Chapter 3- Design

Chapter 3.1- Introduction to design

Design is the construction or activity specification or plan or the result of that plan in the form of a prototype, finish product or process. It is also the plan to show how the look and function of the system.

Chapter 3.2- Structural Design/ Model

Structural modelling is the modelling based on the mathematical model, computer algorithm and statistical model that fits network of constructs to data.

Chapter 3.2.1- Final Class Diagram

Class diagram is the illustration of relationship and source code dependency among classes in UML.

This approach is taken to as it shows the static structure of classifier in the system and its helpful for developers and other team members too.

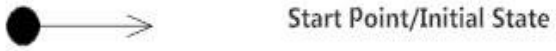
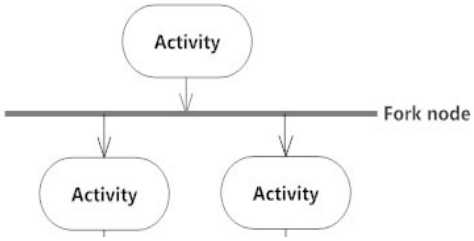
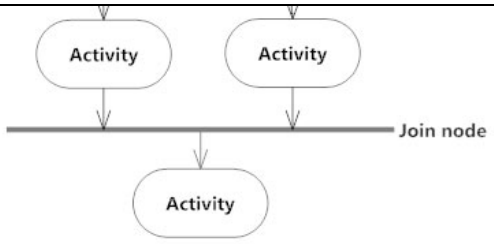
Chapter 3.3- Behavioral Model

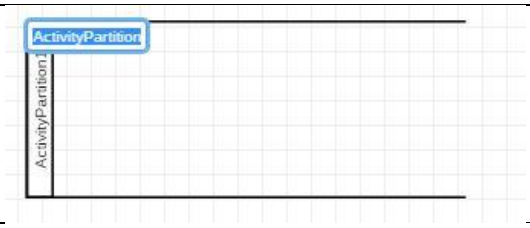
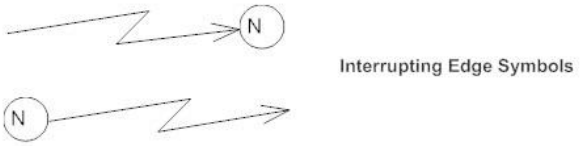
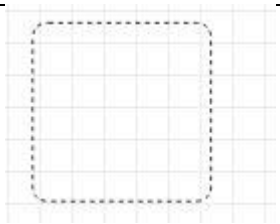
Behavioral Model mean using the available and relevant customer and business spending data to estimate future behavior.

Chapter 3.3.1- Activity Diagram

In UML, activity diagram is defined as the graphical representation of an executed set of procedural system activities and considered a state chart diagram variation.

This approach is taken to describe how the work flow in the system. This approach tells us what the users are capable of accomplishing in the system.

Notation used	Notation	Description
Action		Shows what activity is done
Initial		Denotes start of the activity
Final		Denotes end of the activity
Fork		split a single incoming flow into multiple concurrent flows
Join		Joins two action into one
Decision		Decides the condition

Control Flow		Show the flow of activity
Send Signal		Send message through the system
Accept Signal		Receive the message from send signal
Swimlane		group related activities into one column
Activity Interrupt		interrupts the flow denoted with a lightning bolt.
Accept Time Event		event that stops the flow for a time
Interruptible Activity Region		Activity terminated if interruption occurs

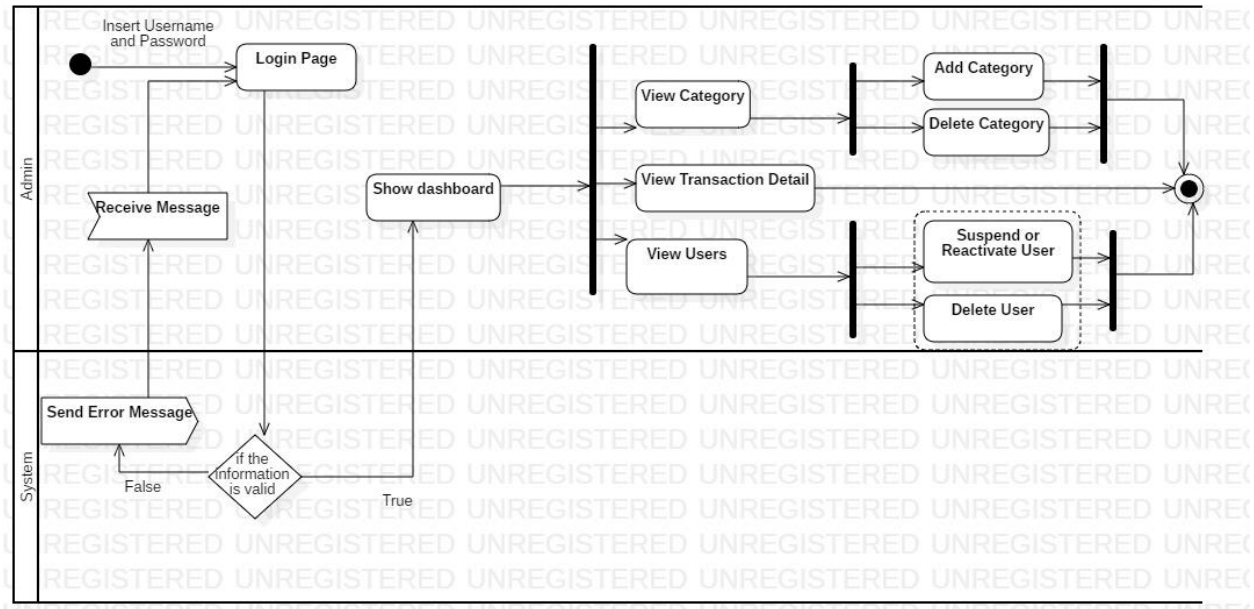


Figure 1: Admin Activity Diagram

The following activity diagram show how the activity flow of the admin. Admin login the system providing the username and password which is validated in the system. If true then admin is sent to dashboard else back to login page. In the dashboard there are two option: View category where the admin either add or delete category and View Users where admin either suspend user or reactivates the suspended user and delete user and also can see the total transaction details. Finally, the activity flow ends.

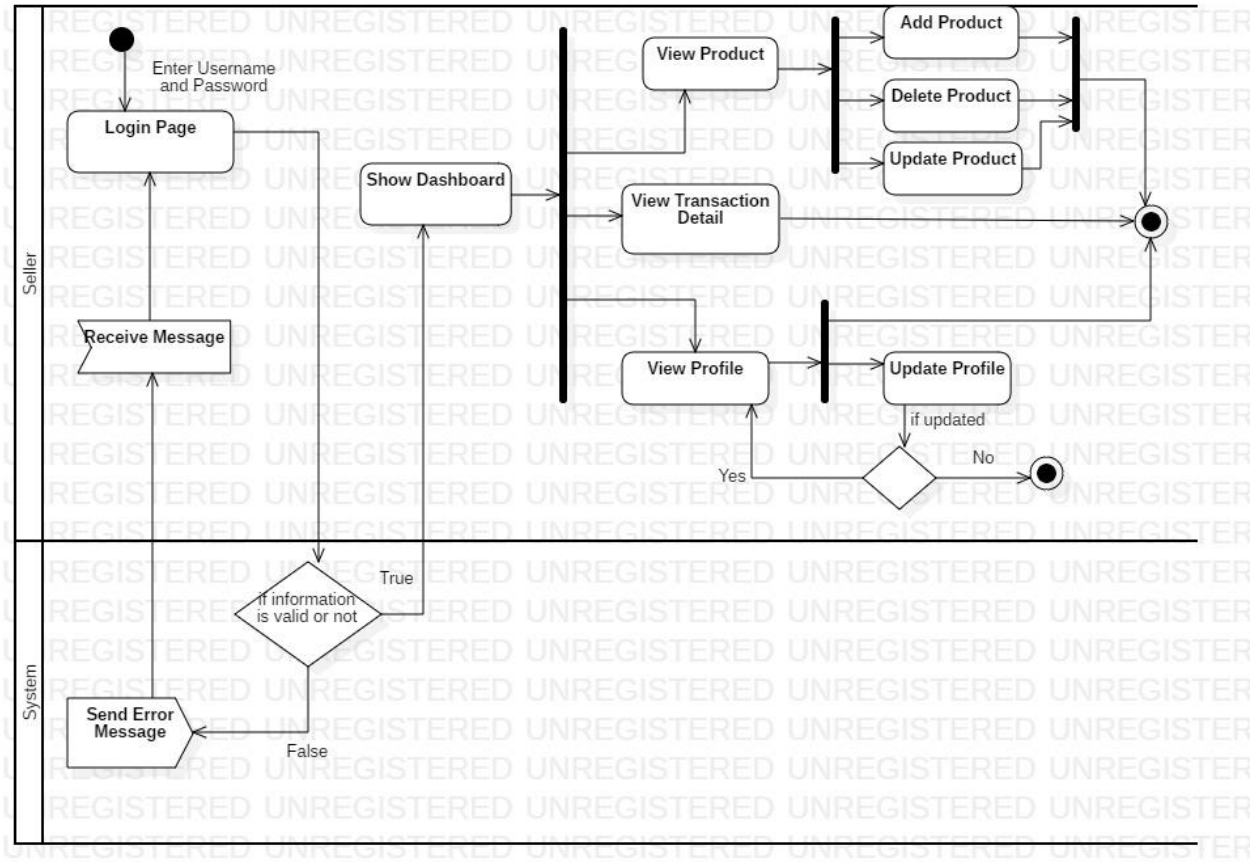


Figure 2: Seller Activity Diagram

The following activity diagram is based on the seller where he/she enters his login information and If correct sent to dashboard else back to login page. In dashboard he/she can view the product he/she have listed where if needed can add product, update any product if needed and delete the product if he don't want to keep, he/she can also see the transaction detail of his/her product and he/she can view his/her profile and update it if needed. Finally, the activity flow ends.

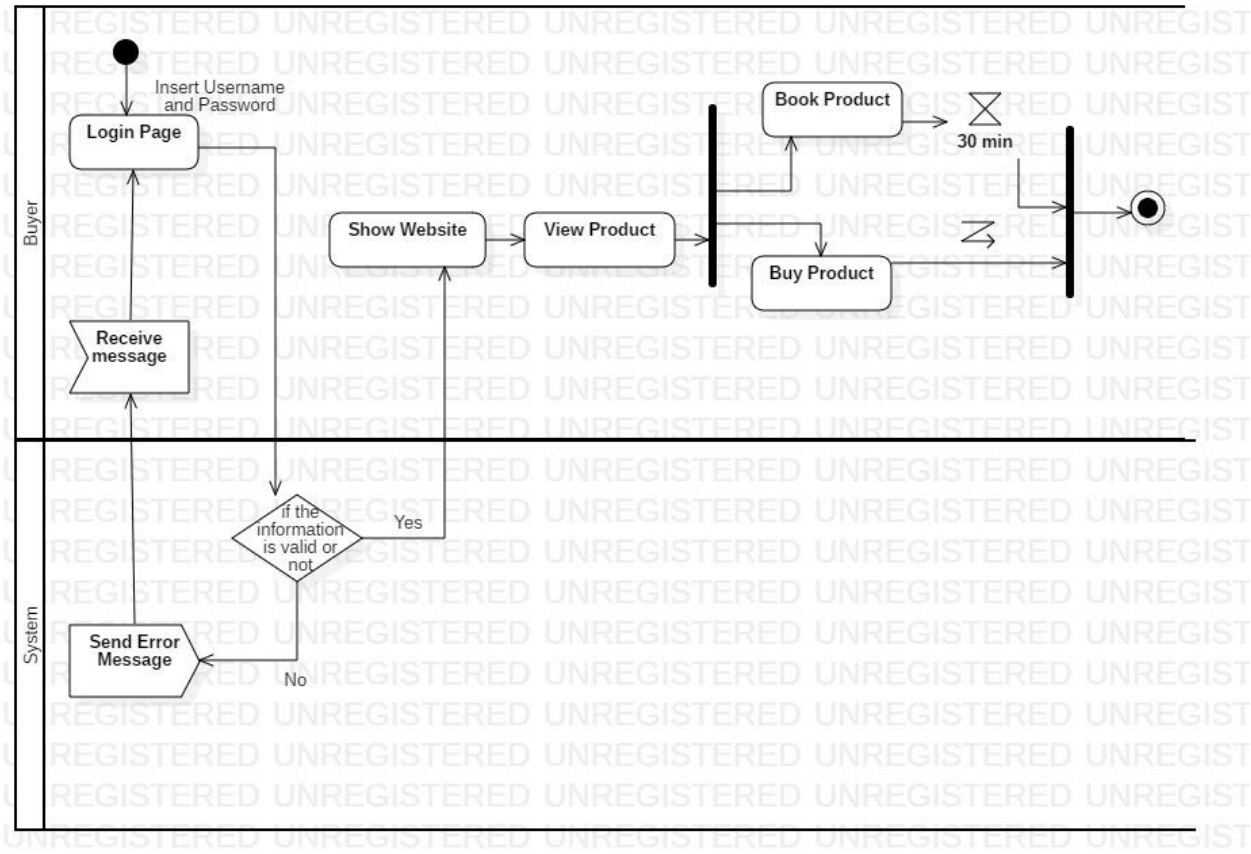


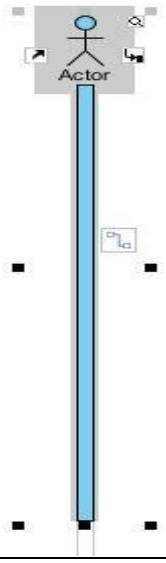
Figure 3: Buyer Activity Diagram

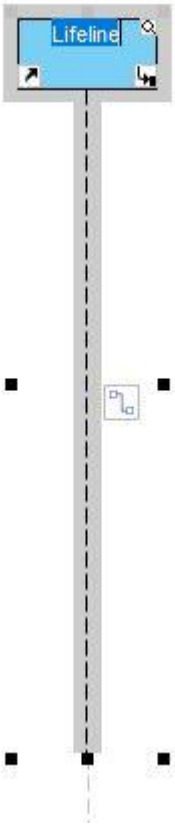
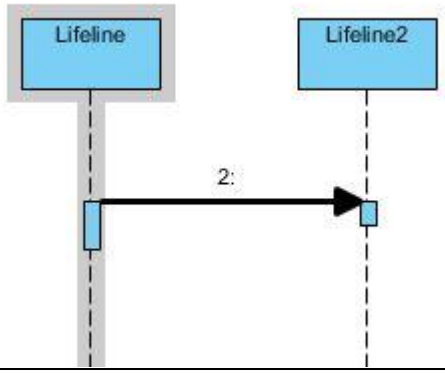
The following activity flow show how buyer works where buyer login the system and if correct value is provided sent to website where he views the product and if buyer likes it can either book it or buy it. If product is booked then the booking last for thirty minutes and after that it ends. If buyer click buy and don't want to buy it can be interrupted and the flow ends here.

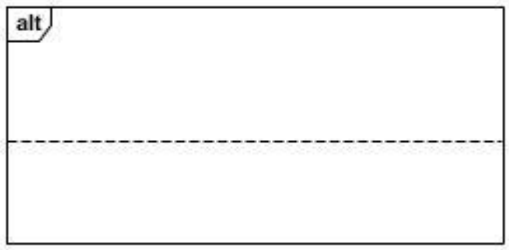
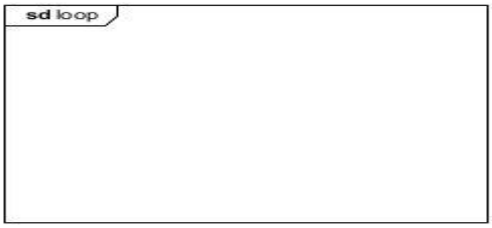
Chapter 3.3.2- Sequence Diagram

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.

This approach is taken to show at what time what interaction occurs in the system. This allows to know after what process what will occur.

Notation Used	Diagram	Description
Actor		the particular sequence diagram is owned by a use case.

Lifeline		interact with each other in the system during the sequence.
Message Arrow		Describes flow of message

Alternate frame		It models 'if…else' logic
Loop Frame		Represents repetitive sequence

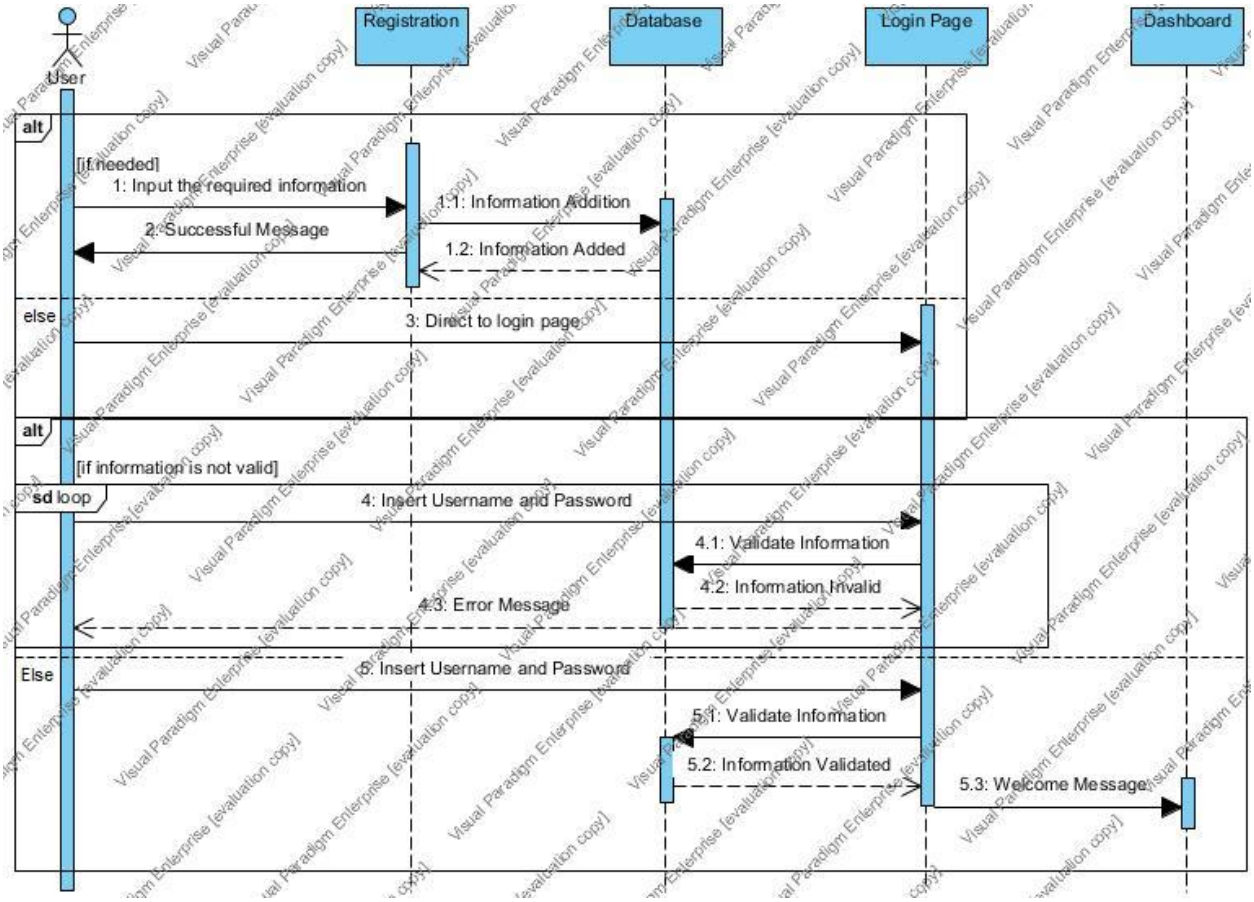


Figure 4: Login and registration Sequence

The following sequence show how the user registers and login in the system. If the required field in registration is filled then the user is created and directed to login page. Here the user provides the login credentials and if correct sent to dashboard else error message is displayed.

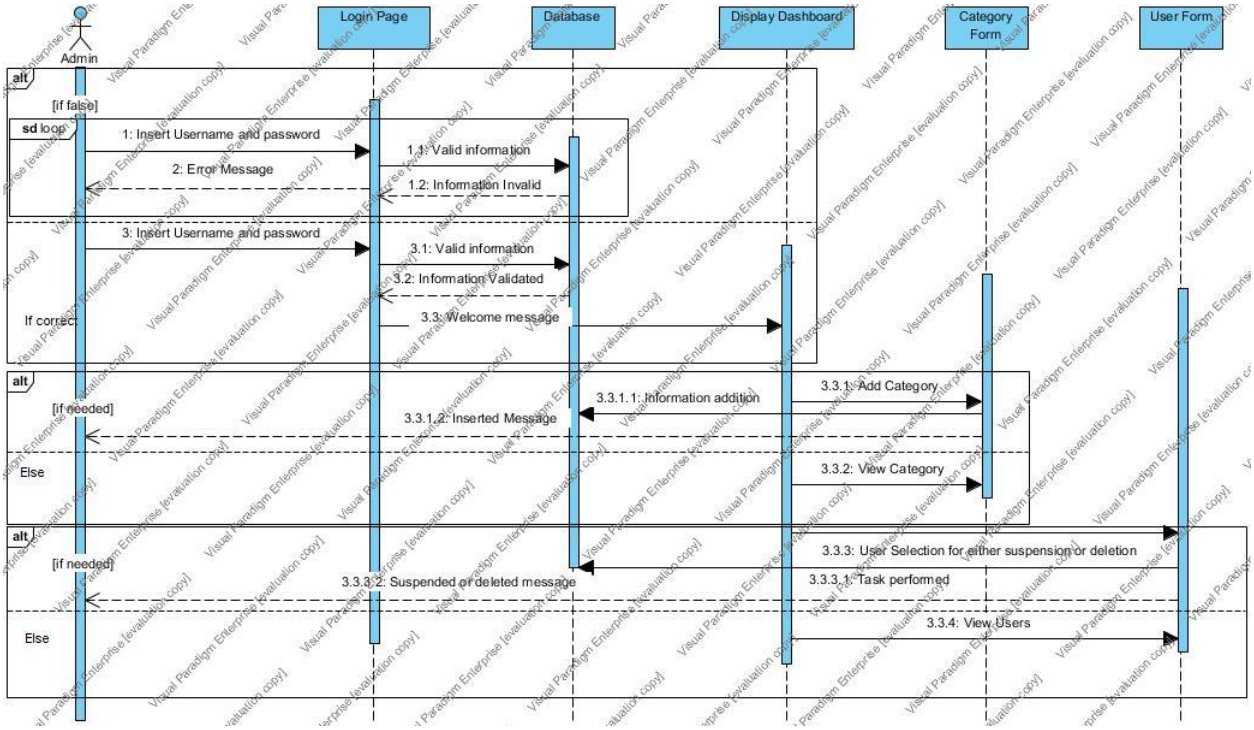


Figure 5: Admin Sequence

The following sequence diagram show how the admin interacts with the system. First the admin provides login credentials if correct sent to dashboard else error message is generated. In dashboard admin can add category and manage users. In category form if the admin adds the category then added message is displayed and if the admin either delete or suspend or reactivate the user the message is displayed as per the action.

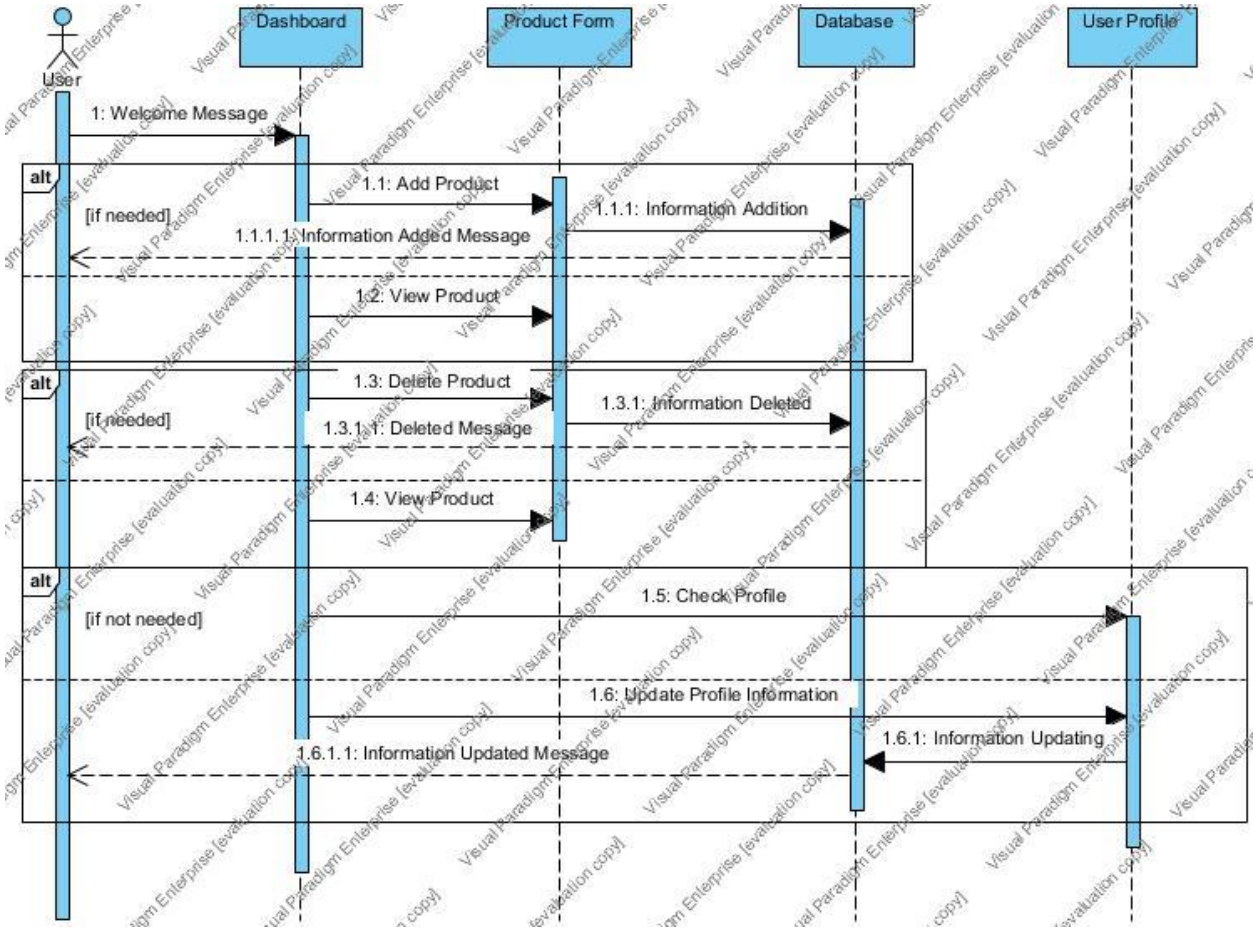


Figure 6: User Sequence

The following sequence show how the user add the product and manage their profile. When the product is added, added message is sent to the user. If deleted, deleted message and if no action is performed user can just view the product. The user can change profile information as he needed and if done updated message is provided.

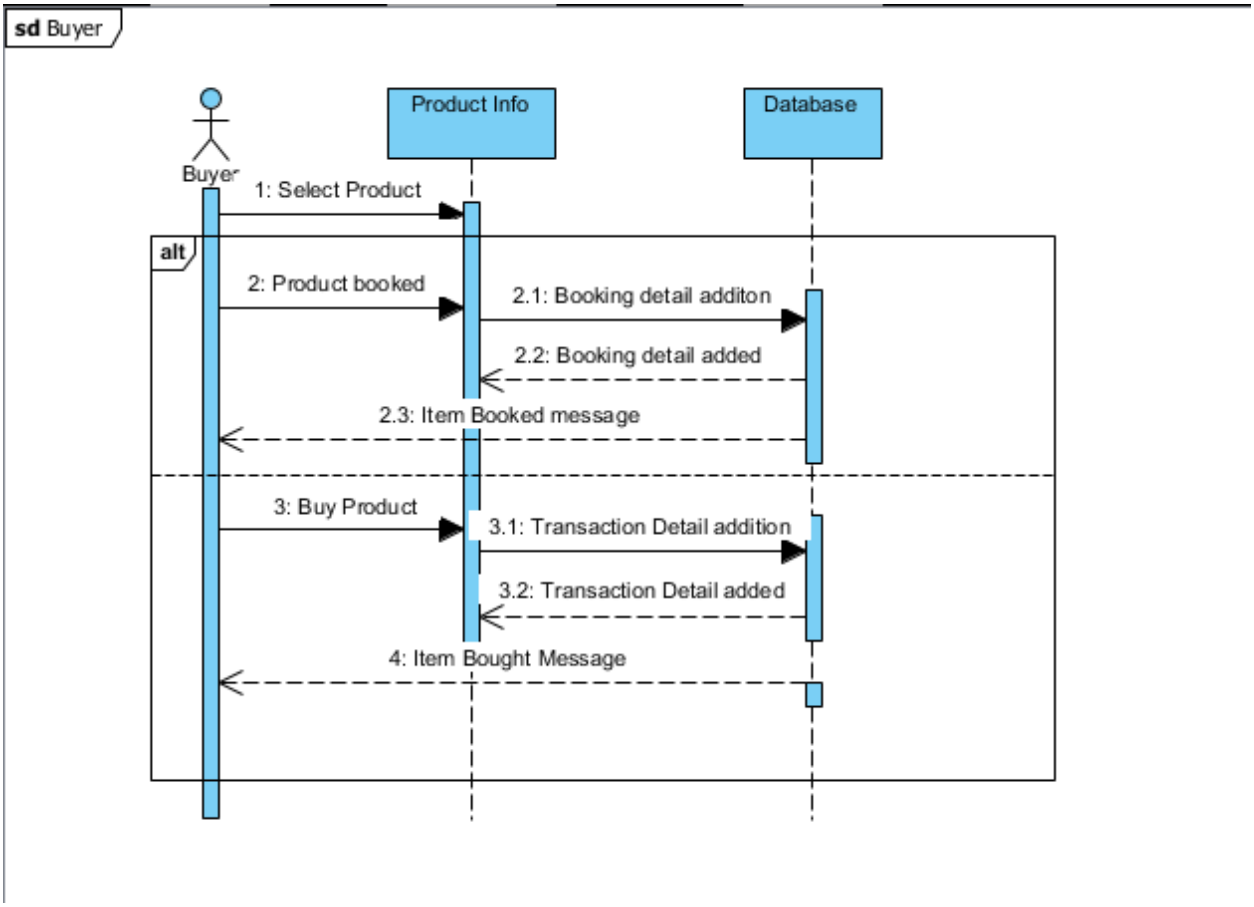


Figure 7: Buyer Sequence

The following diagram show the buyer sequence diagram. Here the buyer first selects the product then he either book it or buy it as he needed where corresponding message is sent to the buyer as per his action.

Chapter 3.4- Database Model

A database model refers to the logical structure, representation or layout of a database and how the data will be stored, managed and processed within it.

Chapter 3.4.1- Data Dictionary

Data dictionary is the set of files that contains the database's metadata which is the crucial component of any relational database.

Table Name	Attributes	Datatype	Length	Primary key	Foreign Key	Nullable
User	Uid	int		Yes	No	No
	Firstname	varchar	20	No	No	No
	Lastname	varchar	50	No	No	No
	Address	varchar	50	No	No	No
	Email	varchar	100	No	No	No
	Username	varchar	50	No	No	No
	Password	varchar	100	No	No	No
Product	Productid	int		Yes	No	No
	Productname	varchar	100	No	No	No
	Productdetail	varchar	500	No	No	No
	Price	float		No	No	No
	Quantity	int		No	No	No
	Uid	int		No	Yes	No
	Categoryid	int		No	Yes	No
Payment	Paymentid	int		Yes	No	No
	Paymenttime	time		No	No	No
	Paymentdate	date		No	No	No
	Paymentway	varchar	50	No	No	No
	Uid	int		No	Yes	No
Booking	Bookingid	int		Yes	No	No
	Bookingdate	date		No	No	No
	Bookingtime	time		No	No	No
	Uid	int		No	Yes	No
Company	Cid	int		Yes	No	No
	Companynam	varchar	400	No	No	No
	Companyinfo	varchar	20	No	No	No
	Companydeta	varchar	500	No	No	No
	Uid	int		No	Yes	No
Category	Categoryid	int		Yes	No	No
	Categoryname	varchar	50	No	No	No

Figure 8: Data Dictionary

Chapter 3.4.2- ER Diagram

An entity–relationship model describes interrelated things of interest in a specific domain of knowledge. A basic ER model is composed of entity types and specifies relationships that can exist between entities.

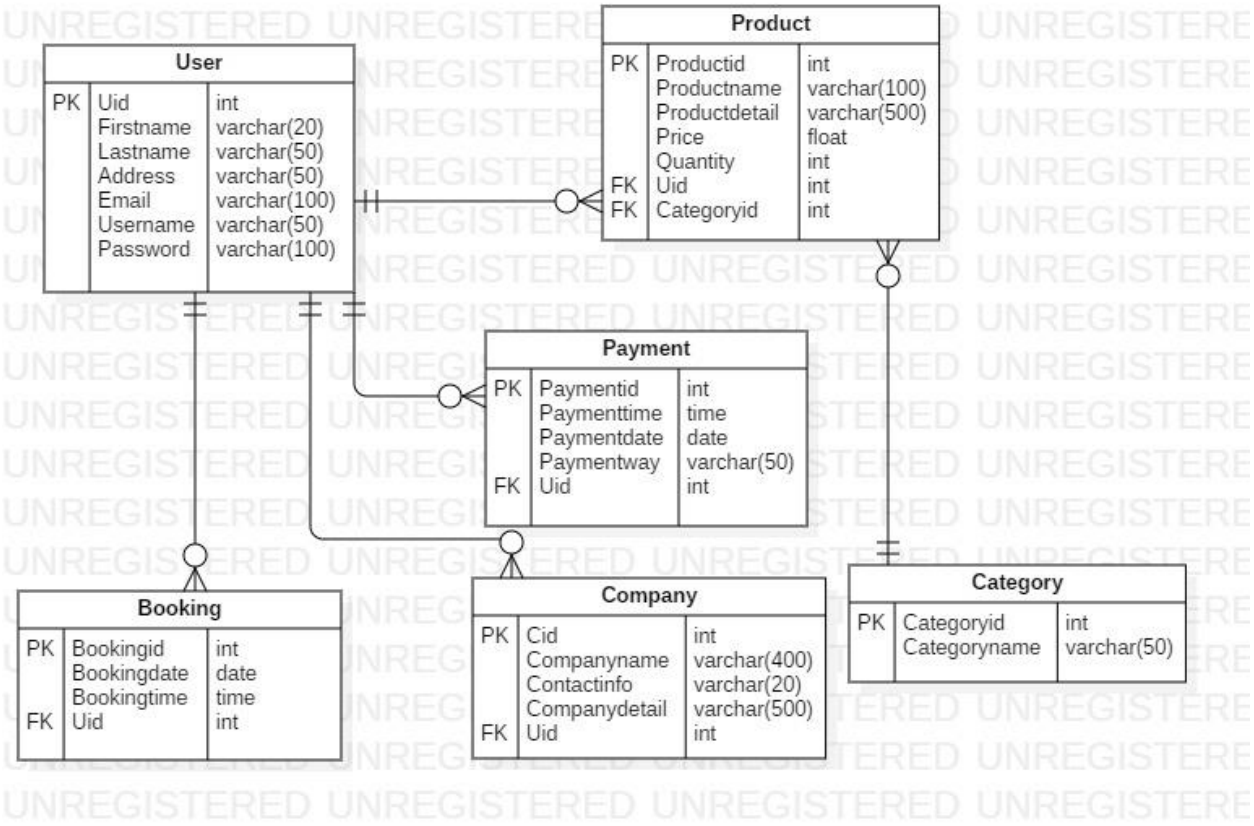


Figure 9: ER diagram

Chapter 3.5- Architectural Model

Architectural model is a scale model that is design to meet the structure and design of the system. My architectural model is based on MVC pattern and it follows 3-tier architecture where the system is divided into:

1. Model
2. View
3. Controller

This approach is taken to describe the structure of the system currently being made.

Chapter 3.6- UI Modeling

User interface modeling is a development technique used by computer application programmers.

Chapter 3.6.1- Prototyping

A prototype is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from. It is a term used in a variety of contexts, including semantics, design, electronics, and software programming.

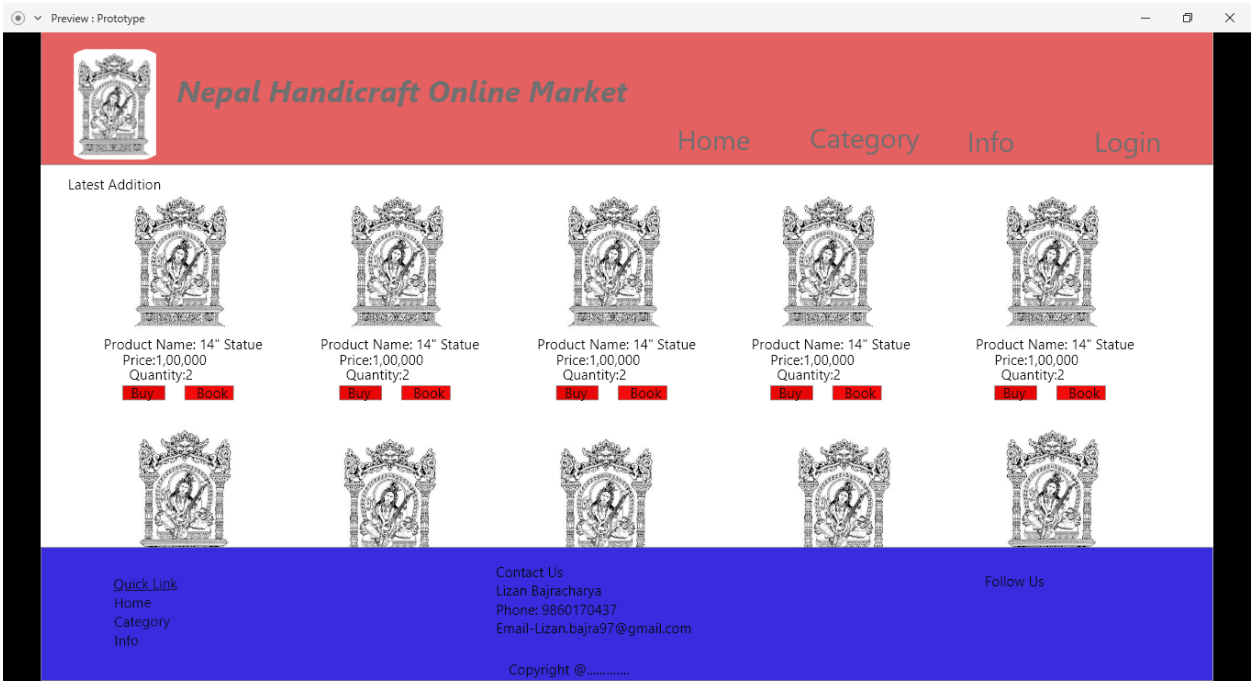


Figure 10: Main Page

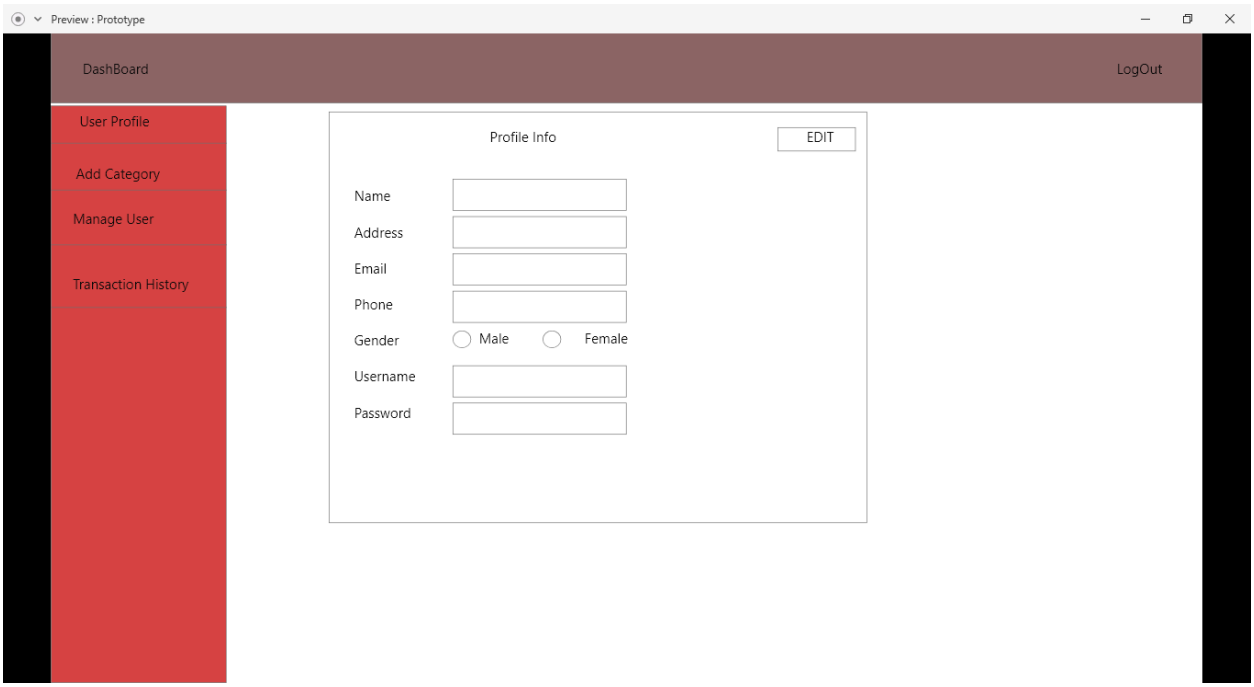


Figure 11: Admin Profile page

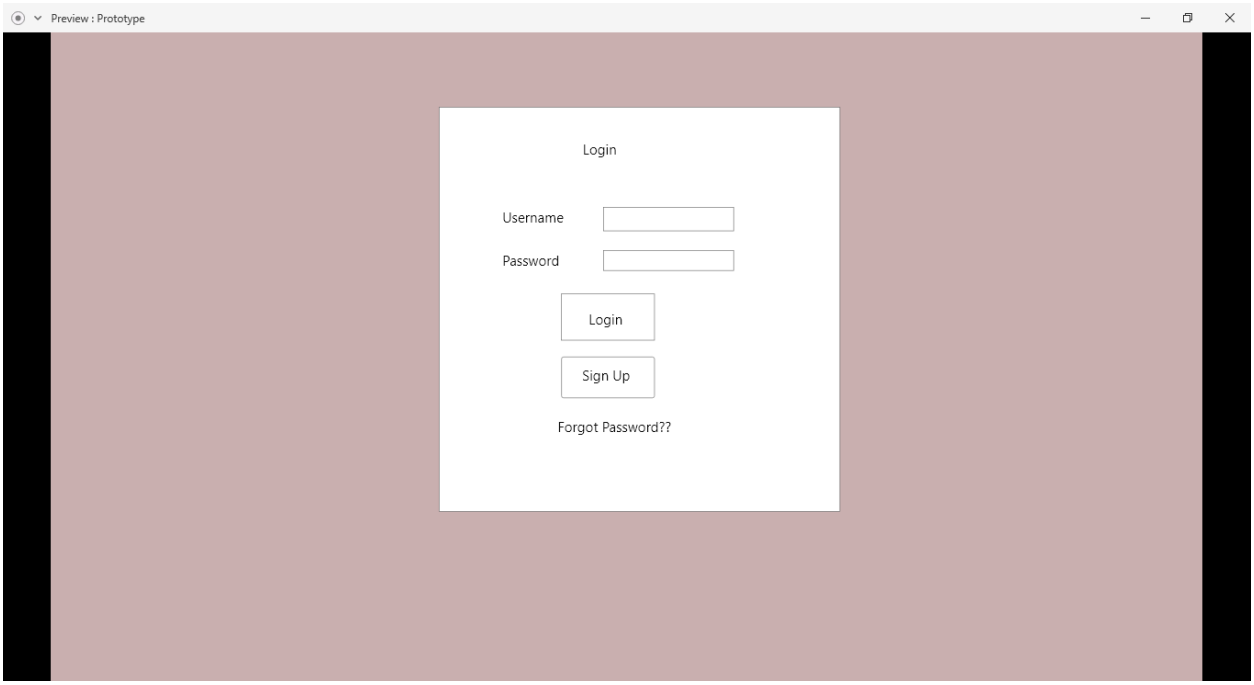


Figure 12: Login Page

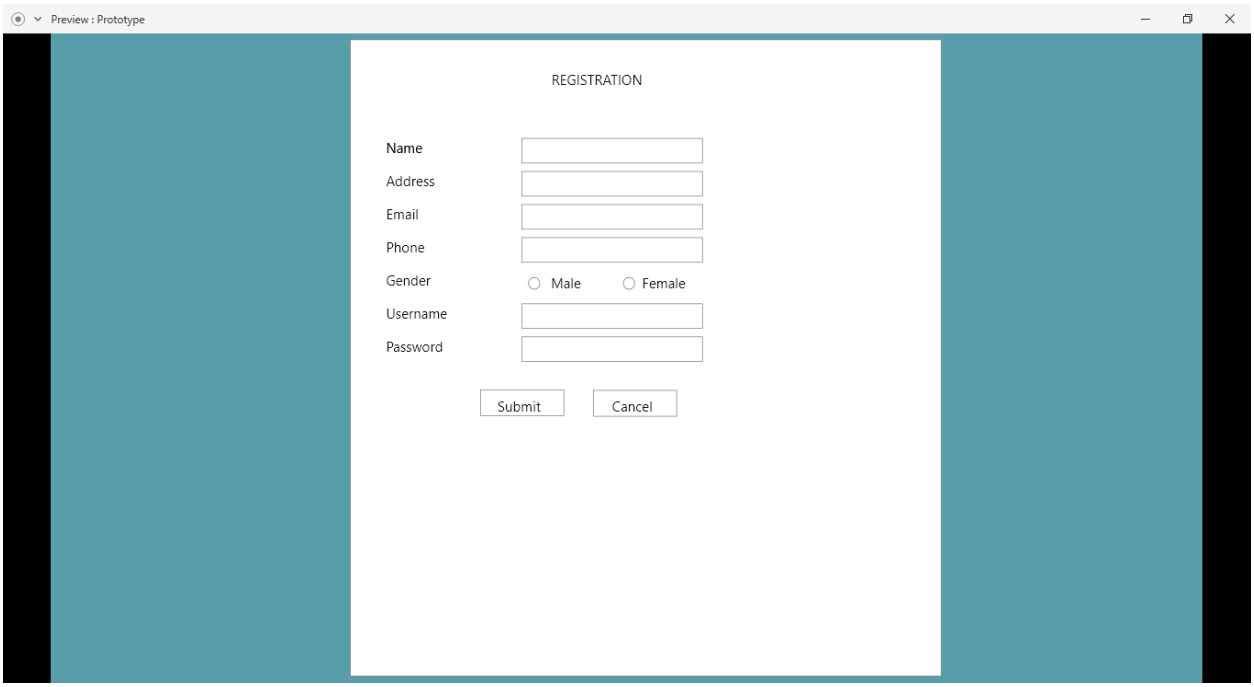


Figure 13: Registration Page

Figure 14: Dashboard

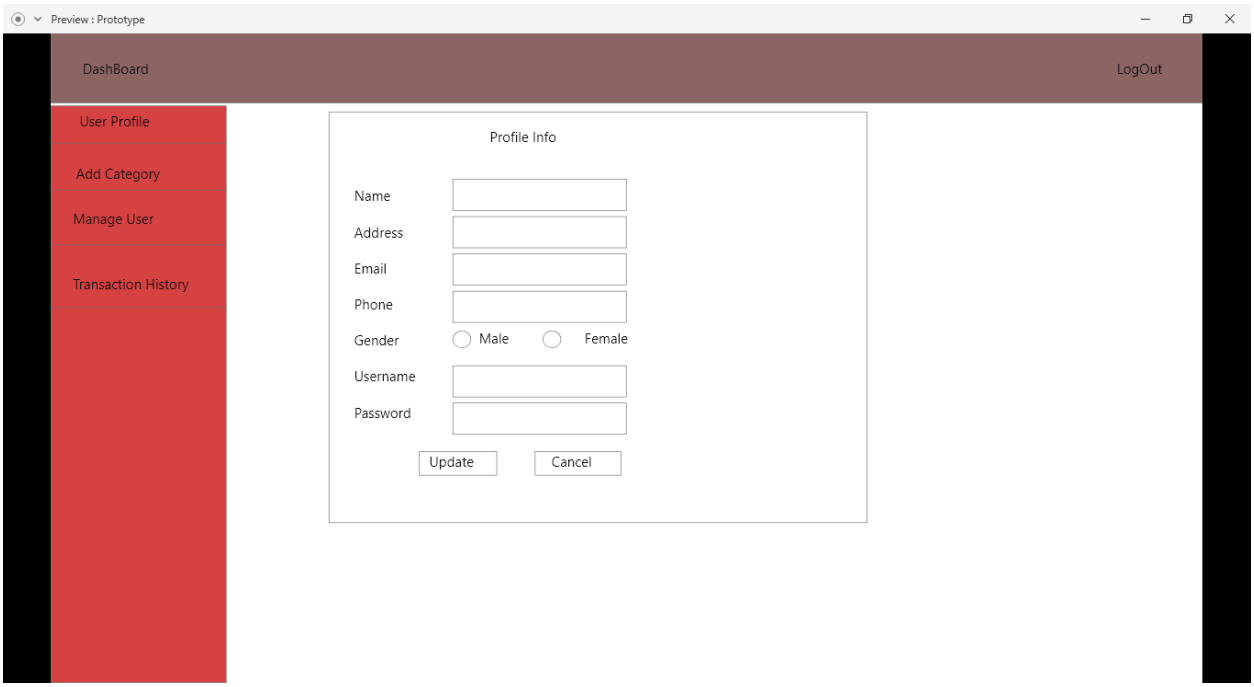


Figure 15: Profile Update page

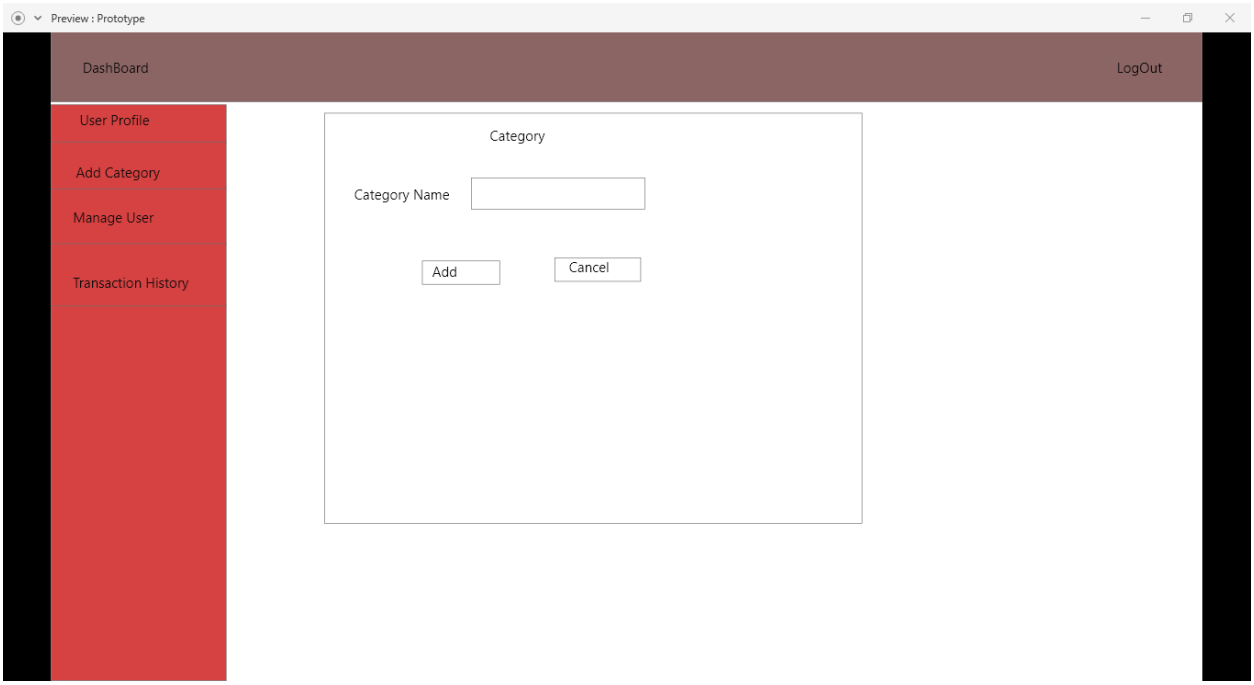


Figure 16: Category Add page

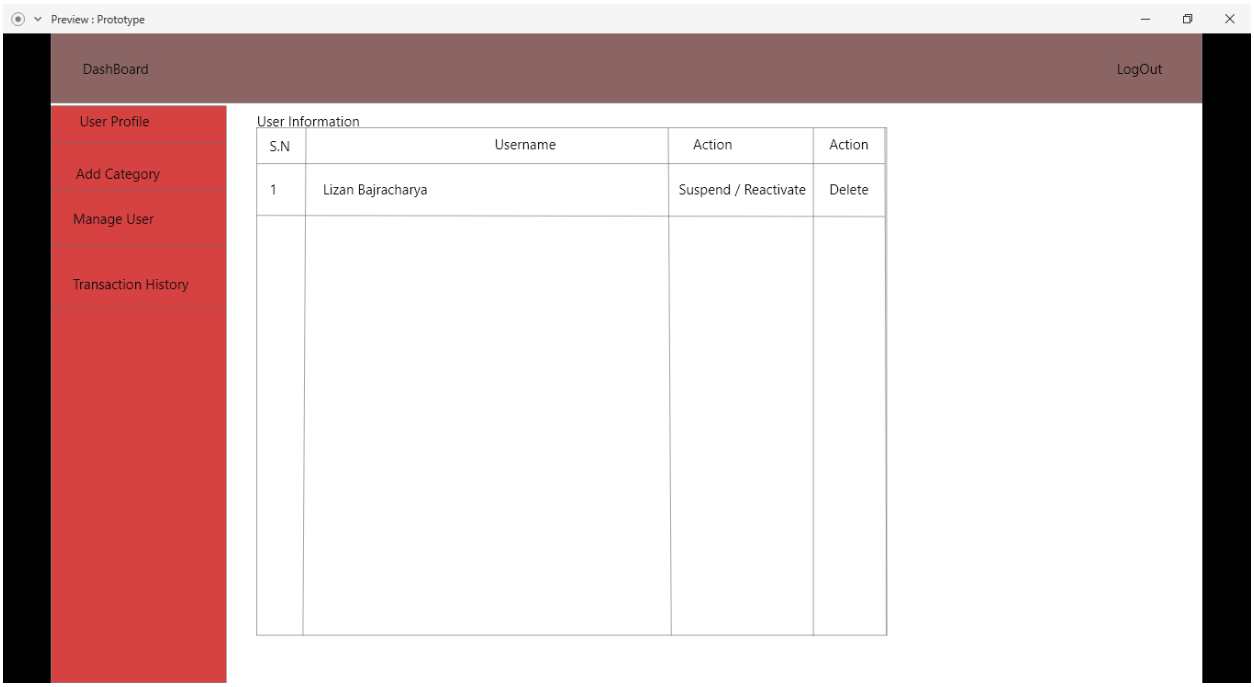


Figure 17: Manage User form

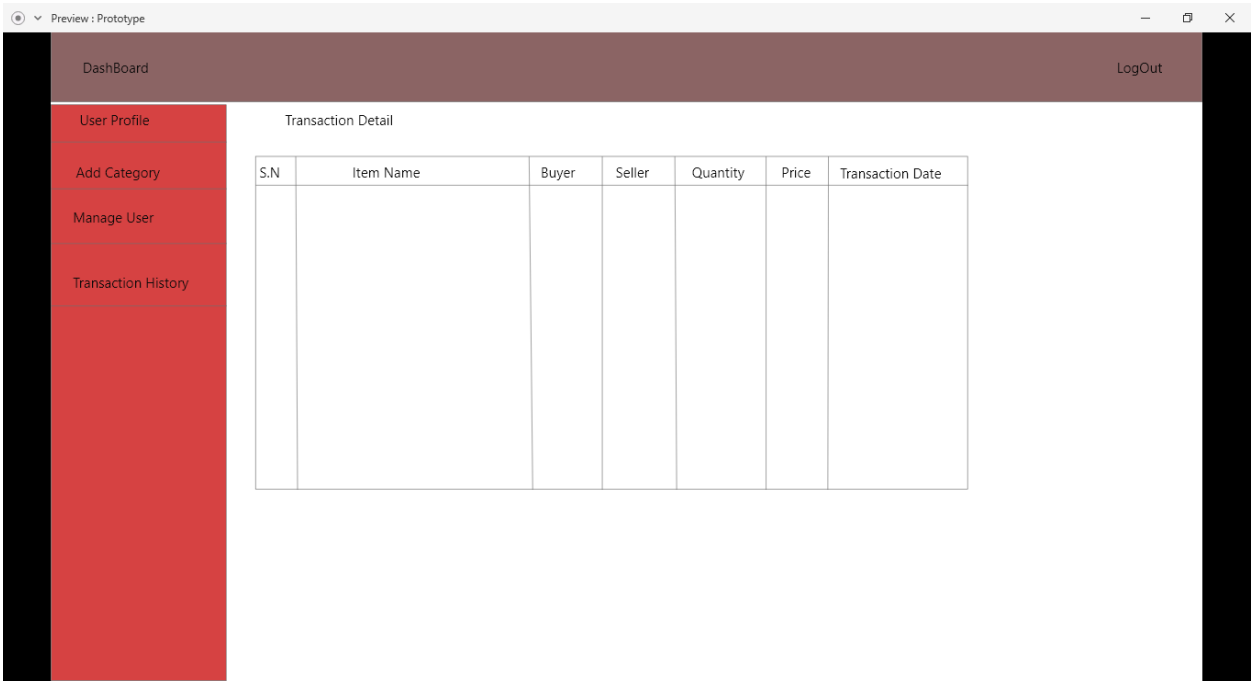


Figure 18: Admin Transaction form

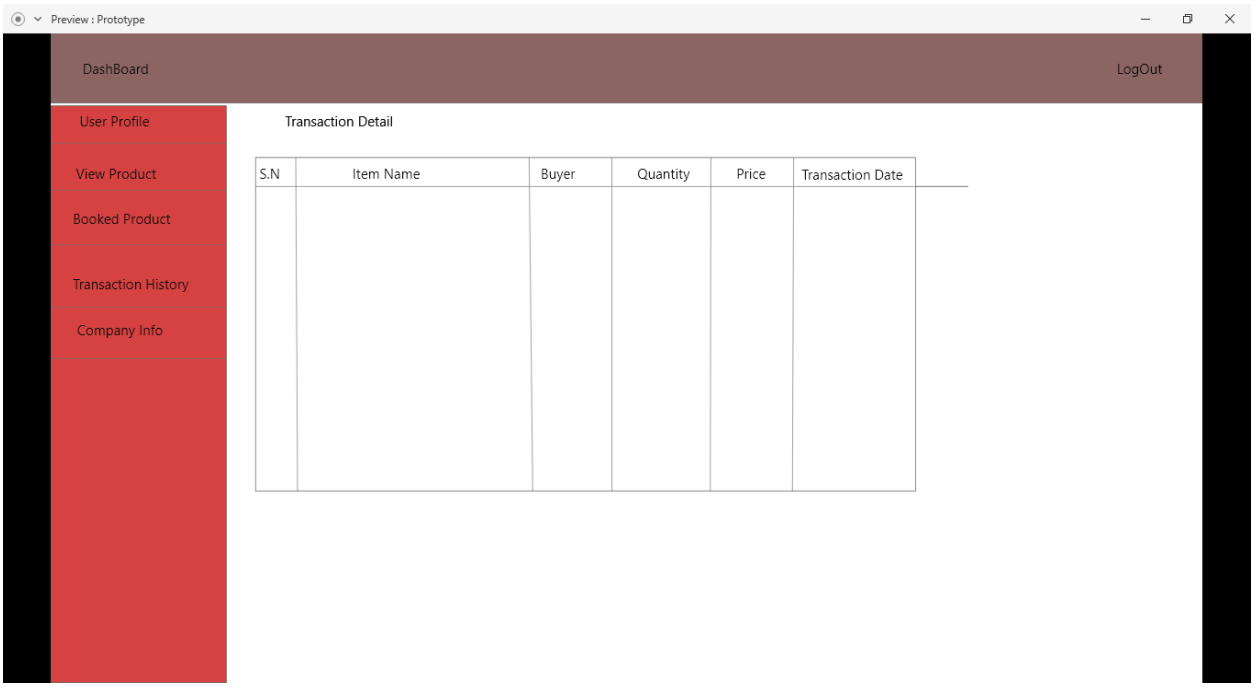


Figure 19: User transaction form

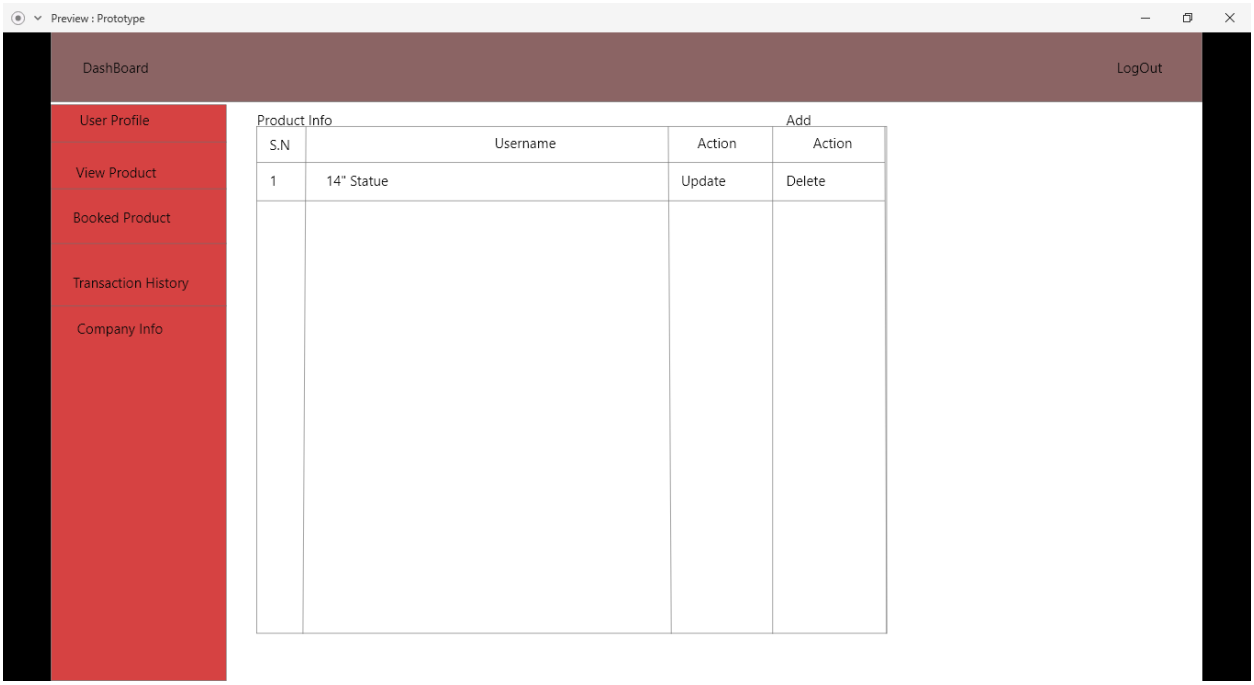


Figure 20: Product Detail form

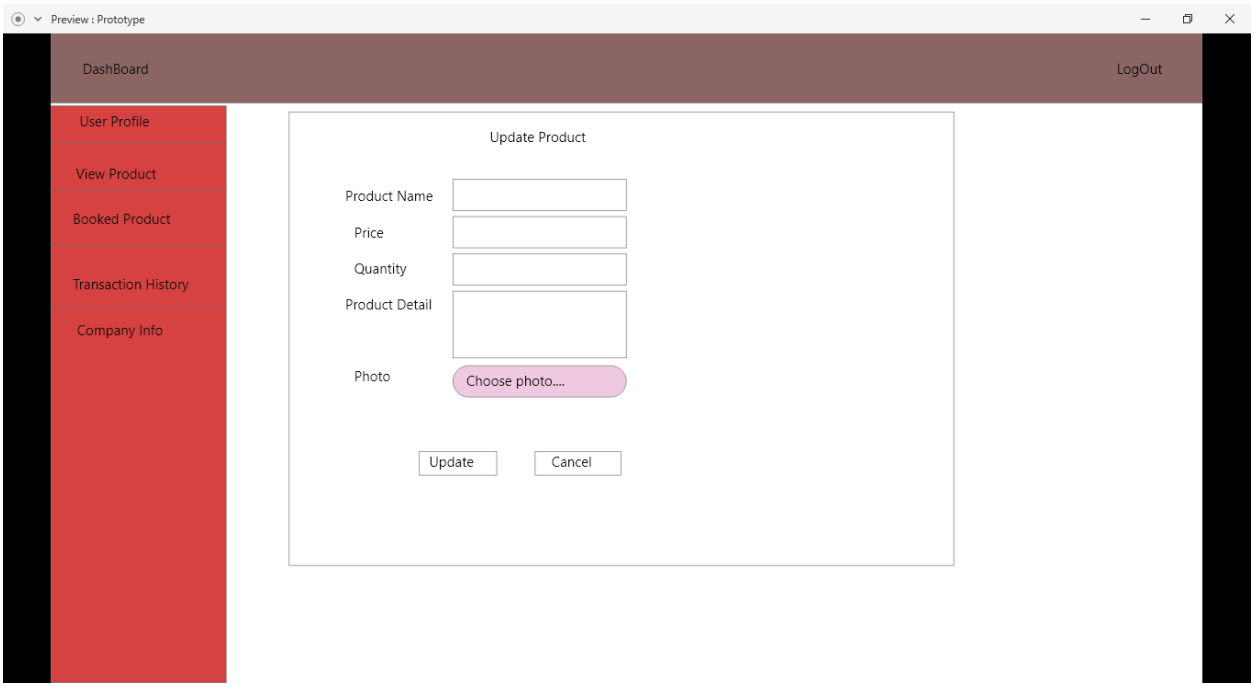


Figure 21: Product Update form

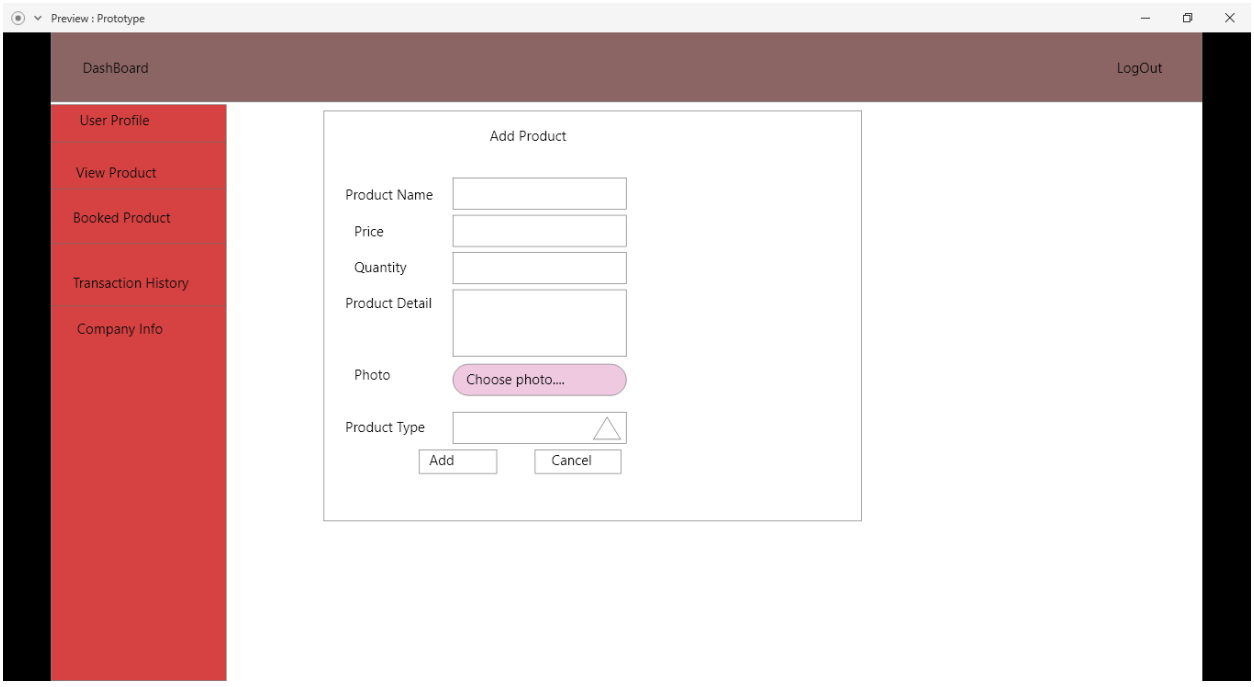


Figure 22: Product Add Form

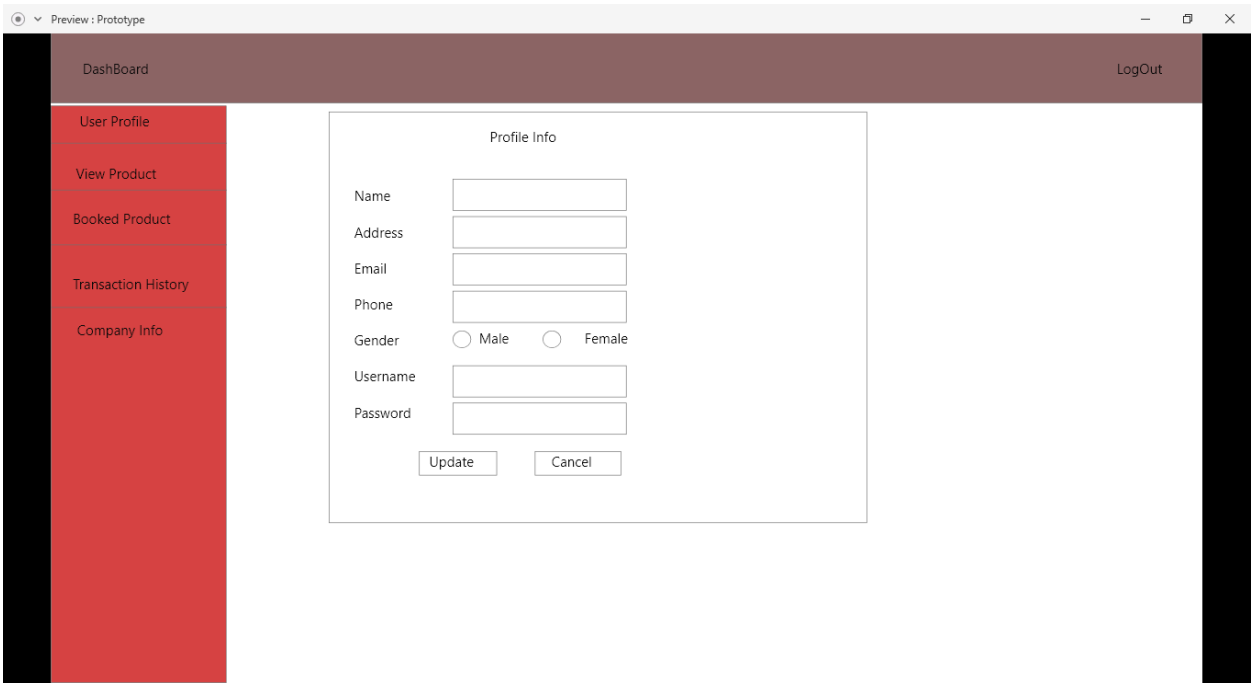


Figure 23: User Profile update form

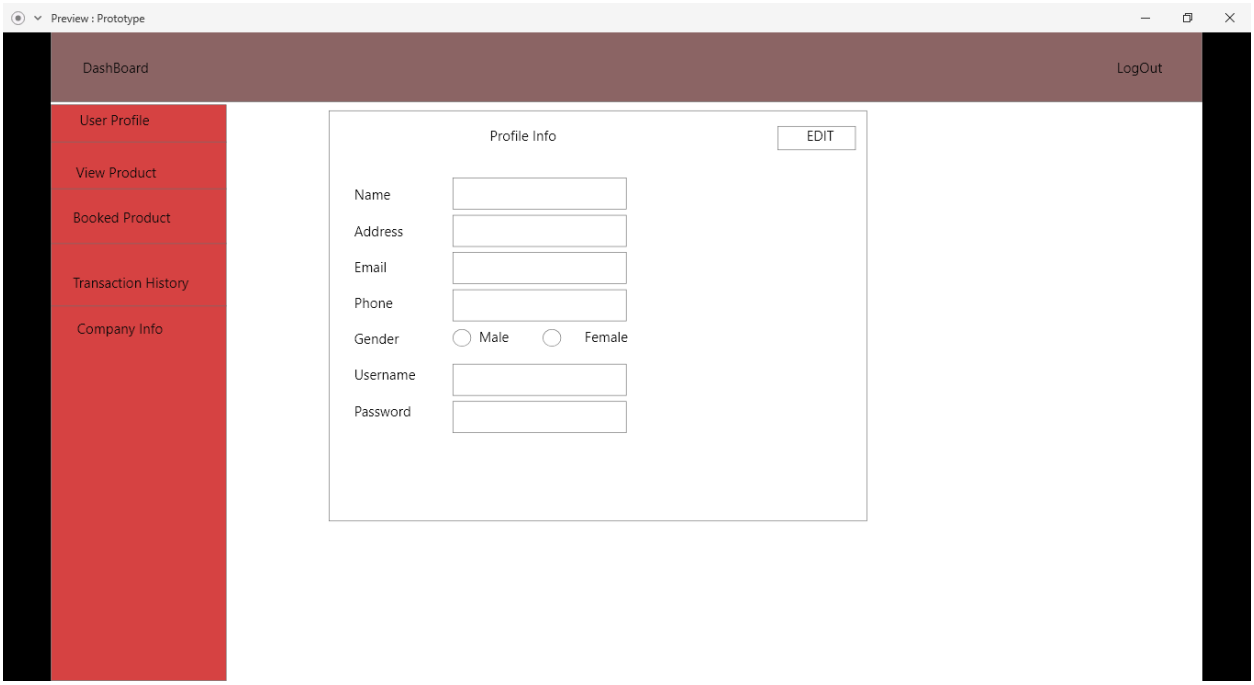


Figure 24: User profile form

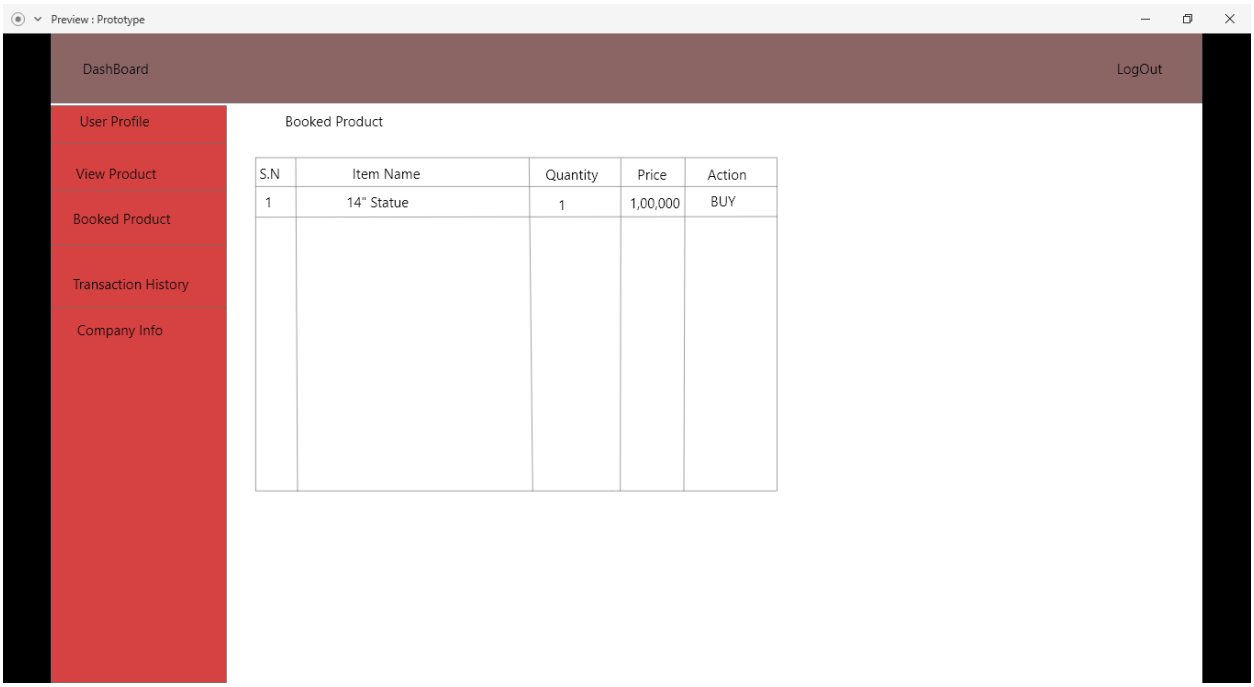


Figure 25: Booked product form

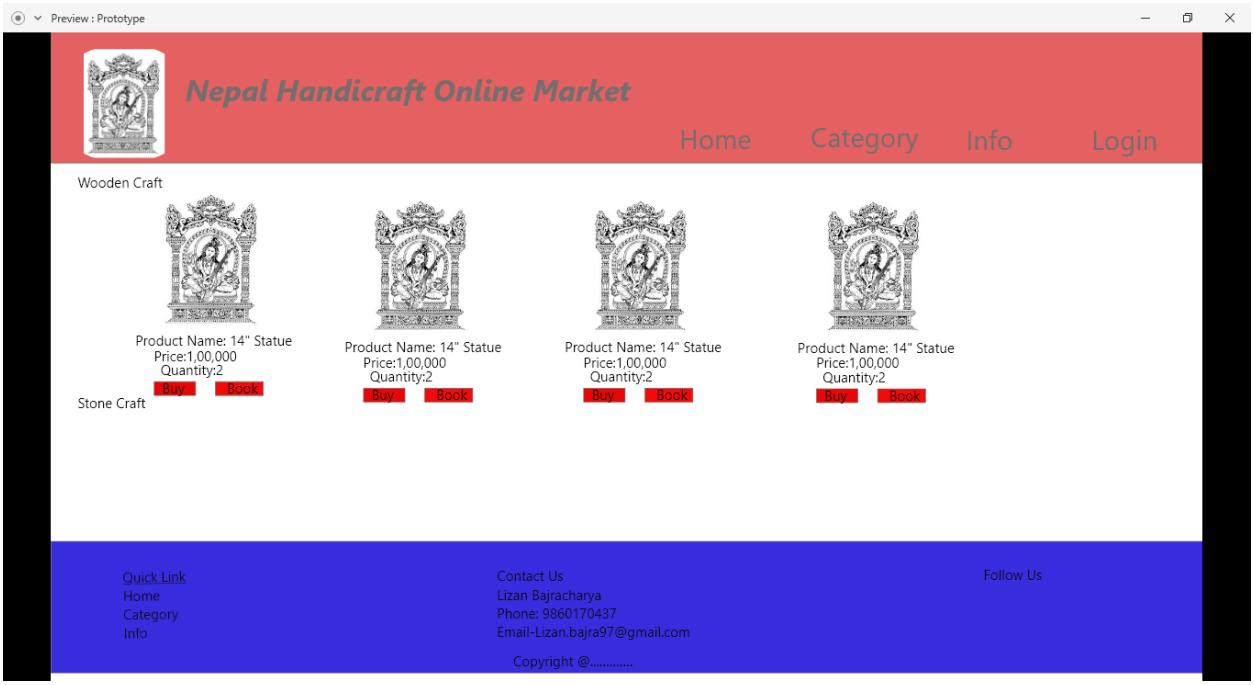


Figure 26: Category page

Figure 27: Info page

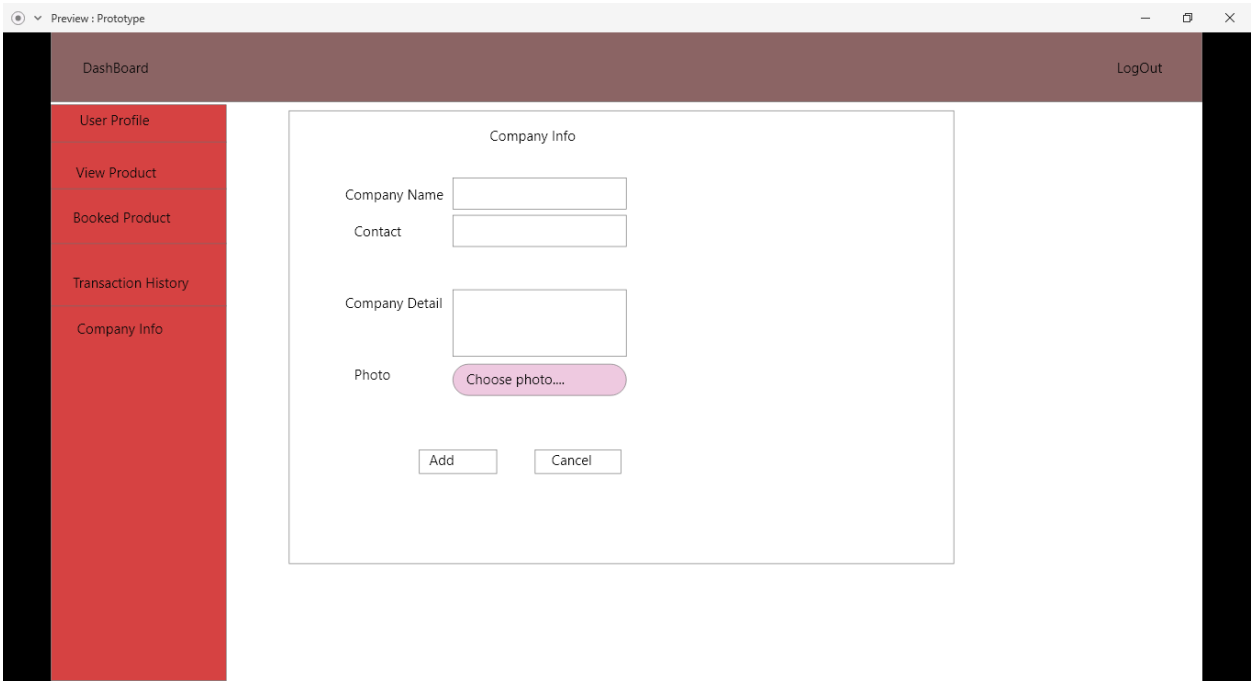


Figure 28: Company Detail add form

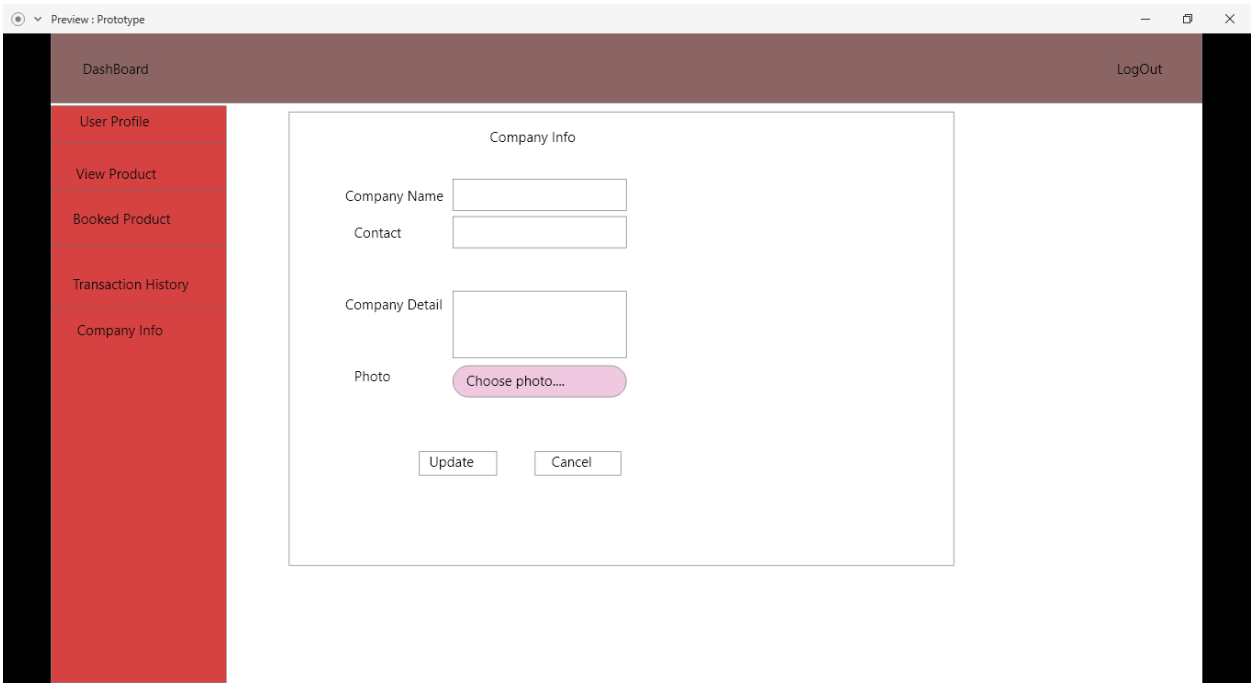


Figure 29: Company detail update form