

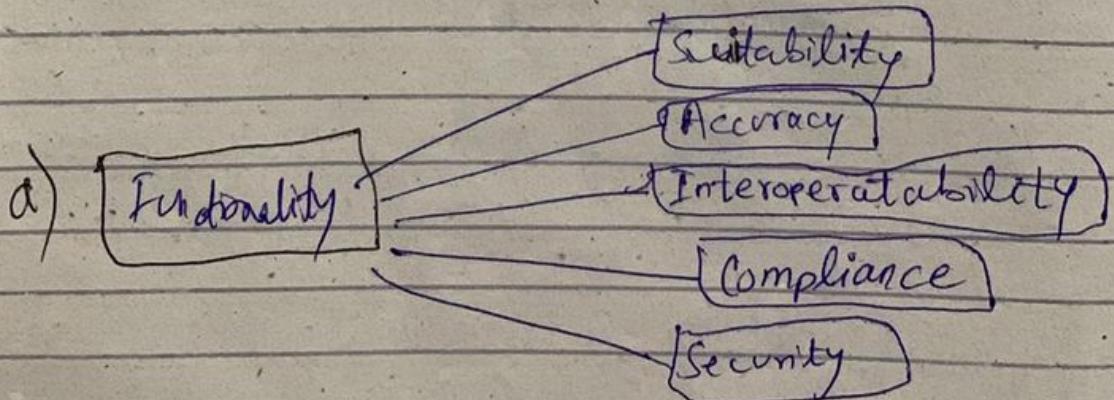
Monday

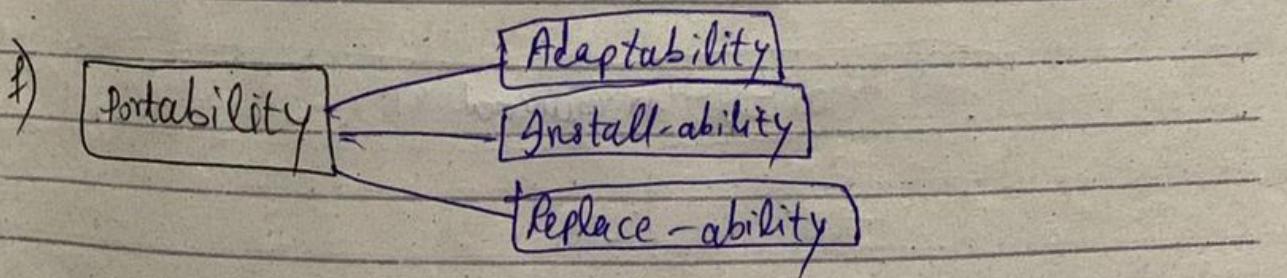
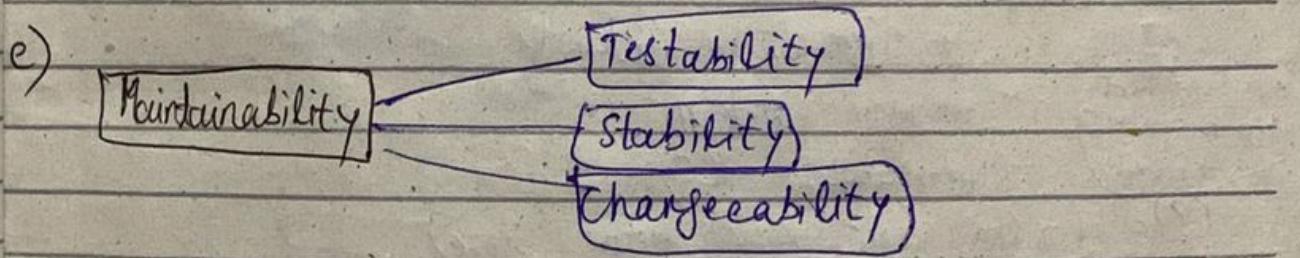
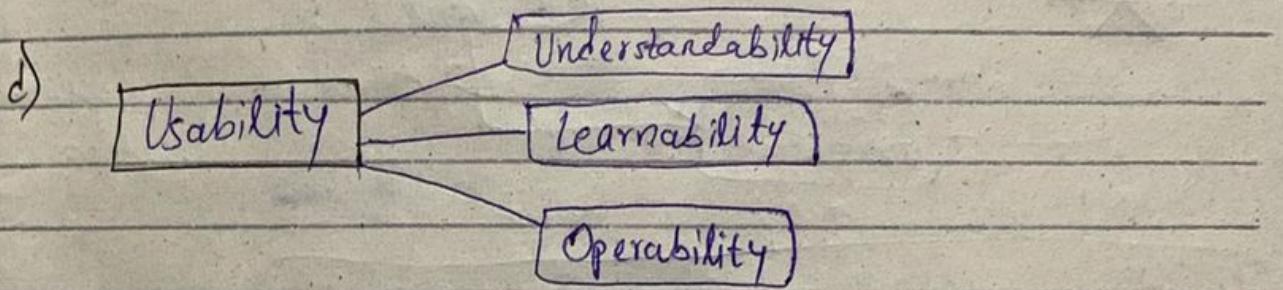
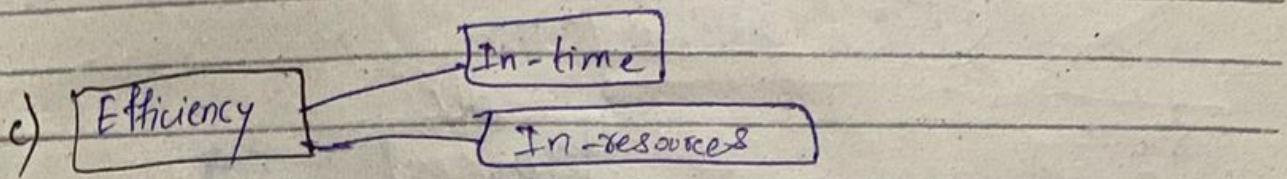
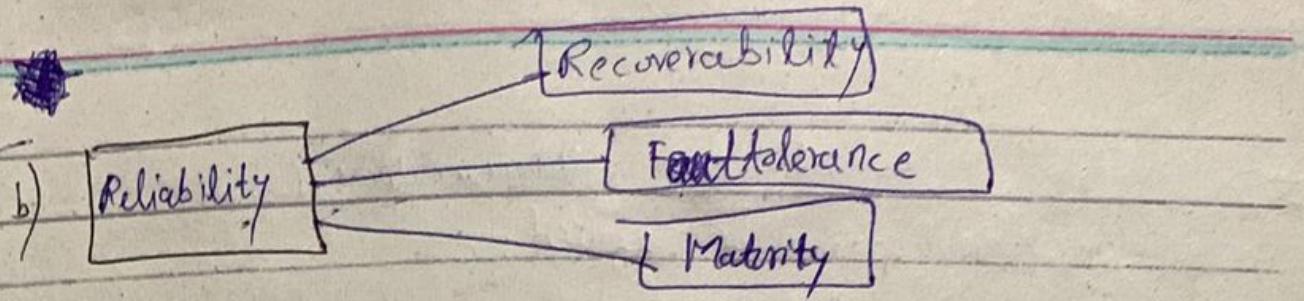
7/10/24

Software Engineering

⇒ Characteristics of "Software" in Software Engineering

1. Functionality : To perform functions . Against all requirements, system must be responsive.
2. Efficiency Perform the tasks efficiently.
3. Reliability Will work long-nr.
4. Maintainability Should be able to be maintained.
5. Portability Should be easily transferable from one environment to another.
6. Usability





⇒ Phases of S/W Engineering

1. Vision
2. Definition
3. Development
4. Maintenance

8TH OCT

Tuesday

8/10/24

Software Engineering

⇒ Requirements Engineering :-

Statement of needs that triggers the development of software or system.

Allan Davis defined software requirement as a user need or necessary feature, function, or attribute of a system that can be sensed from a position external to that system.

According to ~~John~~ Ian Sommerville, requirements or specification of what should be implemented. They are descriptions of how the system should behave, or of a system property or attribute. They may be constraint on the development process of the system.

According to IEEE, ~~the~~ requirements are:

- (i) A condition or capability that must be met or possessed by a system or system components to satisfy a contract, standard, specification, or other formally imposed documents.
- (ii) A condition or capability needed by user to solve a problem or achieve an objective.
- (iii) A documented representation of a condition or capability as in (i) or (ii)

⇒ Characteristics of requirements:-

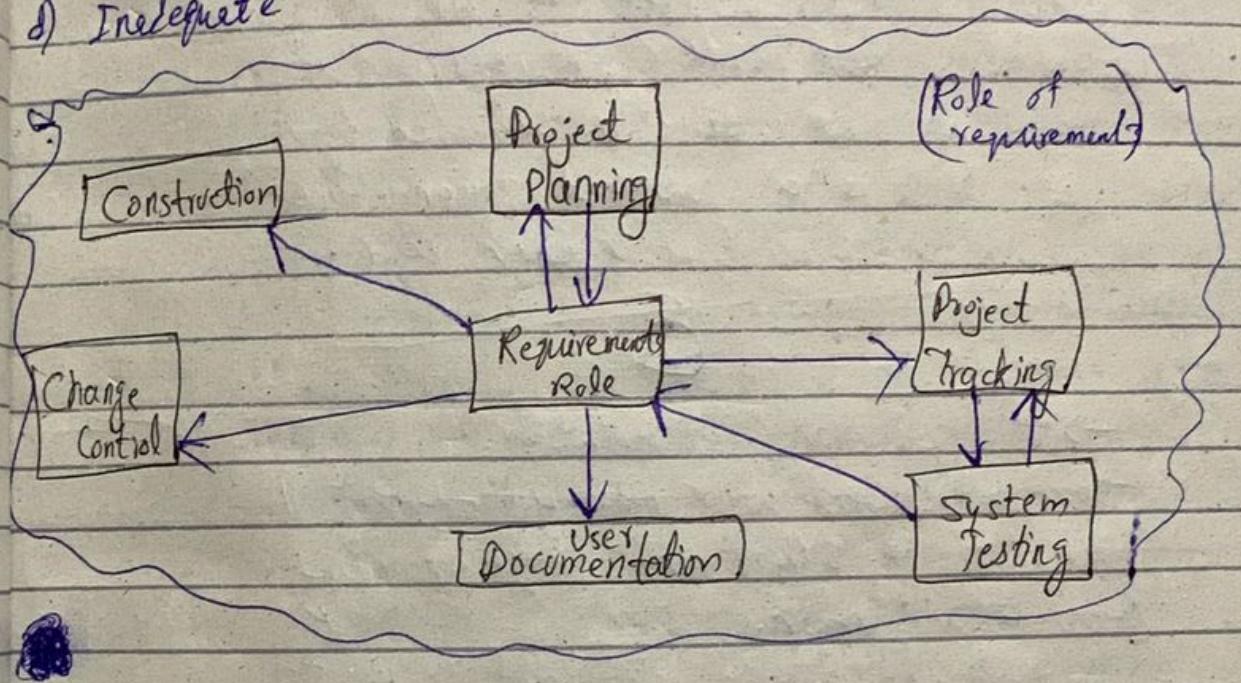
- a) complete
- b) sufficient
- c) specific
- d) reliable
- e) concise

$$\begin{array}{r}
 \cancel{1} \cancel{2} \cancel{3} \cancel{4} \\
 + 3 5 \\
 \hline
 4 3 \\
 + 0 4 \\
 \hline
 4 7 (7^{th})
 \end{array}$$

$$\begin{array}{r}
 4 7 \\
 1 0 \\
 + 3 5 \\
 \hline
 0 9 2 \\
 + 0 9 \\
 \hline
 1 0 1 (8^{th})
 \end{array}$$

Points that damage the requirements:

- a) Incomplete
- b) Frequently changed
- c) Vague
- d) Inadequate



Requirements' types/ Categories

- 1) Business requirements : Vision (obj. of org.) main functionalities perspective.
- 2) User // : What are the attributes user wants? Described by user perspective.
- 3) Functional // : Main functionalities possessed by the system. Described by system perspective.
- 4) Non-functional // : Standards, agreements, time, constraints.

Stakeholders of software

People who are interested in your product/software.

14TH OCT

MONDAY

14/10/24

S/W ENGINEERING

Requirements Elicitation

- What is requirements elicitation?
- Importance of requirements elicitation.
 - Compliance with business objectives
 - User satisfaction
 - Time & Money savings
 - Compliance & Regulation Requirements
 - Traceability & Documentation
- Requirements Elicitation Activities.
- Requirements Elicitation Methods
 - Interviews
 - Brainstorming sessions
 - Facilitated Application Specification Technique
 - Quality Function Deployment
 - Use case approach

Tuesday

5/11/24

05TH NOV

SOFTWARE ENGINEERING

State Transition Diagram

CS504-SE-1

(VU Handouts)

18/11/24/230

Trouble Report

(11 Nov 2024)

Data Flow Diagram

~~18/11/24/230~~

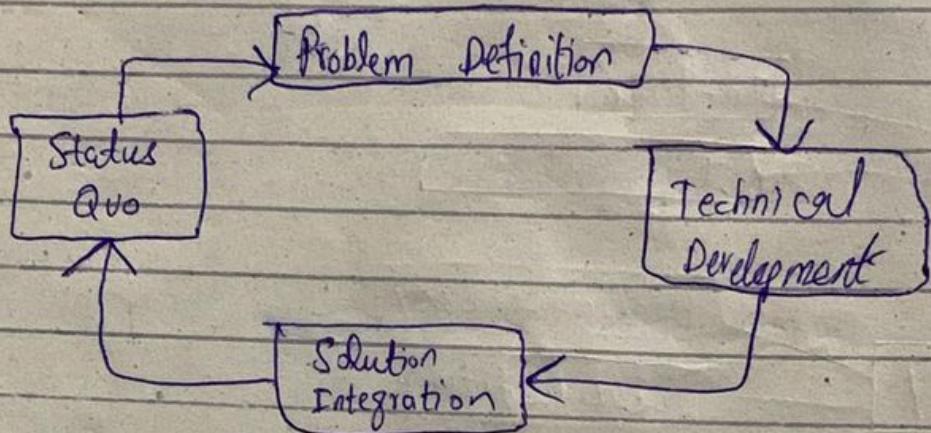
Data Flow Modeling

18/11/24/230

(Task: Data Flow Diagram of HU)



=> Software Development Loop: Whenever there is a problem, this loop will be applied:



Next Class Task: Think about your FYP. (webdev)

Requirements to automate a delivery system.
(think about TCs)
(or think about game renting store)

Who to contact
How to contact
How to collect
(?)

Your Idea => Your requirements & how to obtain

TUESDAY

22/10/24

22ND OCT

S/W ENGINEERING

"coupling and its types...."

Cohesion & Coupling

→ Cohesion

- Co-incidental cohesion
- Logical cohesion
- Temporal cohesion
- Procedural cohesion
- Communicational cohesion
- Sequential cohesion
- Functional cohesion

→ Coupling

- Content coupling
 - Common coupling
 - Control coupling
 - Stamp coupling
 - Data coupling
- (Ideally, no coupling is best)
- considered to be the

scenario

Task: 1 ~~example~~ of requirements (Q/A, both)
1 scenario of process model (any model)
(write on word) (Q/A, both)

Information System

↳ Information processing cycle

- Input
- Processing
- Output
- Storage

→ Components of Information System

- Data
- Procedures
- Hardware
- Software
- Network
- People

→ Usage of Information System

- Lower-level management
- Middle-level management
- Upper-level management

→ Usage, Categories of Information system

- Transaction
- Decision system
- Expert system

Web browsers are used as front end. Web technology is used for communication and HTTP protocol is used as the communication protocol.

Examples of Web Applications

- (i) Reservation Systems
- (ii) Weblogs
- (iii) Massively Multiplayer Online Role-Playing Games
- (iv) Online Shopping
- (v) Online Auction
- (vi) ~~Farming App~~
- (vii) Game Applications
- (viii) Multimedia Applications
- (ix) Calendar Applications
- (x) Map Applications
- (xi) Chat Applications
- (xii) Clock Applications
- (xiii) Interactive Design Applications
- (xiv) Stock Tickets
- (xv) Currency Converters
- (xvi) Data Entry / Display Systems
- (xvii)
- (xviii)
- (xix)
- (xx)

28TH OCT

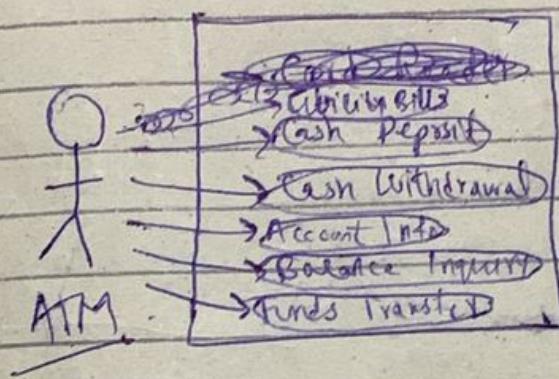
MONDAY

28/10/24

Software Engineering

UML (Unified Modeling Language)

- Entities
- Role of entities
- Relationship



use
case
Diagram

- ① Use case name
- ② Actors
- ③ Implementation priority
- ④ Normal course of events
- ⑤ Summary
- ⑥ Pre-condition
- ⑦ Post-condition
- ⑧ Uses
- ⑨ Extends
- ⑩ Assumption
- ⑪ Exception
- ⑫ Alternative path

Elaborated Use Case

Q) Write elaborated use case for doing a calling

Q2) Draw a use case diagram for airline/train ticket reservation system.