Today's Topic !

Requirment Gathering & Analysis

By: Mr. Alfred Edwin Worthington

Learning Outcomes

LO1: Identify the process of requirement gathering & analysis.

LO2: Write functional and non-functional requirements.

LO3: Understanding the differences between the available techniques for requirement gathering & analysis.

What is Requirement Gathering?

Requirment Gathering is,

- System investigation
- Important task under Analysis phase
- To collect the needs from the stakeholders and
- Understand the functioning of the system

Create a way to transport a single individual from home to work”

How marketing explained

What created by IT

Customer expected

Requirements cause problems when...

- There are too many – huge projects fail far more often than small ones.
- They are unstable – the customer cannot decide what problem they want solved.
- They are ambiguous – it is not possible to determine what the requirements mean.
- They are incomplete – there is insufficient information to build a solution.

What are software requirements?

“Software Requirements are Descriptions of the **services that a software system must provide** and **the constraints under which it must operate**”

Goals of Requirment Gathering

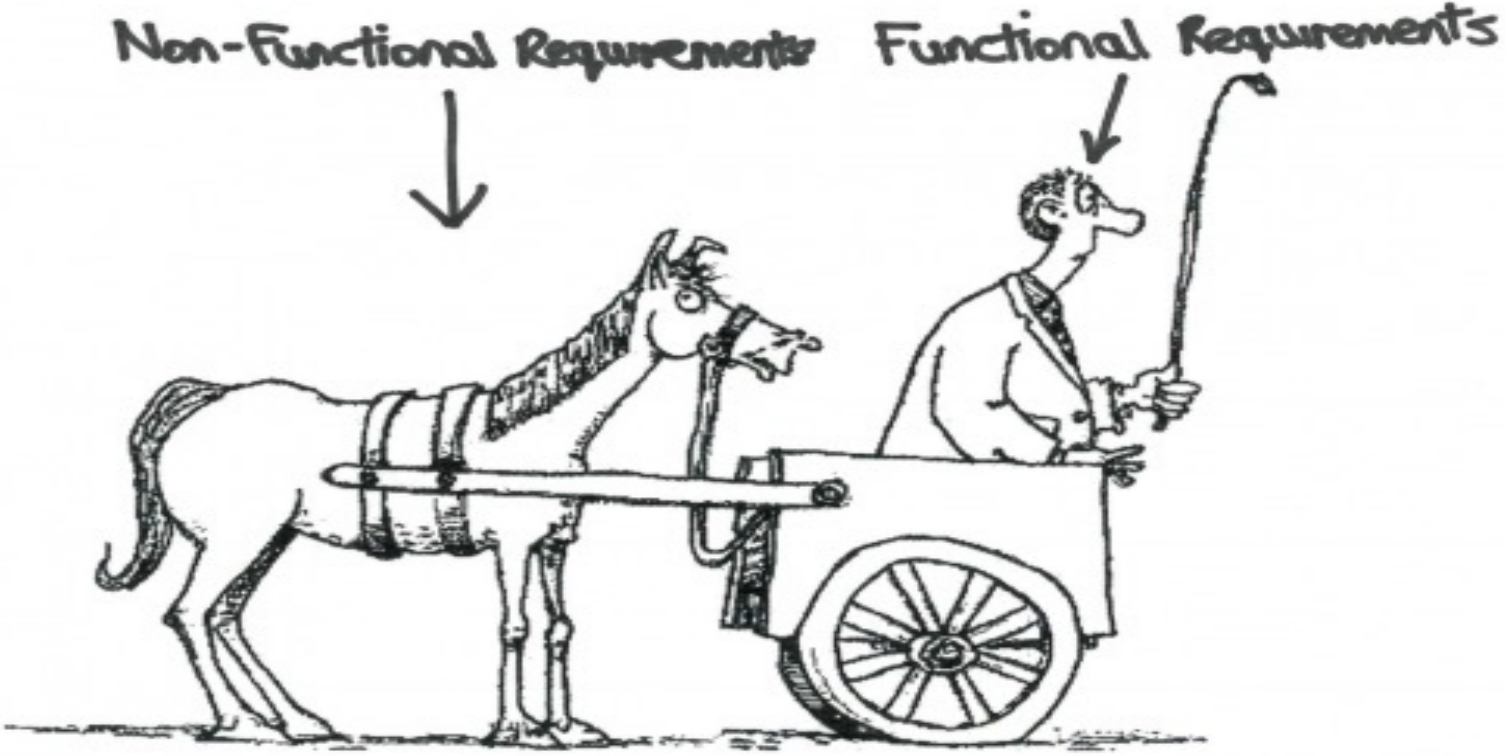
To document the requirements ensuring that:

- All the requirements are clearly expressed.
- All the requirements are documented.
- There are no inconsistencies in the requirements specification.
- There are no ambiguities in the requirements specification.

Software Requirements Specification (SRS) document.

2 Types of Software Requirements

1. Functional Requirements
2. Non - Functional Requirements



Don't put what you want to do before how you need to do it

Functional Requirements

- Specifies ***What The System Should Do.***
- How the system should react to particular inputs
- How the system should behave in a particular situation

E.g. : Login, Purchase, Online Reservation

Non - Functional Requirements

- Specifies ***How the system should perform a function.***
- Describe how a system should behave .
- Constraints on the services or functions offered by the system

E.g. : Confidentiality,
Security,
Performance

Let's start to write functional requirements!

- Functional requirements describe a software system as a set of functions {f()}.

  Each function f() transforms a domain of inputs to corresponding range of outputs.

Each function is described in terms of :

1. Function Name
2. Input
3. Processing
4. Output

Functional requirements describe,

- A set of high-level requirements
- Each high-level requirement :
- Takes in some data from user
- Outputs some data to the user

Example 1

Write functional requirement for the following scenario.

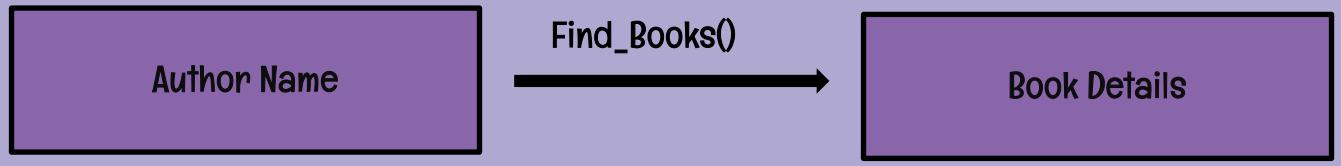
A user can enter the author's name and get all the books details written by the given author.

Function Name: Find_Books()

Input: Author Name

Processing: Search library catalogue for books written by the specified author.

Output: Book details written by the author(Title, Publisher, ISBN)



Example 2

Write functional requirement for the following scenario.

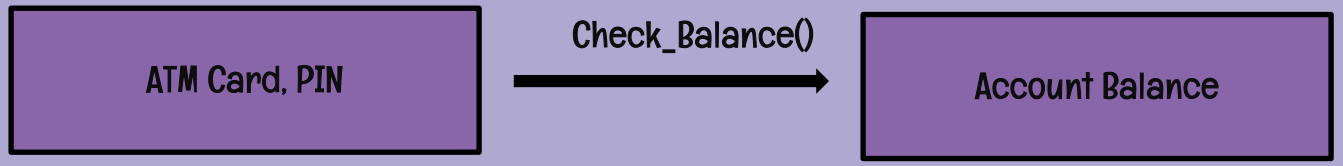
To check the account balance in an ATM machine, user need to provide his/her ATM card and pin number. Then machine checks the relevant account and displays the current balance.

Function Name: Check_Balance()

Input: ATM Card, PIN

Processing: Validate the pin number, check the account balance of the relevant account and display balance.

Output: Account Balance



Question 1

Write a functional requirement for the below scenario.

The user should be able to search for books in the library website. Once the user selects the “search” option, the user will be asked to enter the keyword to search. If the given keyword matches with any of the book title or author’s name, the system should output title, author, publisher name, year of publication, ISBN Number of the book.

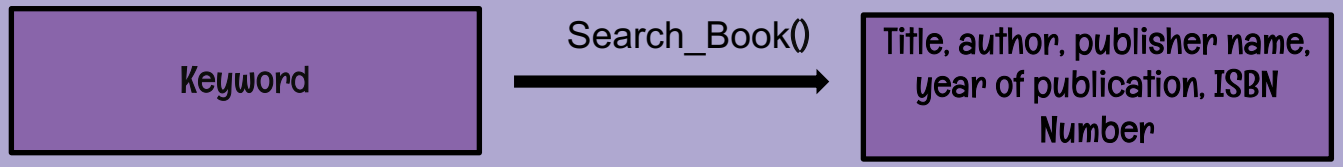
Question 1 - Answer

Function Name: Search_Book()

Input: Book Name (Keyword)

Processing: Check for the book titles/author names which matches with the keyword

Output: Title, author, publisher name, year of publication, ISBN Number



Question 2

Write a functional requirement for the below scenario.

A supermarket has devised a scheme to encourage customer loyalty. To register for the scheme, a customer must provide their name, address, and telephone number. Once successfully registered, each registered customer is assigned a unique Customer Identification Number (CIN).

Question 3

Write functional requirements for the below scenario.

“Seabourn Cruise Line” is a member of the exclusive World's Leading Cruise Lines alliance. They offer cruise vacations that appeal to the widest range of lifestyles and budgets and sail to some of the world's most exciting destinations. Once registered, passenger can login to the system by using their Passenger ID and password. If entered Passenger ID and password are correct, the system displays the main menu to book the ticket.

Passengers can check the availability of the seats before they make the booking. For that passenger should select the date, final destination from the menu, then the system displays available flight details. If the flights are available, then only passenger can book tickets. In order to book a ticket, the passenger should provide the date, no of passengers, final destination they need to visit. Then, the system validates the entered details and generates reservation ID for it.

Let's start to write non-functional requirements!

Non – Functional Requirements

There are characteristics of the system that cannot be expressed as functions.....

- Security- ex : internet systems
- Reliability – ex :- safety-critical systems
- Performance – ex :- real time systems
- Usability
- Maintainability
- Portability
- Availability

Example 1

Write non-functional requirements for the following scenario.

E-Doctor' is an online doctor channeling web site. A user can make an appointment with a doctor of a given specialty using this web site. The system administrator ensures that the system is available 24x7 and assures the confidentiality of the users' information.

Answer

NF1: Availability

Description: The system should ensure that the system is available 24x7

NF2: Security/ Confidentiality

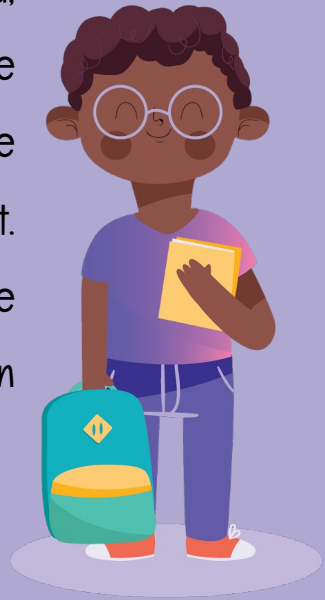
Description: The system should provide the confidentiality for the customer's information.

Note: Non-Functional (NF)

Question 4

Analyze the scenario given below and write functional requirements and non-functional requirements.

A user can check his account balance in an ATM machine after entering the ATM card, account type and the pin number. If the pin number is correct, machine displays the account balance on the screen. If the user wants to withdraw money from the account, he can select withdrawal money option and enter the account type and withdrawal amount. The central server verifies whether the amount can be debited from the account. If the verification is successful, the money will be debited from the account and the user can collect the cash and the receipt.



PLAY
STUDY
SPORTS
THANK
You!