

COMSATS University Islamabad, Park Road, Chak Shahzad, Islamabad Pakistan

SOFTWARE DESIGN DESCRIPTION

(SDD DOCUMENT)

for GharPeyVersion 1.0

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Bachelor of Science in Computer Science (2016-2020)

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Revision History

Name	Date	Reason for changes	Version

Application Evaluation History

Comments (by committee)	Action Taken
*include the ones given at scope time both in doc and	
presentation	

Supervised by <Supervisor's Name>

Signature_____

1. Introduction

This project proposal document is intended to describe the system's scope. This document also contains statement of problems and proposed solution, modules, related system analysis, tools and technology, and system benefits.

The proposed system is an initiative to empower hardworking and skilled women by providing them with a market appraisal platform to sell their products and services. Our mission is to increase economic opportunity in Pakistan. The proposed system consists of a web and an android application.

2. Design methodology and software process model

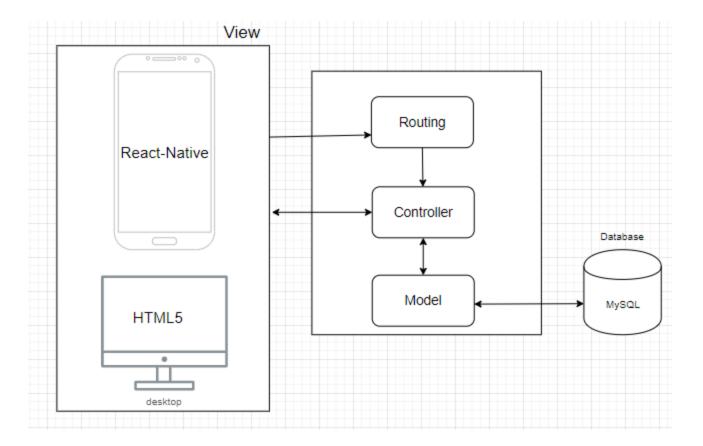
Incremental model is selected because this model make risk management easy as risky pieces are handled during the iterations and as our system requirements are clearly understood. The model generates working software quickly and early during the software life cycle and it is easier to test and debug. Move over, it is flexible and less expensive to change requirements and scope.

3. System overview

There are a huge number of hardworking women in Pakistan who work at home or any workplace making products that they are unable to display and sell on some huge audience platform. Similarly, talented women lack opportunities to deliver local services like Bridal Makeup etc. Whether it's a doorstep service or the service they provide from home/workplace, the issue continues in either way. The proposed system aimed at helping those hardworking talented women by offering a platform to sell their products and services at much lower cost and with less understanding.

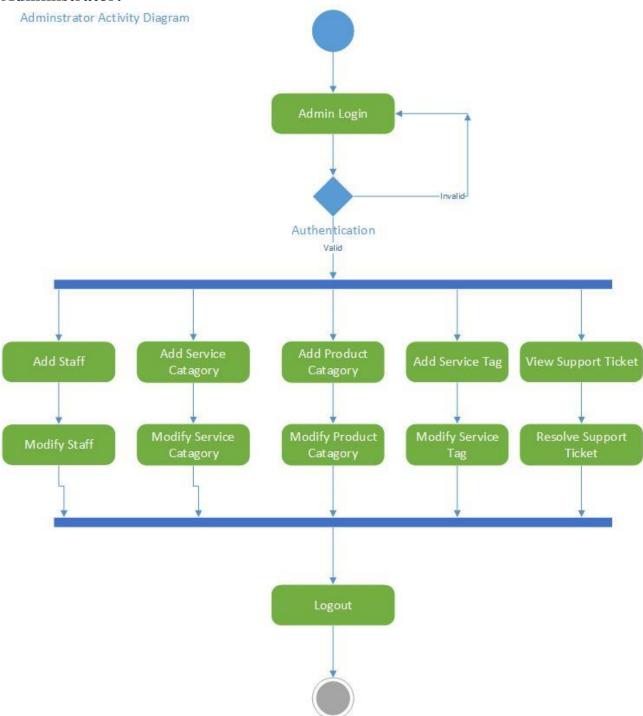
The proposed system will allow and encourage the Pakistani women to use digital marketplace and showcase their skills and talent in well-secured manner through this platform. This platform will allow seller to create a shop as her brand, add products on it and sell them. Besides products, sellers can also provide system-defined services that could be either the doorstep service or the home / workplace service they provide Sellers can manage their store portfolios and maintain reputation through buyer reviews to survive the digital market platform. This system allows sellers to create live sessions and increase the visibility of their products to the public. Sellers can keep track of all orders and payments and enjoy popular local payment methods.

3.1 Architectural design

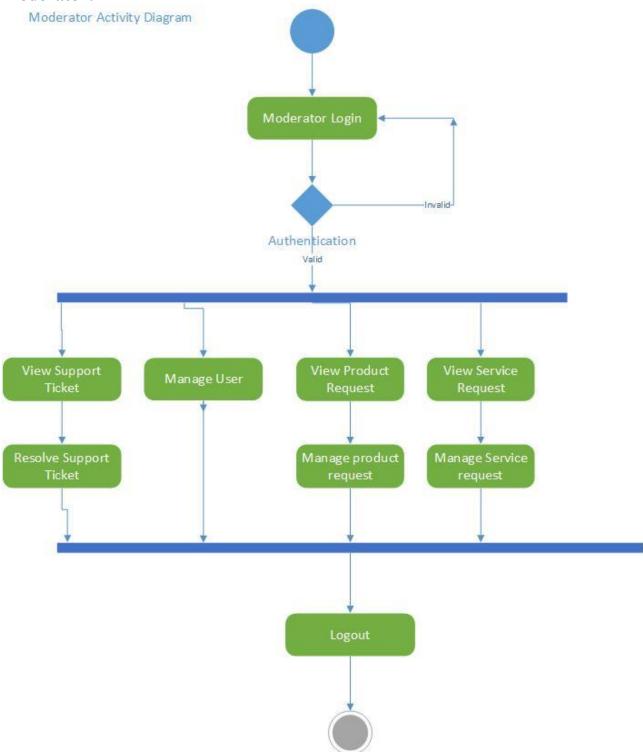


3.2 Process flow/Representation

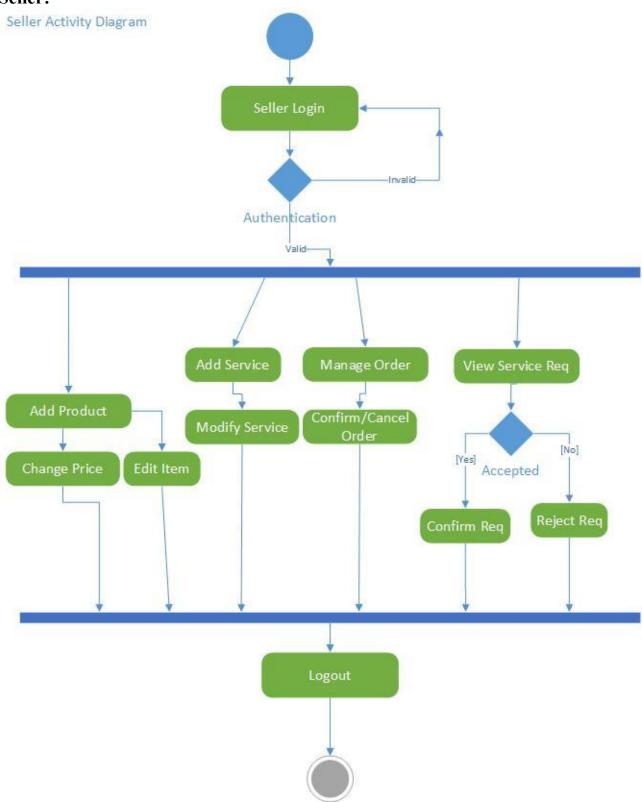
Administrator:



Moderator:

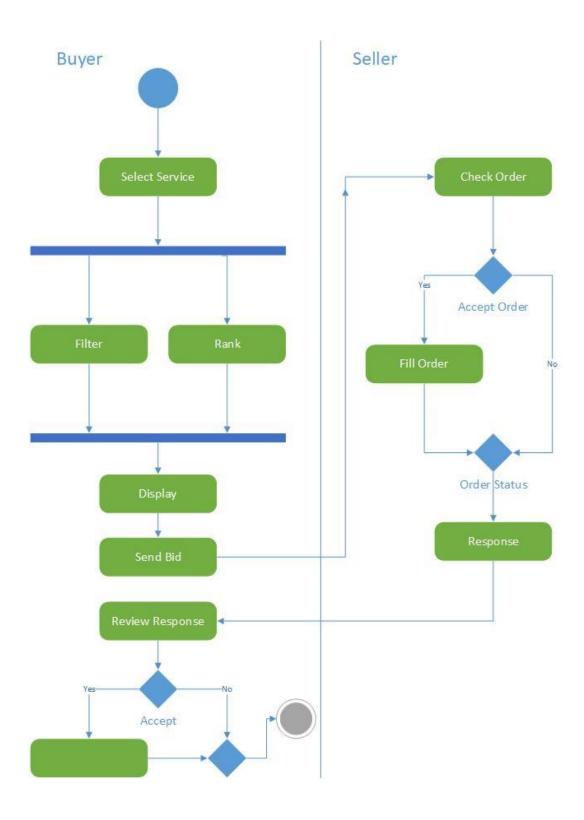


Seller:

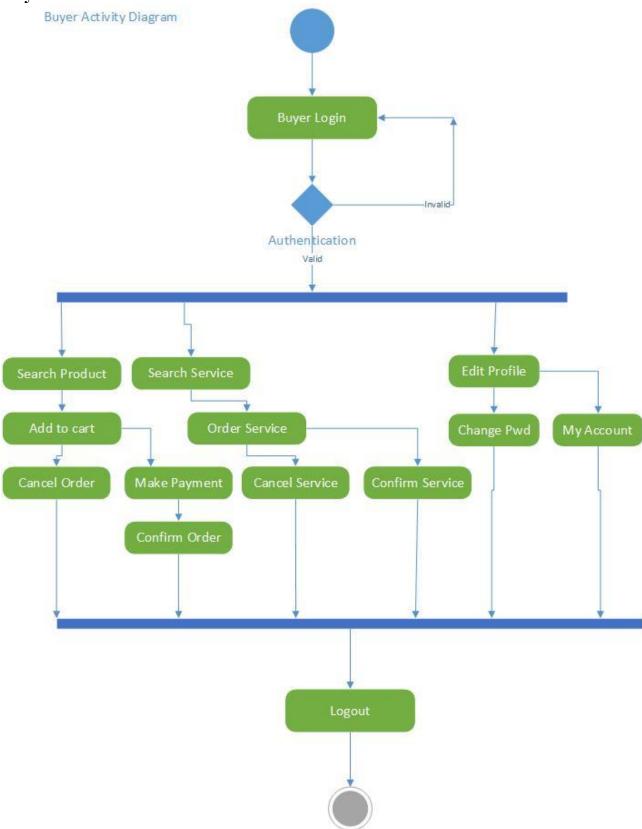


Service:

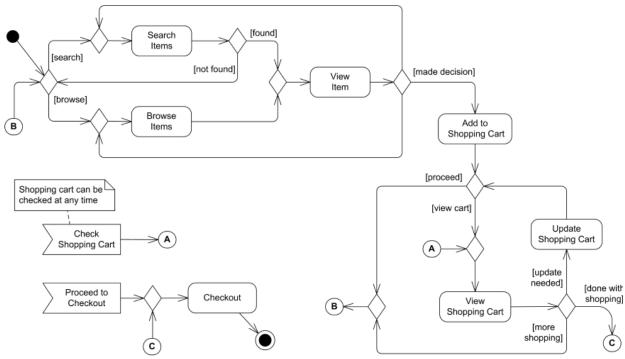
Service – Activity Diagram



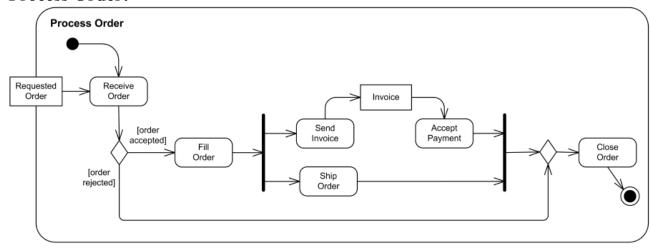
Buyer:



Online Shopping: Online Shopping



Process Order:

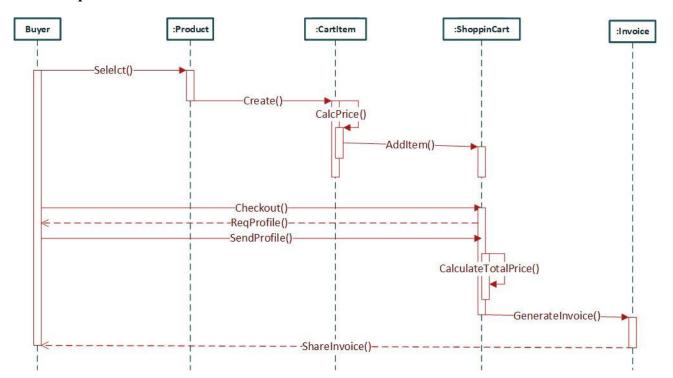


4. Design Models

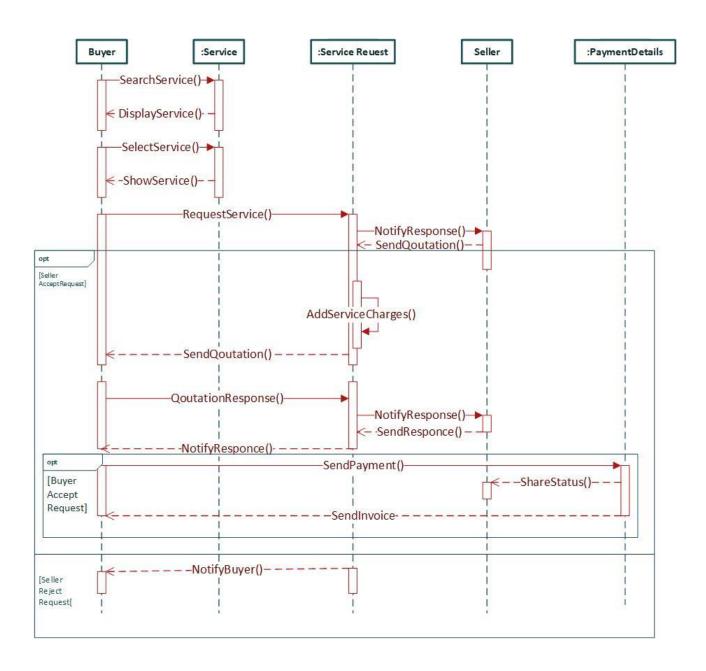
4.1 Class Diagram

4.2 Sequence Diagram

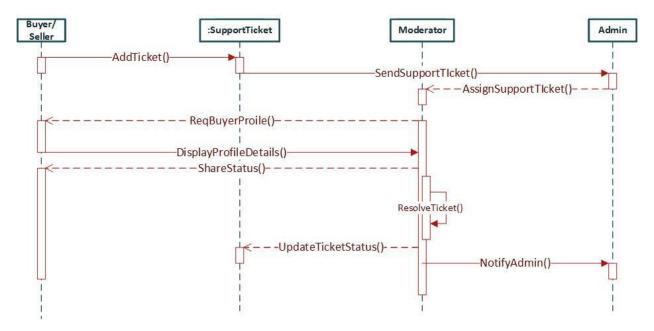
4.2.1 Request Order



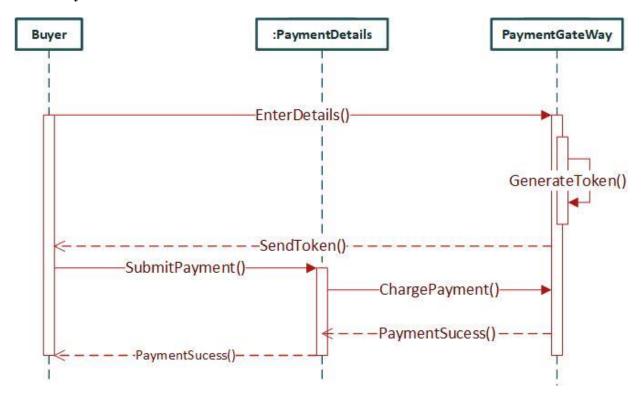
4.2.2 Request Service



4.2.3 Support Ticket



4.2.4 Payment



5. Data design

[ERD Attached]

5.1 Data dictionary

5.1.1 **ADMINS**:

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255
Phone	VARCHAR	255
Email	VARCHAR	255
Email_verified_at	TIMESTAMP	
password	VARCHAR	255
Remember_token	VARCHAR	100
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.2 MODERATORS:

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255
Phone	VARCHAR	255
Address	VARCHAR	255
Email	VARCHER	255
Location_id	INT	10
Email_verified_at	TIMESTAMP	
password	VARCHAR	255
Remember_token	VARCHAR	100
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.3 **BUYERS:**

Id	BIGINT	20
Email	VARCHAR	255
Name	VARCHAR	255
Phone	VARCHAR	255
Address	VARCHAR	255
Location_id	BIGINT	10
Email_verified_at	TIMESTAMP	
password	VARCHAR	255
Remember_token	VARCHAR	100
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.4 PRODUCT:

Fields	Data Type	Size
Id	BIGINT	20
seller_id	BIGINT	20
category_id	BIGINT	20
Name	VARCHAR	255
Slug	VARCHAR	255
Featured_image	VARCHAR	255
Description	TEXT	
Price	Decimal	(16,2)
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.5 **PRODUCT_CATEGORIES**

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255

Slug	VARCHAR	255
Featured_image	VARCHAR	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.6 QUESTIONS:

Fields	Data Type	Size
Id	BIGINT	20
Buyer_id	BIGINT	20
Question-title	TEXT	255
question_id	BIGINT	20
Question_description	TEXT	10
item_type	Varcher	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.7 ANSWERS:

Fields	Data Type	Size
Id	BIGINT	20
question_id	BIGINT	20
Answer_title	TEXT	255
Answer_description	TEXT	20
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.8 **PRODUCT_TAG:**

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255

Tag_id	BIGINT	20
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.9 **PRODUCT_REVIEWS:**

Fields	Data Type	Size
Id	BIGINT	20
product_id	BIGINT	20
Product_order_ID	BIGINT	20
question_id	BIGINT	20
Review	TEXT	
Rating	SMALLINT	5
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.10 **PRODUCT_ORDER:**

Fields	Data Type	Size
Id	BIGINT	20
Order_id	BIGINT	20
Product-id	BIGINT	20
Product_price	DECIMAL	(12,4)
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.11 **ORDERS**:

Fields	Data Type	Size
Id	BIGINT	20
Buyer_id	BIGINT	20
Shipping_address	VARCHAR	255

Shipping_location_id	BIGINT	20
Charge_id	VARCHAR	255
Note	MEDIUMTEXT	
Paid_at	TIMESTAMP	
Completed_at	TIMESTAMP	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.12 **CITIES:**

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255
city_id	INT	10
Zip	VARCHER	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.13 **STATES:**

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255
Country_id	INT	10
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.14 COUNTRIES:

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255

Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.15 **CITY_ARES:**

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255
City_id	INT	10
ZIP	VARCHAR	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.16 **SELLERS:**

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255
Phone	VARCHAR	255
Return_address	VARCHAR	255
Email	VARCHER	255
Approved_at	INT	10
Email_verified_at	TIMESTAMP	
Verification_code	VARCHAR	255
Phone_verified_at	TIMESTAMP	
Cnic	VARCHAR	255
Warehouse_address	VARCHAR	255
Warehouse_location_id	BIGINT	20
password	VARCHAR	255
Remember_token	VARCHAR	100
Return_location_id	BIGINT	20

Business_address	VARCHAR	255
Business_location_id	BIGINT	20
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.17 **SUPPORT_TICKETS:**

Fields	Data Type	Size
Id	BIGINT	20
User_id	BIGINT	20
User_type	BOGINT	20
Moderator_id	BIGINT	20
Moderator_type	VARCHAR	255
Resolved_at	TIMESTAMP	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

$5.1.18 \ \textbf{SUPPORT_TICKET_MESSAGES:}$

Fields	Data Type	Size
Id	BIGINT	20
Support_ticket_id	BIGINT	20
Title	VARCHAR	255
Message	MEDIUMTEXT	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.19 TRANSACTIONS:

Fields	Data Type	Size
Id	BIGINT	20
user_id	BIGINT	20

User_type	VARCHAR	255
reference_id	BIGINT	20
Reference_type	VARCHAR	255
Туре	ENUM	
Amount	DECIMALS	
Balance	DECIMALS	
Note	TEXT	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.20 SERVICES:

Fields	Data Type	Size
Id	BIGINT	20
category_id	BIGINT	20
Name	VARCHAR	255
featured_image_id	VARCHAR	255
slug	VARCHAR	255
Description	MEDIUMTEXT	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.21 **SERVICE_CATEGORIES:**

Fields	Data Type	Size
Id	BIGINT	20
Name	VARCHAR	255
featured_image_id	VARCHAR	255
slug	VARCHAR	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.22 **SERVICE_SELLER:**

Fields	Data Type	Size
Id	BIGINT	20
service_id	BIGINT	20
Seller_id	BIGINT	20
Price	DECIMAL	(16,4)
Description	MEDIUMTEXT	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.23 **SELLER_SELLER_REVIEWS:**

Fields	Data Type	Size
Id	BIGINT	20
Service_seller_id	BIGINT	20
Service_request_id	BIGINT	20
Buyer_id	BIGINT	20
Review	TEXT	
Rating	SMALLINT	5
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.24 **SERVICE_QUESTIONS:**

Fields	Data Type	Size
Id	BIGINT	20
service_id	BIGINT	20
Seller_serrvice_id	BIGINT	20
Name	VARCHAR	255
Туре	ENUM	
Question	TEXT	10

Is_locked	TINYINT	1
Is_required	TINYINT	1
Auth_rule	VARCHAR	255
item_type	Varcher	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.25 **SERVICE_REQUESTS:**

Fields	Data Type	Size
Id	BIGINT	20
Service_seller_id	BIGINT	20
buyer_id	BIGINT	20
Location_id	BIGINT	20
Completed_at	TIMESTAMP	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

$5.1.26 \ \textbf{SERVICE_REQUEST_ANSWERS:}$

Fields	Data Type	Size
Id	BIGINT	20
request _id	BIGINT	20
question_id	BIGINT	20
Answer_id	BIGINT	20
Answer_type	VARCHAR	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

$5.1.27 \ \ \textbf{SERVICE_REQUEST_INVOICE_DETAILS:}$

Fields	Data Type	Size
--------	-----------	------

Id	BIGINT	20
request _id	BIGINT	20
Detail	Text	
COST	DECIMAL	(8,2)
Quantity	INT	11
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.28 **SERVICE_REQUEST_QUOTES:**

Fields	Data Type	Size
Id	BIGINT	20
request _id	BIGINT	20
Quote	DECIMAL	(8,2)
Туре	ENUM	
Note	MEDIUMTEXT	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.29 **SERVICE_REQUEST_INVOICES:**

Fields	Data Type	Size
Id	BIGINT	20
request _id	BIGINT	20
charge_id	BIGINT	20
Description	MEDIUMTEXT	
Paid_at	TIMESTAMP	
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.30 **SERVICE_QUESTION_CHOICE:**

Fields	Data Type	Size
Id	BIGINT	20
question_id	BIGINT	20
Choice	VARCHAR	255
Created_at	TIMESTAMP	
Updated_at	TIMESTAMP	

5.1.31 SERVICE_REQUEST_ANSWER_TEXT_MULTILINES:

Fields	Data Type	Size
Id	BIGINT	20
Answer	TEXT	

5.1.32 SERVICE_REQUEST_ANSWER_CHOICES:

Fields	Data Type	Size
Id	BIGINT	20
Choice_id	BIGINT	20

5.1.33 SERVICE_REQUEST_ANSWER_DATES:

Fields	Data Type	Size
Id	BIGINT	20
Answer	DATE	

5.1.34 SERVICE_REQUEST_ANSWER_TEXTS:

Fields	Data Type	Size
Id	BIGINT	20
Answer	VARCHAR	255

5.1.35 SERVICE_REQUEST_ANSWER_DATE_TIMES:

Fields	Data Type	Size
Id	BIGINT	20
Answer	DATETIME	

5.1.36 SERVICE_REQUEST_ANSWER_FILES:

Fields	Data Type	Size
Id	BIGINT	20
File_path	VARCHAR	255
File_type	VARCHAR	255

5.1.37 SERVICE_REQUEST_ANSWER_TIMES:

Fields	Data Type	Size
Id	BIGINT	20
Answer	TIME	

5.1.38 SERVICE_REQUEST_ANSWER_BOOLEANS:

Fields	Data Type	Size
Id	BIGINT	20
Answer	TINYINT	1

6. Algorithm & Implementation

6.1 Seller's Registration:

Display Registration form. Validate Registration form on submission.

If (validation-successful)

Store seller's information in database Set approval to false. Set phone verification to false. Set email verification to false. Send email to seller's provided email address.

Open Email Verification Link
If (valid-verification-link)
Set seller's email to verified

Show Success message of email verification Show Phone Form Page Validate Phone form on submission.

If (valid-phone-number)

Send Phone Verification Code
Show Phone Verification Page
Validate Verification Code on submission
If(valid-verification-code)
Set seller's phone to verified

Show Address Form Validate Addresses on submission If (valid-addresses) Update Addresses of seller

Show Approval Status Page

Else

Show Error Message

Else

Show Error Message

Else

Show Error Message

Else

Show Error Message

Else

Show Error Message

6.2 Order Product:

Display "Products".

Add Product Items to Cart

Display Cart Page when click on Cart button

Display Checkout page when click on Checkout button

Display Payment Methods

Display Payment Page of selected payment method

Validate Payment Information on Submission.

If (validation-successful)

Charge Payment

Store Product Orders Information in Database

Notify Seller of Order

Show Success Message

Else

Show Error Message

6.3 Order Service:

Display "Services".

Display Service Page when Select Service

Display all Sellers for the service

Display Questions Form for Selected Service

Validate Questions Inputs on Submission.

If (validation-successful)

Create Service Request in database

Notify Seller

Show Success Message to wait for quotation

Else

Show Error Message

6.4 Create Quotation/Invoice for Service Request (Seller):

Display "Service Requests".

Display ServiceRequest Page when Select Service Request

Display Answers for Selected Service Request

Display Invoice/Quote Form

Validate Invoice Inputs on Submission.

If (validation-successful)

Create Invoice for Service Request in database

Notify Buyer

Show Success Message

Else

Show Error Message

6.5 Pay Invoice for Service Request (Buyer):

Display "Service Requests".

Display ServiceRequest Page when Select Service Request

Display Invoices for Service Request

Display Payment Form when select Unpaid Invoice

Display Payment Methods

Display Payment Page of selected payment method

Validate Payment Information on Submission.

If (validation-successful)

Charge Payment

Store Payment Information in Database for Service Request

Notify Seller of Payment

Show Success Message of successful order placement.

Else

Show Error Message

6.6 Add New Moderator as Admin:

Display "Add Moderator" form.

Validate form on submission.

If (validation-successful)

Store moderator's information in database

Send welcome email to moderator's email address along with their password.

Show Success Message

Else

Show Error Message

6.7 Edit Moderator as Admin:

Display "Edit Moderator" form.

Validate form on submission.

If (validation-successful)

Update moderator's information in database

Show Success Message

Else

Show Error Message

7. Software requirements traceability matrix

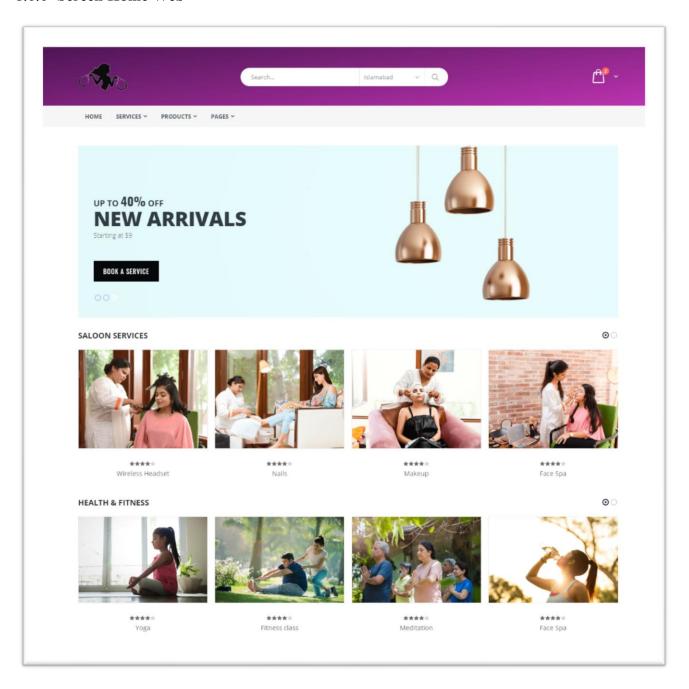
Table 1 Requirements Traceability Matrix

Req. Number	Ref. Item	Design Component	Component Items
FR001-FR014	Class Diagram	Person	Register(), Login(),
FR021-FR026,	Class Diagram	Person	UpdateProfile()
FR031-FR034			
FR312-FR320	Class Diagram	Admin	ApproveSeller()
FR107-FR124	Class Diagram	Moderator, SupportTicket	TakeSupportTickets(), ResolveSupportTicket()
FR045-FR051	Class Diagram	Moderator	ApproveProduct()
FR066-FR073	Class Diagram	Moderator	ApproveService()
FR001-FR014	Class Diagram	Seller	VerifyPhone(), VerifyEmail()
FR045-FR055	Class Diagram	Seller	AddProduct(), ModifyProduct()
FR066-FR076	Class Diagram	Seller	AddService(), ModifyService()
FR149-FR152	Class Diagram	Buyer	RequestSerivce(),
FR199-FR204	Class Diagram	Buyer	SearchProduct()
FR147-FR148	Class Diagram	Buyer	SearchService()
FR126-FR138	Class Diagram	Buyer	Checkout()
FR252-FR269	Class Diagram	ProductCategory	CreateCategory(), ModifyCategory()
FR272-FR289	Class Diagram	ServiceCategory	CreateCategory(), ModifyCategory()
FR292-FR310	Class Diagram	Tags	CreateTag(), ModifyTag(),
FR141-FR142	Class Diagram	Service	DisplayService(), GetServiceReviews()
FR199-FR200	Class Diagram	Product	DisplayProducts(), GetProductDetails(),
FR133-FR-135	Class Diagram	Order, ShippingInfo	PlaceOrder(),UpdateShippingInfo()
FR136-FR-137	Class Diagram	PaymentGateway	PaymentRequest(), PaymentResponse()

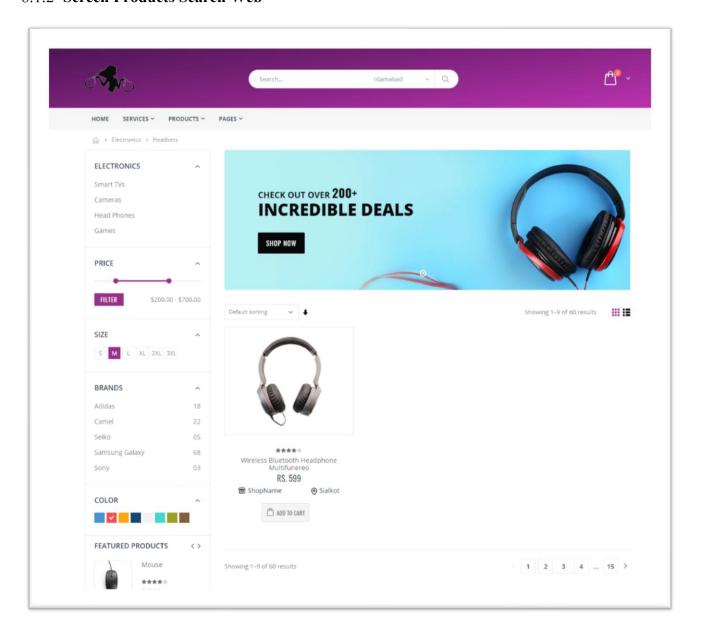
8. Human interface design

8.1 Screen images

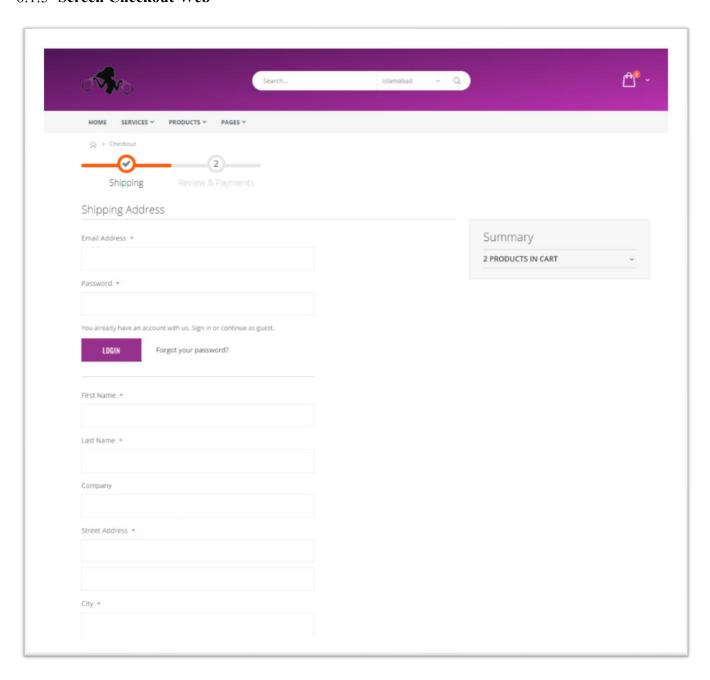
8.1.1 Screen Home Web



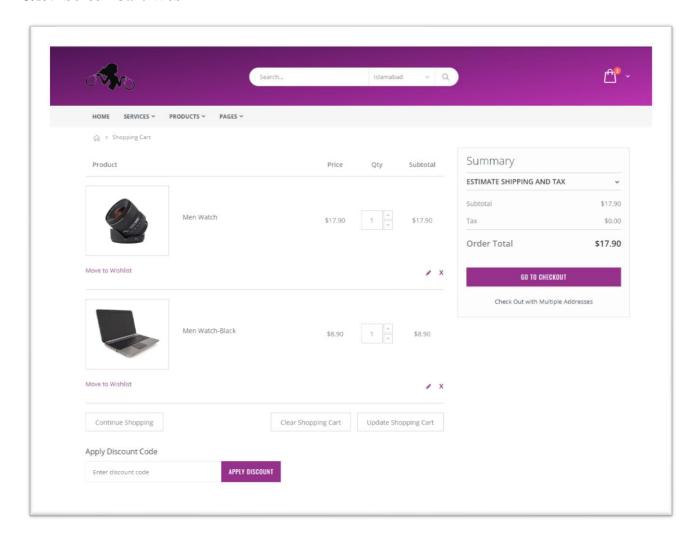
8.1.2 Screen Products Search Web



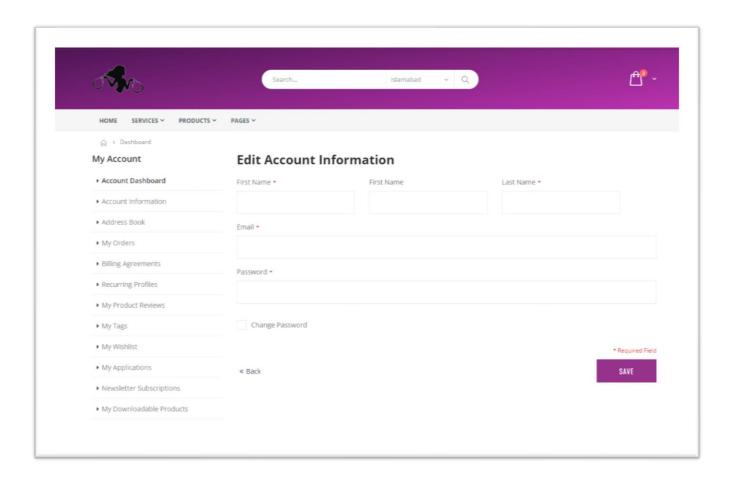
8.1.3 Screen Checkout Web



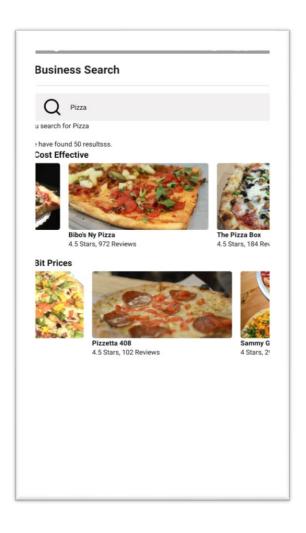
8.1.4 Screen Cart Web



8.1.5 Screen Settings Web



8.1.6 Screen Home Mobile



8.2 Screen objects and actions

8.2.1 Screen Home Web

This is main screen of web application. It will be accessible to all users. It will display the top products and services to users.

8.2.2 Screen Products Search Web

This is page have search and filters form for products. This page shows products from queried inputs.

8.2.3 Screen Checkout Web

This page show payment methods and payment forms to user after they proceed from cart.

8.2.4 Screen Cart Web

This page shows all product items to user that they have added in their cart. This page is used to review products and finalize order.

8.2.5 Screen Settings Web

This is settings page for user. A user must be logged in to access this page. This page can be used to update profile information like name and address Info.

8.2.6 Screen Home Mobile

This is main screen of mobile application. It is accessible to all users. It displays the top products to users.