

Assignment No-2

Q.1) What is functional requirement in SRS?

(create functional and non functional requirement for:

Personal home library software where you can have friend as user entity.

→

1. Functional requirement in SRS (Software Requirement Specifications) indicate what a software system must do and how it must function; they are product features that focus on user needs.

2. As an SRS document contains a detailed description of software requirements and lays the groundwork for technical teams, investors, managers and developers, delineating functional requirements in a big part of writing it.

3. There are several methods to write functional requirements, but the most common method is by constructing user stories and user story formats. as a customer, I want to be able to view so that for example -

as a customer, I want to be able to view all the top products so that I can choose the best one that suits me.

The above example's technical function is a feature that enables customers to view the top products.

As you see, user stories put the actual end users first by considering their needs and acting as their counterpart, and this effectively specifies a software product's necessary functional requirements since they focus on user needs.

Example :-

Personal Home Library :

• Functional Requirements ⇒

1) Manage own books

- 1.1) Register book
- 1.2) Issue book
- 1.2.1) Display outstanding books.
- 1.2.2) Confirm issue book.
- 1.3) Query outstanding books.
- 1.4) Query book.
- 1.5) Return book.

2) Manage friend details

- 2.1) Register friend
- 2.2) Update friend details
 - 2.2.1) Display current details
 - 2.2.2) Update friend details
 - 2.2.3) Delete friend record

3> Manage borrowed books

3.1> Register borrowed books

3.2> De-register borrowed books

3.3> Display borrowed books

4> Manage Statistics

4.1> Display book account

4.2> Display amount invested

4.3> Display number of transactions

• Non-functional Requirement ⇒

1> Database

2> Platform

3> Web support

Q.2) Design functional requirement of ATM withdraw cash. Design user and system interaction flow diagram.

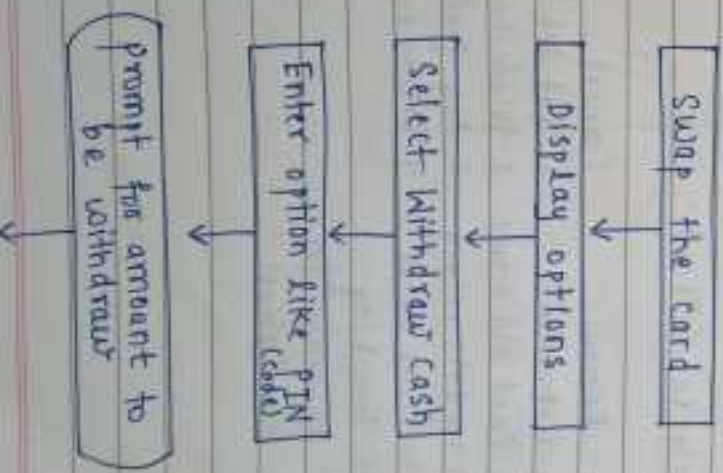
1. Functional requirements refer to what the ATM machine should do.
2. This includes ATM behaviors and how the ATM should react when certain conditions are met.
3. For example,
the ATM receives input, reads and delivers the appropriate output.
4. The advantage of functional requirements is that they help define service and behavior expectations.
5. If something is missing or if there are errors, it is obvious and can be adjusted.
6. Functional Requirements are the mandatory actions the ATM should perform upon user request.
7. We can list those pretty easily:
 - a. Withdraw
 - b. deposit
 - c. transfer
 - d. pay bill
 - e. account balance
 - f. print receipt
 - g. exit
8. Inputs the selection to withdraw funds, the ATM should dispense the selected amount.
 - inputs the selection to receive an account balance, the ATM should display the available amount.

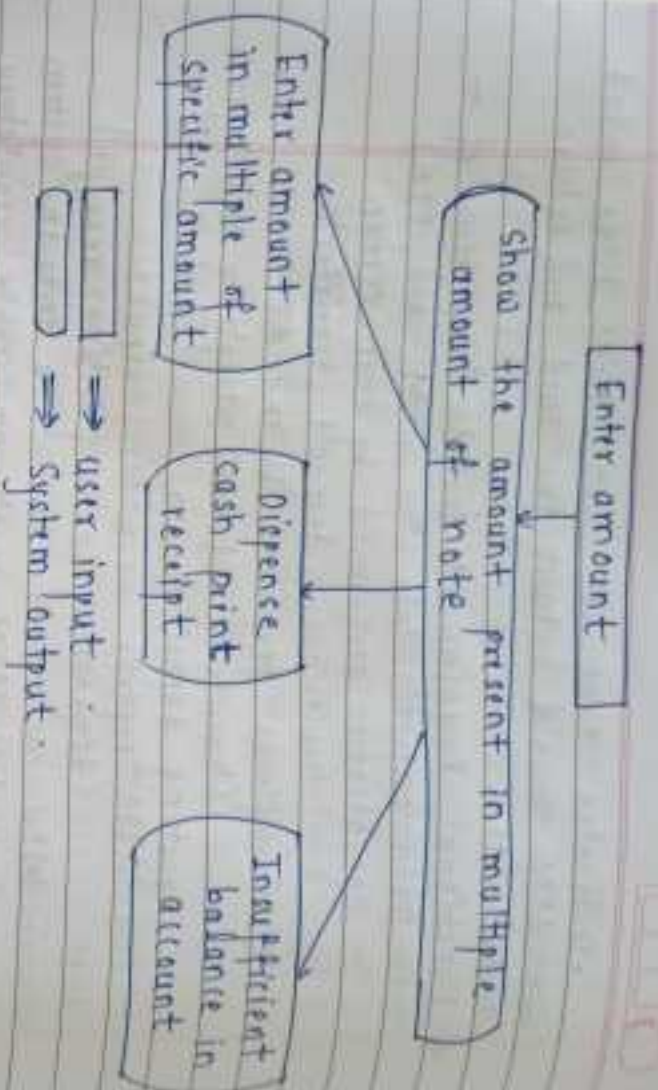
• Indicates that all transactions have ended, the ATM should return the card and return to its idle state.

Functional Requirement include descriptions of -

- Data entered into the ATM (card, PIN)
- Operations performed by each screen (withdrawal, deposit, transfer)
- Workflows performed by the ATM (transferring funds, accepting envelopes, reporting deposits)
- ATM reports or other outputs (dispensing cash, printing receipt)
- Who can enter the data into the system
- how the ATM meets applicable regulatory requirements.

Design of user and system flow diagram -



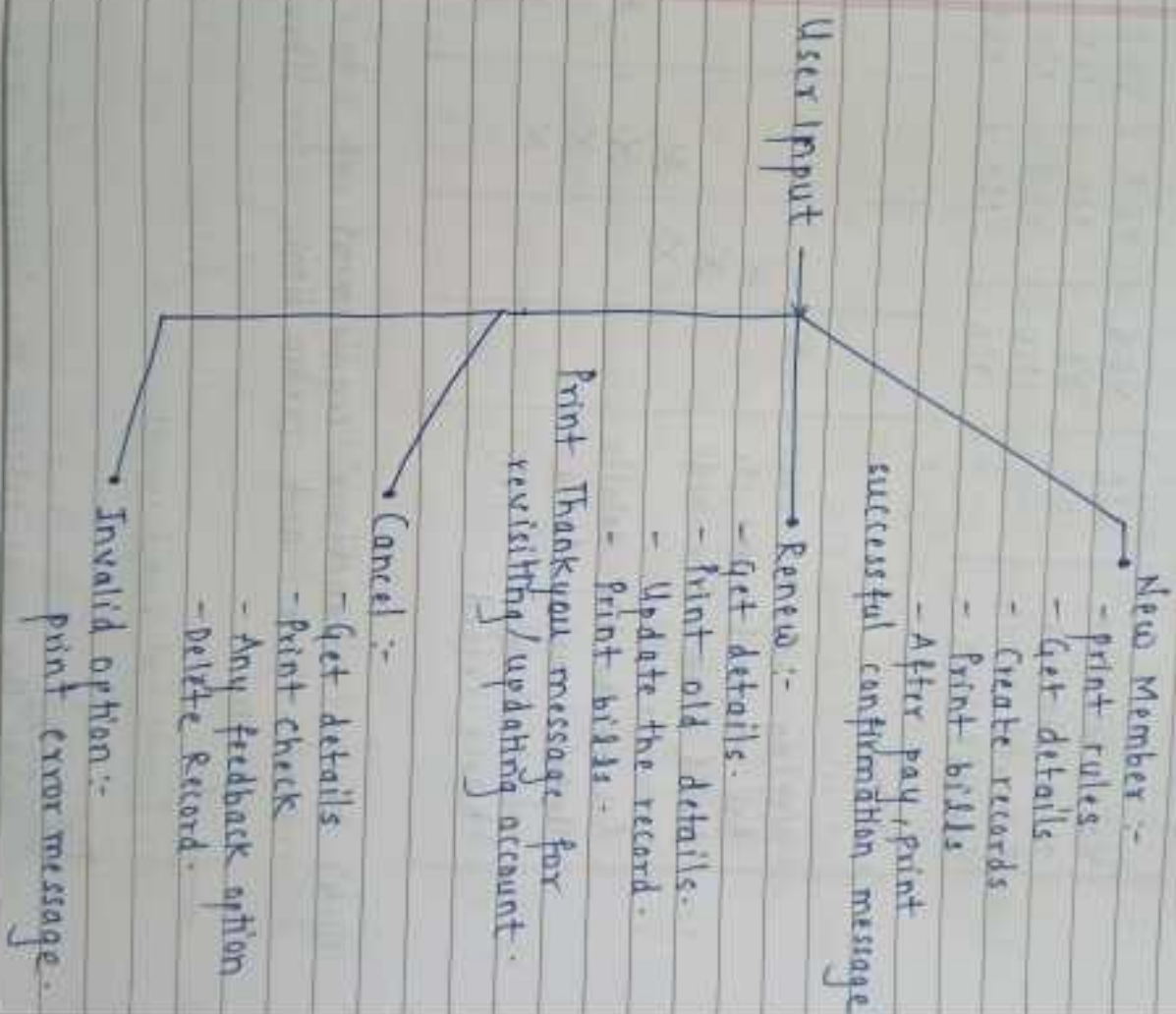


Q.3) Draw a decision tree and decision table for library membership automation software (LMS).

→ Raw material (Plan):-

New member	Renew	Cancel	Invalidation
1. Print rules	1. Get details	1. Get details	1. Print
2. Get details	2. Print old details	2. Print check	2. error
3. Create record	3. Update record	3. Any feedback	3. message
4. Print bills	4. Print bills	4. Delete record	
5. After pay, print confirmation message	5. Thanking message for updation		

Decision Tree :



3. Decision Table :-

Conditions	Results				
Valid selection	NO	YES	YES	YES	YES
New Member	--	YES	NO	NO	NO
Renewal	--	NO	YES	NO	NO
Cancellation	--	NO	NO	YES	YES

Actions					
Display error message	X				
Ask members name, etc		X			
Build customer record		X			
Generate bill		X			
Ask membership details			X		X
Update expiry date			X		X
Print cheque			X		X
Delete record					X

Q.4) Design functional requirement of s to search book and renew book for library system.

Functional Requirement-

Req-1

- Once the user selects the "search" option, he is asked to enter the keywords.
- The system should output details of all books whose title or author name matches any of the key words entered.

• Details include: Title, Author Name, publisher name, year of publication, ISBN number, catalog number, location in the library.

[R, 1, 1]: Search

- Input: "search" option
- output: user prompted to enter the keywords

[R, 1, 2]: Search & display

- Input: key words
- output: details of all books whose title or author name matches any of the key words.
- Details include: Title, Author Name, publisher name, year of publication, ISBN number, catalog number, location in the library.
- Processing:
Search the book list for the keywords.

[Req-2]

- When the "renew" option is selected
- The user is asked to enter his membership number and password.
- After password validation
- The list of the books borrowed by him are displayed.
- The user can renew any of the books
- By clicking in the corresponding renew box.

[R2.1] : Select renew option

- Input : "renew" option selected
- output : user prompted to enter his membership number and password.

[R2.2] : login

- Input : membership number and password
- output :
 - list of the book borrowed by users and displayed.
 - user prompted to enter books to be renewed or
 - user informed about the bad password

- Processing :
password validation, search books issued to the users from borrower list & display

[R2.3] : Renew selected books

- Input : user choice for renewal of the books issued to him through mouse clicks in the corresponding renew box.
- output : confirmation of the books renewed
- Processing :
Renew the books selected by them in the borrow list.

Q.5) Explain:

- a. Format of SRS document.
- b. Project idst management.
- c. Project charter.
- d. MBs dictionary.

Q. Format of SRS document -

→ SRS format as name suggests, is complete specification of description of requirements of software that needs to be fulfilled for successful development of software system.
It includes - following points.

1. Introduction:

- a. Purpose of the document.
- b. Scope of the document.
- c. Overview.

2. General description:

Description of objective of user, a user characteristic, features, benefits, about why it is important is to be mentioned.

3. Functional Requirements:

It includes possible outcome of software system.

ex. calculations, data processing etc
are placed in the ranked order.

4. Interface requirements:

How software program communicates with each other in the form of any language code etc.

5. Performance Requirements:

How a software system performs desired function under specific condition is explained.

6. Design constraints:

limitation or restriction are specified and explained for design team.

7. Non-functional attributes:

Explain non-function attributes required by software system for better performance.

8. Preliminary schedule and Budget:

Initial version and budget of project is explained.

9. Appendix:

It includes the additional information about the documents. ex- definitions of some specific terms.

b. Project Cost Management -

- Project cost Management is a series of activities for estimating, allocating, and controlling costs within the project.

- It allows determining and approving budget for the project and controlling spending.

- for example,

In construction project cost management it is vital to estimate cost of materials, equipment, salary of workers, etc.

In IT project cost management it is critical to estimate cost of software development, salary of IT staff, etc.

Process -

- The process of managing project costs is an activity for estimating costs, developing a project budget and controlling spending.

- The project cost management process includes the following key steps:

1. Cost Estimation:

It is the project cost management process step when the project manager cooperates with the financial department to estimate the costs required for purchasing all necessary goods/services and undertaking necessary activities to deliver the project.

2. Budget Determination:

At this step of the cost management process, cost spreadsheets are used to develop and determine the budget framework.

The project manager can use project cost management software to work in collaboration with the financial department to determine items of the budget and sources of funding and then to allocate the budget.

3. Spending control:

It is the project cost management step when the allocated budget is reviewed and spending is tracked.

The project manager takes responsibility for control spending and to ensure that the budget allocation is optimized and costs are fully covered with the planned and allocated budget.

C. Project charter -

→ Project charter refers to a statement of objectives in a project.

- This statement also sets out detailed project goals, roles and responsibilities, identifies the main stakeholders, and the level of authority of a project manager.

- The project charter is a short document that would consist of new offering request for a request for proposal.

- This document is a part of the project management process, which is required by initiative for policy Dialogue (IPD) and customer Relationship Management (CRM).

Role of Project charter -

- It documents the reason for undertaking the project.

- outlines the objectives and the constraints faced by the project.

- Provides solutions to the project in hand.

■ Identifies the main stakeholders of the project

Benefits of Project Charter -

- It improves and paves way for good customer relationships.
- Project charter also works as a tool that improves project management processes.
- Regional and headquarter communications can also be improved to a greater extent.
- By having a project charter, project sponsorship can also be gained.
- Project charter recognizes senior management jobs.

Elements in Project Charter -

1. Identify of the project
2. Time: the start date and the deadline for the project.
3. People involved in the project.
4. The return expected from the project
5. Barriers and the risks involved with the project
6. Informed and effective communication plan.

d. WBS dictionary -

- A WBS dictionary is a complement to your WBS that conveys detailed info about each component.
- A WBS dictionary is where the details of the tasks, activities and deliverables of the work breakdown structure are located.
- The WBS dictionary allows you to define each of the steps on the WBS and how to execute them to reach the final deliverable of the project.
- A work breakdown structure is a visual tool, and because of its graphic nature, it doesn't have the space to explain the details of each step.

How to create a WBS Dictionary -

1. Identify Item -

- Every step on your WBS should have a code or account identifier.

2. Describe it -

- Here is where the task is detailed.
- It should be communicated succinctly and clearly.

3. Note assumptions and constraints -

- Note any assumption and/or constraints about the task, such as dependencies with other tasks, equipment needed etc.

4. Assign owner -

Each task will be assigned to a team member who will own the execution and successful execution of that task.

5. Set Milestone -

A milestone is an important date in your project, usually indicating end of one phase and beginning of another.

6. Make a Schedule -

Whether your WBS breaks down into tasks or deliverables they'll have to be scheduled, such as determining their start and end dates.

Q.6) What is work breakdown structure? Draw WBS diagram for website showing Homepage, Marketing pages, Sales pages.

Work Breakdown structure -

1. Work breakdown structure is a deliverable oriented grouping of the work involved in a project that defined total scope of the project.
2. A foundation document, provides basis for planning & managing project schedules, costs, resources and changes.
3. Simply it is method for completing a complex, multi-step project.
4. It's a way to divide and conquer larger projects to get things done faster and more efficiently.



Q 7) Describe requirement gathering techniques like

1. Study of existing documents
2. Interview
3. Task Analysis -

3.1 - Scenario Analysis

3.2 - Form Analysis with help of examples

→
Requirement Task -

Medical Shop

Objective:

Provide medicines to the customer who will order the medicine.

1. Study about medicines:

A) Depends on customers requirements and current atmosphere.

i. We should analyze which type of atmosphere is running now a days, and people faces what type of problem, those tablets sells in more amount?

ii. Customer ordered one type of tablet that tablet is present in our shop or not?

iii. What is actual price or selling price for each and every type of tablet/medicine?

Problems:

Categories →

1. Management of customer's order.
2. Ordering the tablet/medicine.
3. Arranging the camp's.
4. App formation.

1. Management of customer's order-

R1: Seeing customer's order.

R2: Time limitations about the delivering the orders.

R3: Billing the order.

R4: If ordered medicine is not available, inform this to the customer.

2. Ordering the medicine:

R1: If some medicines are not available then order the medicines from our sellers.

R2: Analyze medicines related to atmosphere.

R3: Fast or slow delivery of ordered medicine.

3. Arranging camps:

R1: In between some month's arrange health checkup camp for customer.

R2: Inform customer about the camp.

4. App Information:

R1: Form own "Health care" app, add all features, medical shop and medicines information.

R2: Provide information about app, the customer uses this app first time.

Task Analysis -

1. Managing customers requirement about medicine.
2. Analysis of problem faced by customer.
3. Arrangement of camp.
4. Immediate delivery of orders/medicine.
5. Providing current update about any disease from these get the requirements and feedback from the customer.

A) Problem Management team:

1. Team handle problems like customer facing problem of side-effect of used medicines.
2. Getting wrong medicine.
3. Incorrect number of medicine or tablets.

B) Scenario Analysis:

1st - If workers are not present on duty then salary deduction.

2nd - Delivery of orders.

R1: If our delivery boy, can't deliver medicine on time. Analyze the reason behind that.

3rd - Packing the order

R1: Person selected for manufacturing the order, not manufacture correct medicine.

4th - Recording / Billing

R1: Person appointed for keeping records of medicine and billing, was not worried.

properly then salary deduction.

C) Form Analysis:

- R1: Rate the medicine according to their actual price.
- R2: Set delivery charges depending on distance between that point and medical shop.
- R3: If order is cancelled, put that record.
- R4: Keep records of our regular customer and give proper discount.

— X —