Laboratory 2

Title of the Laboratory Exercise: Requirements Analysis - II

1. Introduction and Purpose of Experiment

    Students will formally document the identified requirements in an SRS document for the scenario

2. Aim and Objectives

    Aim

    - To develop formal SRS document in a standard format for a given engineering problem

    Objectives

    At the end of this lab, the student will be able to

    – Identify dependencies of a software requirement
    – Create SRS document in a standard format

3. Experimental Procedure

- Work in teams of 7 students
- Each team should read the problem statement and identify requirements as a group
- Each team will then confirm the requirements and document the requirements in an SRS document
- Each individual will then write their lab manual, documenting their observations

4. Calculations/Computations/Algorithms

Item	Detail
Requirements tag	FR1
Statement	The Software must allow valid users to sign in and sign up and identify the type of user.
Depends on	None
Stake holder	End user
Example scenario	• End user A should be able to create a new account if A is a new user. • End user B should be able to login using valid email and password if B is a returning user. • End user C should be able to login using phone number and password. • End user D with valid credentials should be identifiable as Merchant/Customer.

Item	Detail
Requirements tag	FR2
Statement	The Software should display the list of products based on category
Depends on	None
Stake holder	End user
Example scenario	• End user A should be able to view the list of available valid products based on selected category such as Electronics Category. • End user B should be able to view the list of available valid products based on selected category Furniture.

Item	Detail
Requirements tag	FR3
Statement	The Software must display complete product details of a valid product.
Depends on	FR2, FR11
Stake holder	End user
Example scenario	• End user A should be able to view the complete product details of selected product TV, such as resolution, size,

| | company, price, discount, technology used etc.
- End user B should be able to view the complete product details of selected product Shirt, such as size, color, price, manufacturer, etc. |
|---|---|

Item	Detail
Requirements tag	FR4
Statement	The Software allows users to search, sort and filter valid products.
Depends on	FR2, FR11
Stake holder	End user
Example scenario	• End user A should be able to search for a specific product name. • End user B should be able to sort the displayed list of products based on price, popularity, and other parameters. • End user C should be able to filter the displayed list of products based on price, and product specific parameters.

Item	Detail
Requirements tag	FR5
Statement	The Software must allow valid users to add valid products to cart.
Depends on	FR1, FR2, FR11
Stake holder	End user
Example scenario	• End user A should be able to add a product from Category B to the cart for checkout. • End user B should be able to add multiple valid products from Category C to the cart for checkout.

Item	Detail
Requirements tag	FR6

Statement	The Software must allow to checkout a valid cart of a user with customer details and create an order
Depends on	FR1, FR2, FR11, FR5
Stake holder	End user
Example scenario	• End user A should be able to check out the cart using his Home Address, Contact details, and delivery time. • End user B should be able to check out the cart using Work Address, Work contact number and on work timings. • End user C should be able to check out with an option for gift wrapping.

Item	Detail
Requirements tag	FR7
Statement	The Software must allow the user to choose the mode of payment and complete order transaction process.
Depends on	FR6
Stake holder	End user, Merchant
Example scenario	• End user A should be able to pay using Electronic medium like Credit Card/ Debit Card, Net Banking, PayTM, etc. • End user B should be able to pay using his previous Wallet Balance. • End user C should be able to choose Cash on Delivery as an option.

Item	Detail
Requirements tag	FR8
Statement	The System should give an option to provide coupon code during checkout.
Depends on	FR6
Stake holder	End user
Example scenario	• End user A should be able to apply a valid special coupon code for additional discount on the product.

Item	Detail
Requirements tag	FR9
Statement	The System must allow the user to track a valid order and receive updates.
Depends on	FR6, FR7
Stake holder	End user
Example scenario	• End user A should be able to track his existing order using order id. • End user B should receive updates about the status of the order.

Item	Detail
Requirements tag	FR10
Statement	The System must allow the user to cancel, return or replace an existing valid order.
Depends on	FR7
Stake holder	End user
Example scenario	• End user A should be able to cancel an existing order if not yet delivered within a specific amount of time period and the amount to be refunded back to the source. • End user B should be able to return a delivered order within specific time period and receive the refunded amount to Wallet. • End user C should be able to replace a delivered order with a new product if found damaged.

Item	Detail
Requirements tag	FR11
Statement	The System must allow merchants to add/remove valid products for sale.
Depends on	FR1
Stake holder	Merchant

Example scenario	• Merchant A should be able to add a valid product with details for sale on Category B. • Merchant B should be able to delete a product from his listing for sale.

5. Analysis and Discussions

Analysis is the first stage in the waterfall model of software development process. After having completed the inception, elicitation and elaboration activities, we carry out the specification, negotiation and validation activities. The end result of the Analysis stage is a very important document called SRS (Software Requirements Specification) Document. The requirements of the customer were clearly specified unambiguously, via brainstorming in the team and discussion with the customer. The specifications were then negotiated, reviewing their implementation and development feasibility, since it involves time and money costs. The final activity is validation, where the specifications are reviewed for cohesiveness and completeness. The SRS document is prepared which is the outcome of the analysis stage. It fully describes the expected behaviour of a software system, documenting the functional and non-functional requirements, performance and quality goals, capabilities, interface and operating environment.

The SRS Document is an outcome of the analysis stage. It states the functions and features of the software that need to be provided, as well as the constraints within which it must be does. It is the basis for all further project planning, designing, developing and testing. Everyone involved in the project at later stages of the development rely on the SRS document.

The document serves to reduce redundant communication between the people involved in the software development process. The product description and features are easily accessible. It sets the features in stone, so that the project doesn't deviate from what it is supposed to implement. It also saves on effort and cost of later reviews in design and testing.

The document also helps in estimating the time and money cost. It also works as a contract between the client and the company.

6. Conclusions

We completed the Analysis stage of the Waterfall model for software development. The activities performed were specification, negotiation and validation. We also created an initial SRS document version 0.9. It is incomplete without the analysis models, and requires further review.

7. Comments

1. Limitations of Experiments

It is difficult to judge the cohesiveness of the SRS and the analysis itself, without initial analysis and design models.

2. Limitations of Results

The SRS is incomplete without the appendices – analysis models and To Be Determined List

3. Learning happened

Waterfall model stages, Activities of the Analysis stage – specification, negotiation and validation, importance of SRS and how to write it.

4. Recommendations

None

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	