Our System should be Scalable to increase no. of users.

Capacity:-

must

5000 users can use the System at a time.

Availability:-
Our system must be available 24 hours by using UPS

Reliability:-
Any function used must be reliable.

Recoverability:-
If there is any error in system then system must define it so developer can recover it. Identificate

Serviceability:-
↳ How much orders be placed.

Regularity:-
↳ Rules followed by system.

Manageability:-
↳ Easy to understand. Text, Graphics, buttons.

Environmental:-
↳ System must be enviromentally friendly.

Data Integrity:-
↳ Datta Security

Usebility
↳ How system is easy to use

Interoperability:-
↳ Every thing must be explained that it can be friendly usable by user.

External Interfaces
GUI → Front end To communitate with DB of GUI
Language → Back end back end is required.
DB → Database

Throughput:-
How many users perform same function at a time.
Capacity:-
↳ Handling (current functionality)
Utilization:-
↳ Utilization of hardodevices.
Volumetric:
How many data can be handle
Reliability:-
Our system must be reliable as the student must register the right subject.
Recoverbility:-
To manage error.
Maintainability:-
To manage system to prevent system from occuring error.
Regulatory:-
↳ Must follow regulations and rules.
Managebility:-
Coordinators can add or omit students.
Data Integrity:-
→ Data can not be accessed by external source.
Interoperability:-
→ System must be self explained.

Serviceability :-

↳ How many services must be provided by the system to the users.

Scope :-

You should not explain what to do but also that what do not to do.

Vision :- (Purpose)

Vision → Our system will provide functionality to clients to buy products remotedly.

Scope → Our system shall have the functionality where users can buy electronic from their home using credit and Debit card payment.

Placement where function is done

1. Vision
2. Scope
3. Functional Requirements
4. Non-Functional Requirements

] Common in them is requirements

Scope Creep :-

Whenever you change your generic opinion (To change requirements according to the Scope by user)