AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

Dept. of Computer Science

Faculty of Science and Technology

CSC2210: OBJECT ORIENTED PROGRAMMING 2

Summer 2023-2024

Section: [J]

Project Report On

Online mobile shop management system

Supervised By

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Submitted By: Afnan Bin Islam Nahin

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Obtained Marks for CO2 and CO3 (Description given in the following page)					
Assessment Criteria	**Not Attended/ Incorrect (0)**	**Inadequate (1-2)**	**Average (3)**	**Good (4)**	**Excellent (5)**
Evaluation Criteria (CO2)	**Total =**	**Evaluation Criteria (CO3)**			**Total =**
Requirement fulfillment		Organization of the application			

Validation		Representation and Integration of Database	
Verification		Graphical User Interface	

CO2: Display and verify the mean of a real-life Project using the concepts of C# Graphical User Interface based environment with database integration to depict a desktop-based application.

Assessment Criteria	**Not Attended/ Incorrect (0)**	**Inadequate (1-2)**	**Average (3)**	**Good (4)**	**Excellent (5)**
Evaluation Criteria	**Evaluation Definition**				
Requirement fulfillment	Fails to demonstrate any understanding of real-life scenario-based project development or functional requirement identification. There is no attempt to depict a project or identify functional requirements accurately.	Demonstrates limited understanding of real-life scenario-based project development and functional requirement identification. The project depicted lacks coherence or relevance to real-life scenarios, and functional requirements are inaccurately identified or insufficiently described.	Presents a basic depiction of a real-life scenario-based project and identifies some functional requirements. However, the project lacks depth or complexity, and some functional requirements may be vaguely defined or missing key details.	Effectively demonstrates a realistic scenario-based project and accurately identifies most functional requirements. The project is well-developed with appropriate complexity, and functional requirements are clearly articulated with relevant details.	Exhibits an exceptional understanding of real-life scenario-based project development and accurately identifies all functional requirements. The project is meticulously developed with thorough attention to detail, reflecting a comprehensive understanding of Object-Oriented Programming project

					development activities.
Validation	Fails to demonstrate any understanding or implementation of validation forms in their system. There is no attempt to deal with data validation, and validation requirements are completely ignored or incorrectly applied.	Demonstrates limited understanding of validation forms and data validation techniques. While some attempt may be made to implement validation, it is incomplete or poorly executed, leading to inadequate handling of data validation.	Shows a basic understanding of validation forms and data validation techniques. They attempt to implement validation, but some aspects may be missing or incorrectly implemented, resulting in partial or inconsistent handling of data validation.	Effectively demonstrates the use of validation forms and implements data validation techniques. Validation is mostly accurate and comprehensive, ensuring the proper handling of data input and verification in the system.	Exhibits an exceptional understanding and implementation of validation forms and data validation techniques. Validation is meticulously implemented with thorough attention to detail, ensuring robust data validation procedures and contributing to the overall reliability and integrity of the system.
Verification	Fails to demonstrate any attempt to verify the system data or functional requirements. There is no evidence of understanding or implementation of verification processes, and	Demonstrates limited understanding of verification processes and data flow in the system. Verification attempts are incomplete or inaccurate,	Shows a basic understanding of verification processes and attempts to verify system data. However, verification efforts may be	Identifies and verifies system data, ensuring proper functional requirements are met. Verification efforts are mostly accurate and thorough, with attention to	Exhibits an exceptional understanding of verification processes and meticulously verifies system data. Verification efforts are comprehensive and precise, with a keen

	data flow is not considered.	and there is insufficient consideration given to ensuring data integrity and functionality.	inconsistent or lack thoroughness, and there may be gaps in ensuring proper functional requirements and data flow.	ensuring data integrity and appropriate data flow within the system.	focus on ensuring all functional requirements are met and maintaining proper data flow throughout the system.

CO3: Prepare and Explain a real life desktop based application synthesizing several component of C# along with development tools to adhere the given requirements.

Assessment Criteria	**Not Attended/ Incorrect (0)**	**Inadequate (1-2)**	**Average (3)**	**Good (4)**	**Excellent (5)**
Evaluation Criteria	**Evaluation Definition**				
Organization of the application	Fails to identify any suitable real time application or requirements for project development activities related to OOP.	Limited understanding about the project scopes and scenarios or identification of functional requirements.	Lacks depth or relevance to OOP project development activities and may contain inaccuracies. Real-life scenarios are mentioned, but the discussion lacks depth or clarity.	Consider and integrate the idea of several core aspects of the project along with relevance to real-life scenarios. Demonstrating a solid understanding of the application presentation.	Generalize and exhibits an exceptional understanding of project preparation according to a to real-life scenarios. Also contains proper and insightful identification of the system which is comprehensive and precise.
Representation and	Fails to identify and	Limited understand	Lacks depth or relevance	Integrate the database	Exhibits an exceptional

Integration of Database	present any understandin g or implementati on of database. Also failed to integrate the data with the project itself.	ing of the database concepts or their proper way of using in a real time project. While some attempt may be made to implement but it is incomplete or poorly executed, leading to inadequate design.	to database integration with the application. Shows a basic understandi ng but some aspects may be missing or incorrectly implemente d, resulting in partial or inconsisten cy. May lack proper normalizati on.	with the forms properly and implements it with proper validation which is mostly accurate and comprehens ive, ensuring the proper handling of data input and verification along with general normalizatio n.	understanding and implementation of database ensuring attention to detail, and robust data manipulation proce dures and contributing to the overall clarity.
Graphical User Interface	Fails to present or prepare GUI based application interfaces. There is no evidence of creating or integrating such things according to their usefulness.	Limited understand ing of graphical user interfaces. Lack of design knowledge. Very poor attempt to make such things which are currently obsolete or can't be identified as coherent.	Shows a basic understandi ng of creating user interfaces. Most of them are interconnec ted but maybe some of them lack it. However, most of it can be described as user friendly.	Effectively identifies and meet the consider the simplicity. Design related works are mostly accurate and taken proper attention to ensuring a user-friendly coherent system.	Exhibits an exceptional work design following a high standard of simple and elegant work. Several controls and mechanism has been organized in a preferred way according to the coherent usage .

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Chapter 1: Introduction

This project implements a Online Mobile shop Management System. The Online Mobile Shop Management System is designed to efficiently manage an e-commerce mobile phone business, catering to two user types: Admin and Customer.

Admin can manage the mobile inventory, view and edit user accounts, track customer orders, view reviews, and manage service centers. They can also add, delete, update, and search user profiles, ensuring smooth operations.

Customer can log in, search for mobile phones, make purchases, request unavailable phones, leave reviews, and request phone repairs. This system ensures seamless management for admins and an enhanced shopping experience for customers.

Chapter 2: User stories

Admin User Features

The **Admin** is responsible for managing the overall functionality of the mobile shop system. The features available to the admin include:

- **Admin Profile:**
    - The admin can log in to their account and view/edit their profile, such as name, contact details, and password.
- **Mobile Phone Management:**
    - **Add Mobile Phone:** The admin can add new mobile phones to the inventory with details such as brand, model, price, features, and stock quantity.
    - **Stock Management:** The admin can view the current stock levels of mobile phones. This helps in managing orders and ensuring timely replenishment.
- **User Management:**
    - The admin can view all registered users (both customers and other admins).
    - They can **add**, **delete**, **update**, and **search** for user accounts. This feature is essential for keeping customer and admin records up-to-date and accurate.

- **Customer Record Management:**
    - The admin can view customer records such as past purchases, service requests, and contact information. This ensures that the admin can assist customers more effectively.

- **Order Management:**
    - Admins can view customer order requests, track order statuses, and process requests such as shipment, cancellation, and confirmation.
- **Review Management:**
    - The admin can view all the reviews submitted by customers about the mobile phones they purchased. This allows the admin to gather feedback and identify areas for improvement.
- **Service Center Management:**
    - The admin is responsible for managing service centers, ensuring that customers' requests for phone servicing are efficiently handled.
- **Customer Phone Request Handling:**
    - If a customer does not find the desired phone in stock, they can request it. The admin will review this request and decide whether to restock the requested model.

Customer User Features

The **Customer** has access to the online mobile shop, allowing them to browse and purchase phones conveniently. The key features for customers include:

- **Customer Profile:**
    - Customers can log in to their account to view and update their profile information (e.g., name, email, address, password).
- **Search Mobile Phone:**
    - Customers can browse the inventory by searching for mobile phones based on brand, price range, features, etc.
- **Purchase Mobile Phone:**
    - Customers can add mobile phones to their shopping cart and complete the purchase via various payment methods. Once an order is placed, customers can track the delivery status.

- **Service Request:**
    - Customers can request service for their mobile phone if it requires repairs or maintenance. This feature links directly to the service center management handled by the admin.

- **Request Phone Model:**
    - If a customer cannot find a particular model in stock, they can send a request to the admin for that specific phone. The admin reviews and takes necessary action to restock it.
- **Review Mobile Phones:**
    - After purchasing a phone, customers can leave reviews and rate the product. This helps other customers make informed purchasing decisions.

Log out:

The user can log out of the system by pressing the designated button, so that another user can log in.

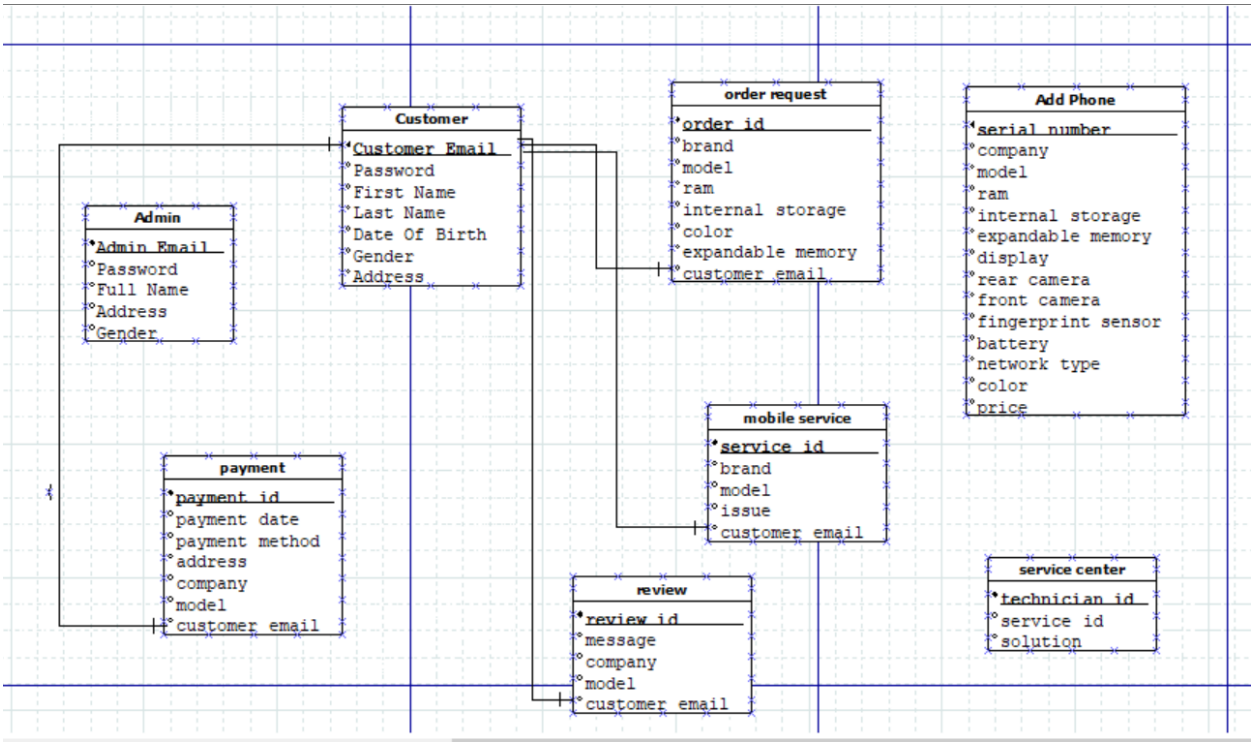
Chapter 3: Case Study:

Case Study: Mobile Phone Management System

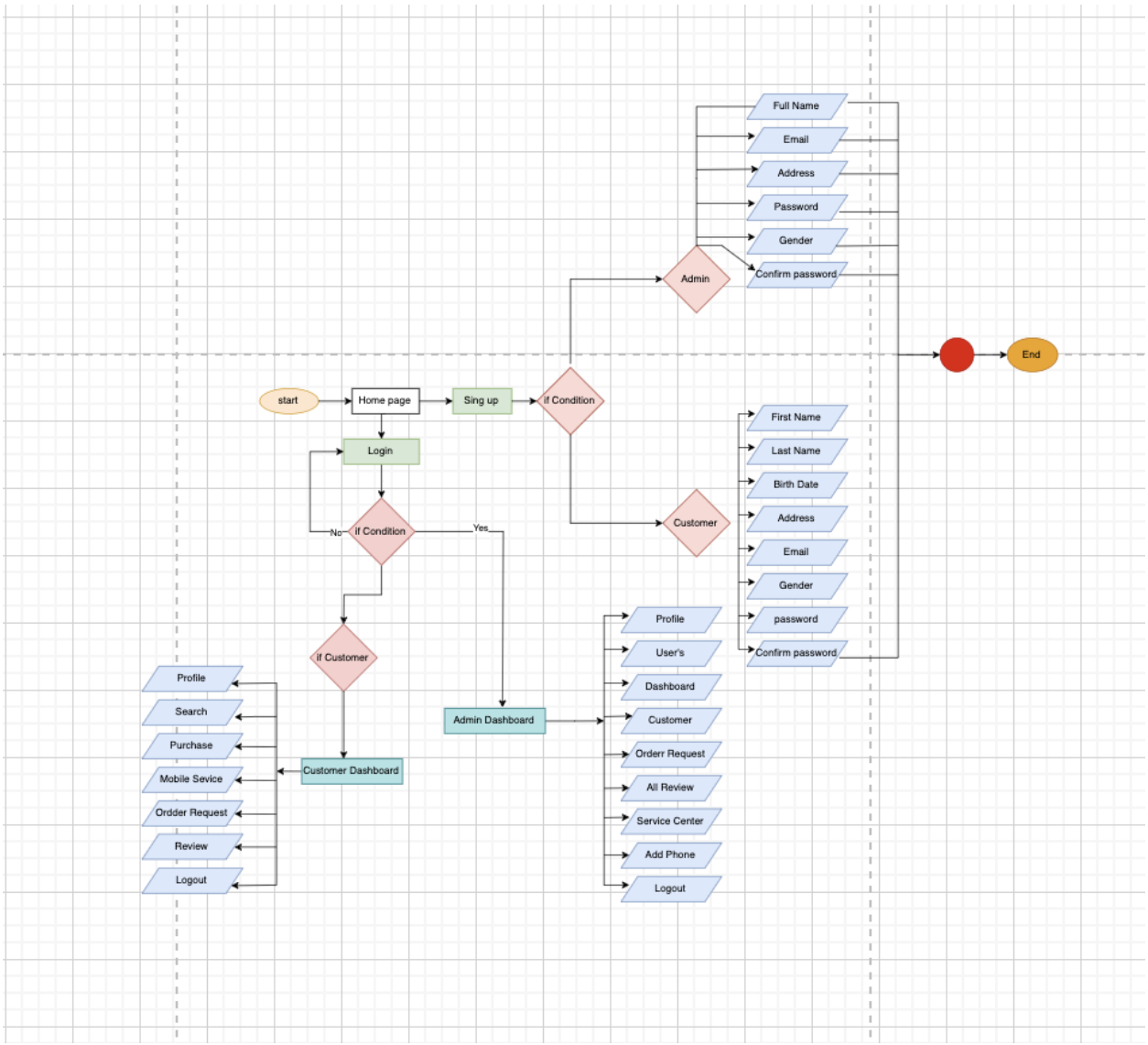
The Mobile Phone Management System (MPMS) is designed to streamline the operations of a mobile phone retail and service company by managing key processes such as mobile phone orders, payments, services, reviews, and administrative functions. The system involves several entities: Admin, Customer, Order Request, Payment, Mobile Service, Review, Add Phone, and Service Center, each of which plays a distinct role in ensuring the smooth functioning of the system. The Admin entity handles system management tasks. Admins are responsible for maintaining customer records, managing mobile phone inventory, and overseeing service center operations. They have the ability to add new phones, track payments, and ensure customer service requests are handled effectively. Each admin's personal details, such as email, password, name, and address, are securely stored within the system. The Customer entity represents the users of the system, each of whom has a unique profile with attributes like email, password, name, and address. Customers can browse available mobile phones, place orders, request services, make payments, and leave reviews. Their interactions with the system are closely tied to the **Order Request, Payment, Mobile Service, and Review entities. When a customer places an order, the details are recorded in the Order Request entity. This includes the phone's specifications such as brand, model, RAM, storage, and color, along with the customer’s email for tracking purposes.

Once the order is confirmed, the payment process begins, and the Payment entity records the transaction. Information such as payment method, date, customer address, and the phone model are stored for future reference and to ensure a smooth transaction process. In cases where customers face issues with their mobile phones, they can raise a service request, which is logged in the Mobile Service entity. This entity captures details about the phone's brand, model, and the specific issue reported, linking the request to the customer's profile. The Service Center entity plays a role in resolving these requests by assigning a technician, who then logs the solution once the issue is resolved. After receiving a product or service, customers have the opportunity to leave feedback in the Review entity. This feedback, which includes details about the phone model and a message from the customer, helps the company evaluate the quality of its products and services, ultimately contributing to continuous improvement. The Add Phone entity serves as the system's inventory database, containing detailed records of available mobile phones, including specifications such as serial number, company, model, RAM, storage, display, camera features, and price. Admins regularly update this entity to ensure customers have access to accurate information when placing orders. Overall, the Mobile Phone Management System offers a comprehensive platform for managing all aspects of mobile phone retail and services. The interaction between entities ensures efficient data flow, allowing customers to easily place orders, make payments, and request services, while admins oversee the entire process. By automating and organizing these operations, the system enhances both customer satisfaction and operational efficiency.

Chapter :04 (Schema Diagram)



Chapter :05 (Navigation Diagram)



Chapter :06 (SQL Queries)

1)users table

```
CREATE TABLE [dbo].[users] (
    [f_name]   VARCHAR (50) NULL,
    [l_name]   VARCHAR (50) NULL,
    [date]     VARCHAR (50) NULL,
    [gender]   VARCHAR (50) NULL,
    [address]  VARCHAR (50) NULL,
    [email]    VARCHAR (50) NOT NULL,
    [password] VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([email] ASC)
);
```

2)service center table

```
CREATE TABLE [dbo].[service_center] (
    [technician_Id] INT          NOT NULL,
    [service_id]    VARCHAR (50) NULL,
    [solution]      VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([technician_Id] ASC)
);
```

3)review table

```
CREATE TABLE [dbo].[review] (
    [review_id]      INT          NOT NULL,
    [customer_email] VARCHAR (50) NULL,
    [message]        VARCHAR (50) NULL,
    [company]        VARCHAR (50) NULL,
    [model]          VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([review_id] ASC),
    CONSTRAINT [FK_review_ToTable] FOREIGN KEY ([customer_email]) REFERENCES
[users]([email])
);
```

4)payment table

```
CREATE TABLE [dbo].[payment] (
    [payment_Id]     INT          NOT NULL,
    [customer_email] VARCHAR (50) NULL,
    [payment_date]   VARCHAR (50) NULL,
    [payment_method] VARCHAR (50) NULL,
    [address]        VARCHAR (50) NULL,
    [company]        VARCHAR (50) NULL,
    [model]          VARCHAR (50) NULL,
    [price]          VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([payment_Id] ASC),
    CONSTRAINT [FK_payment_ToTable] FOREIGN KEY ([customer_email]) REFERENCES
[users]([email]));
```

5)order request table

```
CREATE TABLE [dbo].[order_request] (
    [order_Id]          INT          NOT NULL,
    [brand]             VARCHAR (50) NULL,
    [model]             VARCHAR (50) NULL,
    [ram]               VARCHAR (50) NULL,
    [internal_storage]  VARCHAR (50) NULL,
    [color]             VARCHAR (50) NULL,
    [expandable_memory] VARCHAR (50) NULL,
    [email]             VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([order_Id] ASC),
    CONSTRAINT [FK_order_request_ToTable] FOREIGN KEY ([email]) REFERENCES
[users]([email])
);
```

6)mobile service table

```
CREATE TABLE [dbo].[mobile_service] (
    [service_Id] INT          NOT NULL,
    [brand]      VARCHAR (50) NULL,
    [model]      VARCHAR (50) NULL,
    [issue]      VARCHAR (50) NULL,
    [picture]    IMAGE        NULL,
    [email]      VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([service_Id] ASC),
    CONSTRAINT [FK_mobile_service_ToTable] FOREIGN KEY ([email]) REFERENCES
[users]([email])
);
```

7)admin table

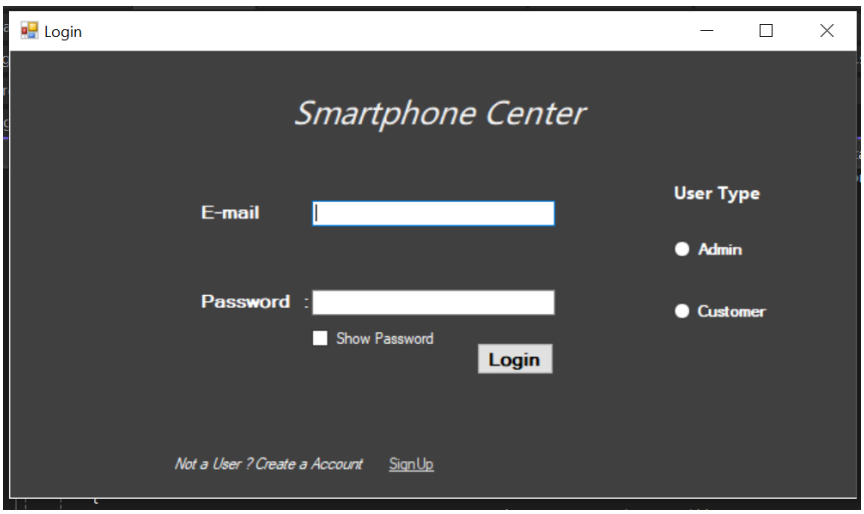
```
CREATE TABLE [dbo].[admin] (
    [full_name] VARCHAR (50) NULL,
    [address]   VARCHAR (50) NULL,
    [gender]    VARCHAR (50) NULL,
    [email]     VARCHAR (50) NOT NULL,
    [password]  VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([email] ASC)
);
```

8)add phone table

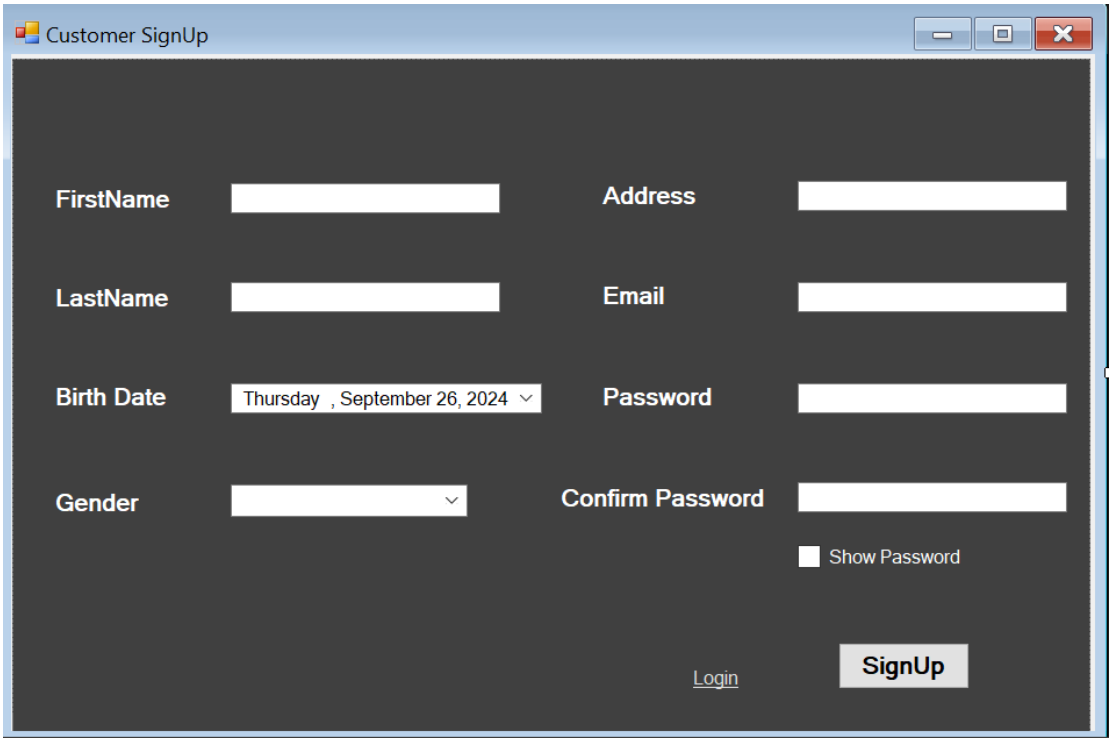
```
CREATE TABLE [dbo].[add_phone] (
    [company]            VARCHAR (50) NULL,
    [model ]             VARCHAR (50) NULL,
    [ram]                VARCHAR (50) NULL,
    [internal_storage]   VARCHAR (50) NULL,
    [expandable_memory]  VARCHAR (50) NULL,
    [display]            VARCHAR (50) NULL,
    [rear_camera]        VARCHAR (50) NULL,
    [front_camera]       VARCHAR (50) NULL,
    [fingerprint_sensor] VARCHAR (50) NULL,
    [battery]            VARCHAR (50) NULL,
    [serial_number]      INT          NOT NULL,
    [network_type]       VARCHAR (50) NULL,
    [color_available]    VARCHAR (50) NULL,
    [price]              VARCHAR (50) NULL,
    PRIMARY KEY CLUSTERED ([serial_number] ASC));
```

Chapter:07 (Screenshots)

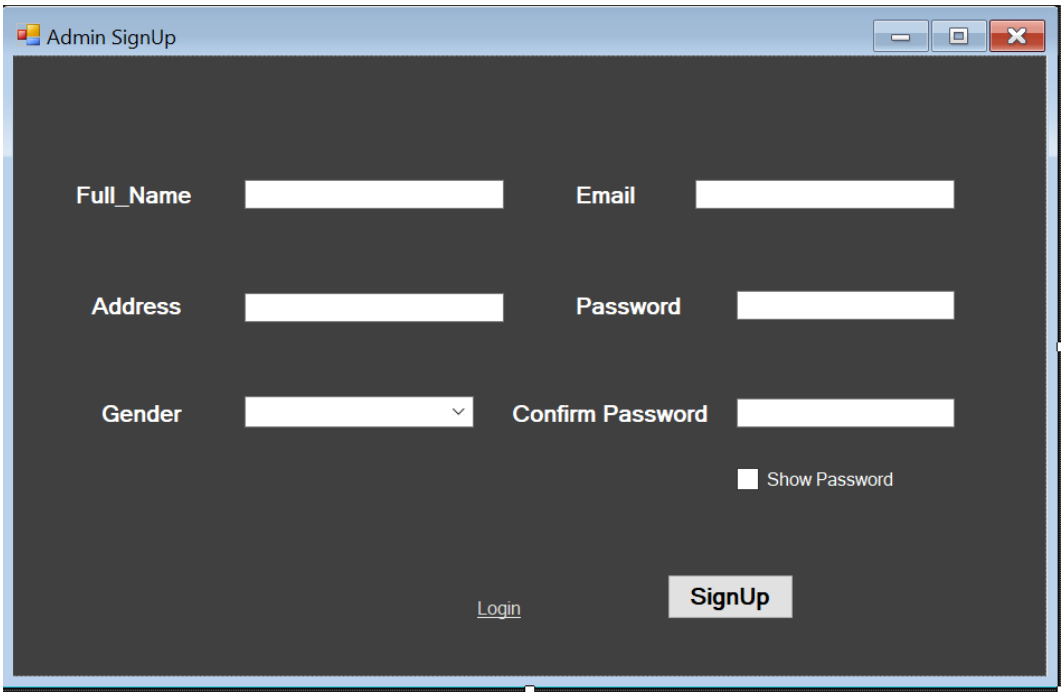
Login Page:



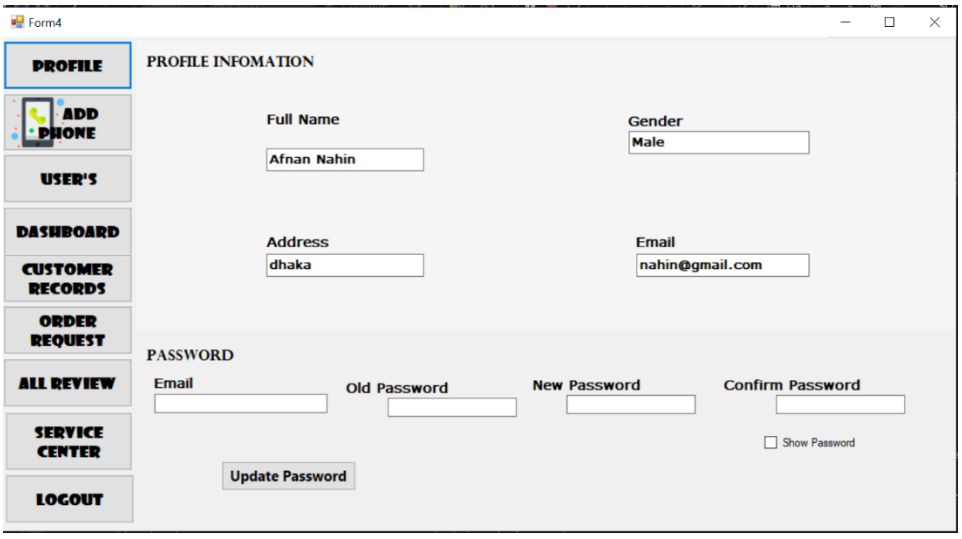
Customer Signup Page:



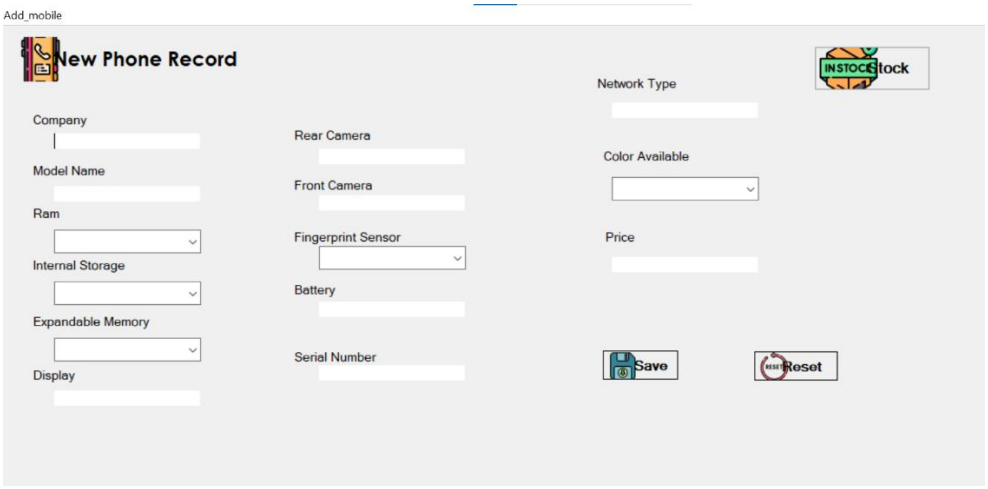
Admin Signup page:



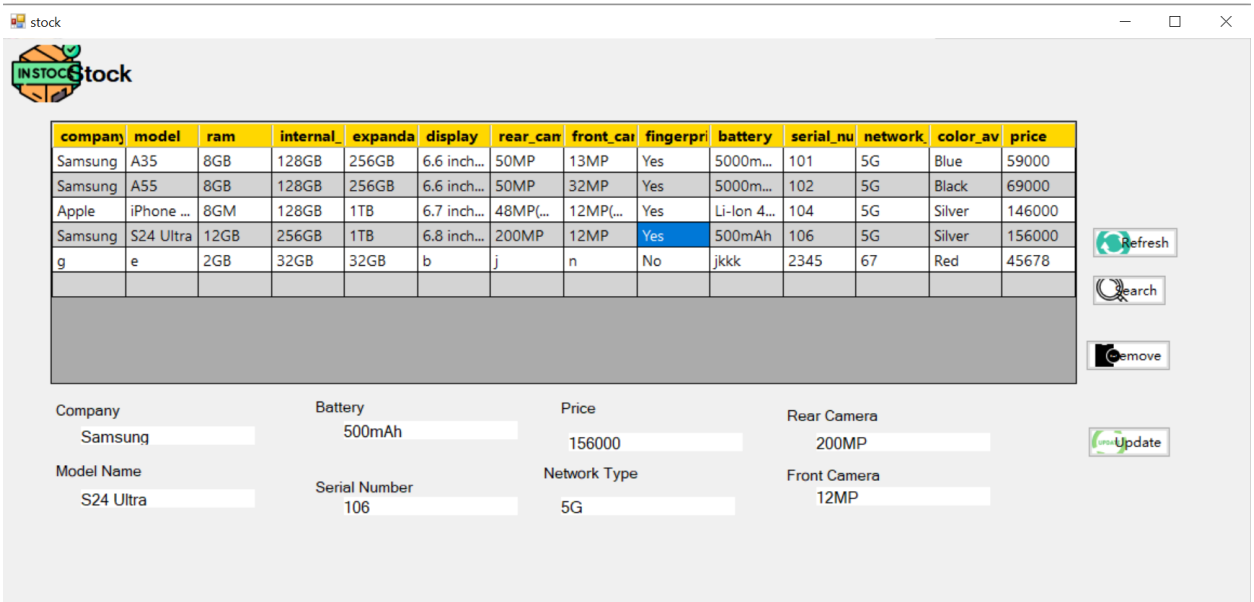
Admin profile:



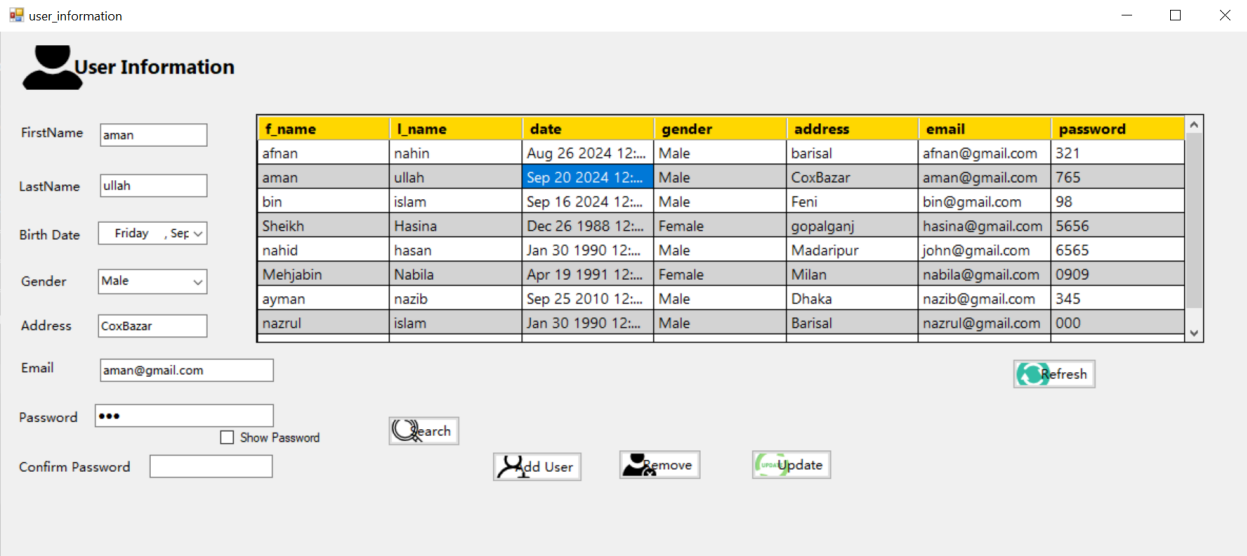
Admin Add Mobile Page:



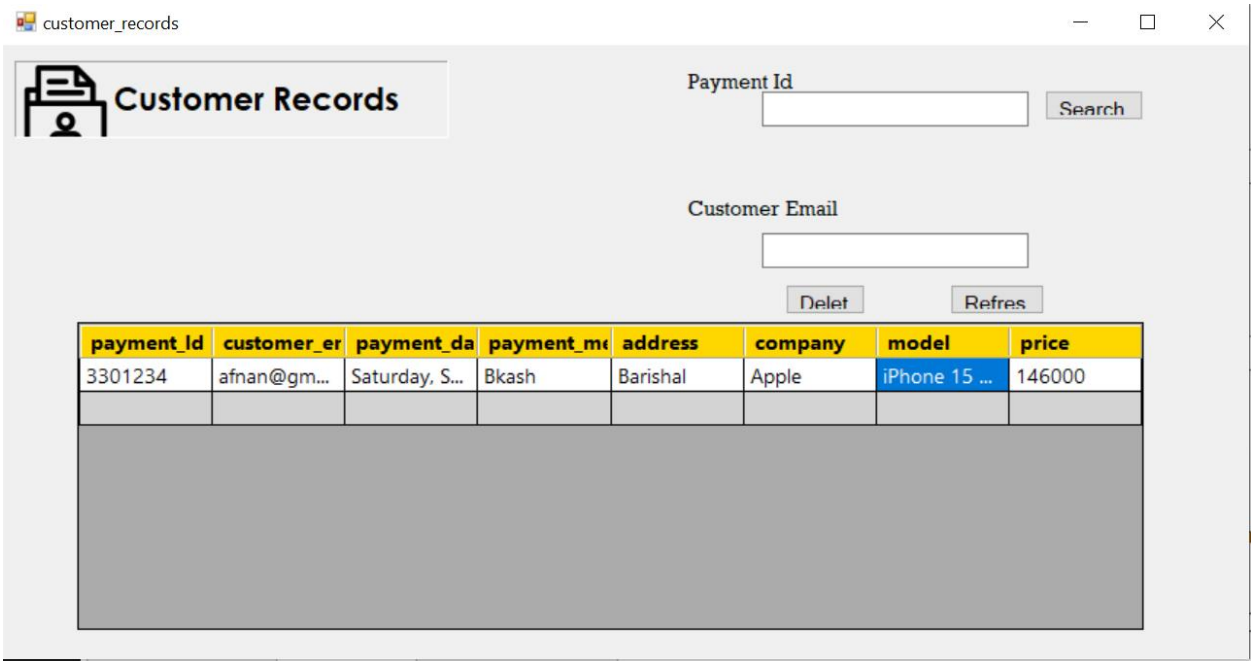
Admin Stock page:



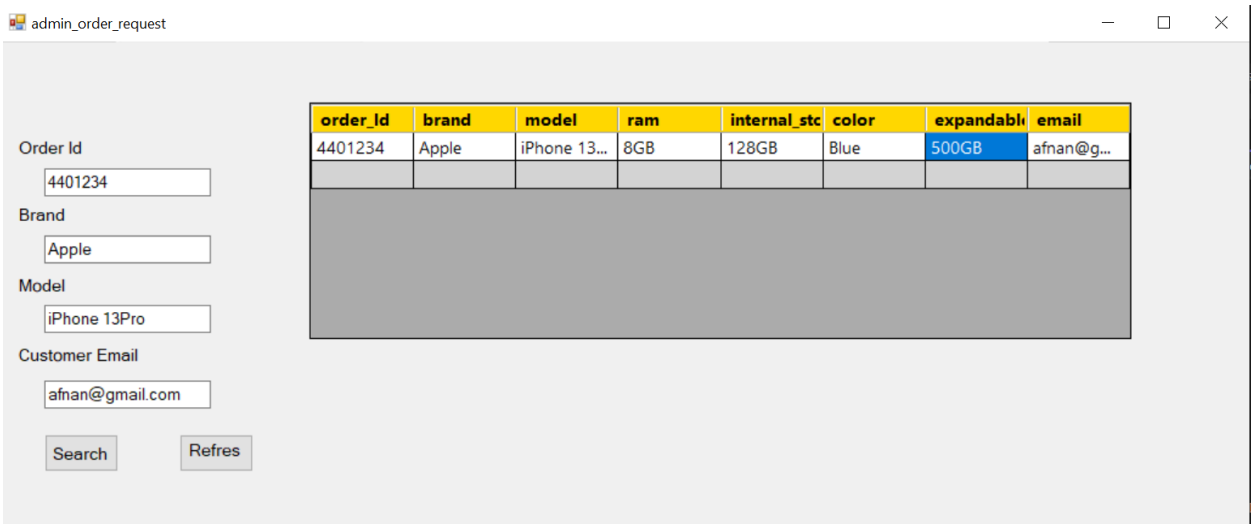
Admin User Information Page:



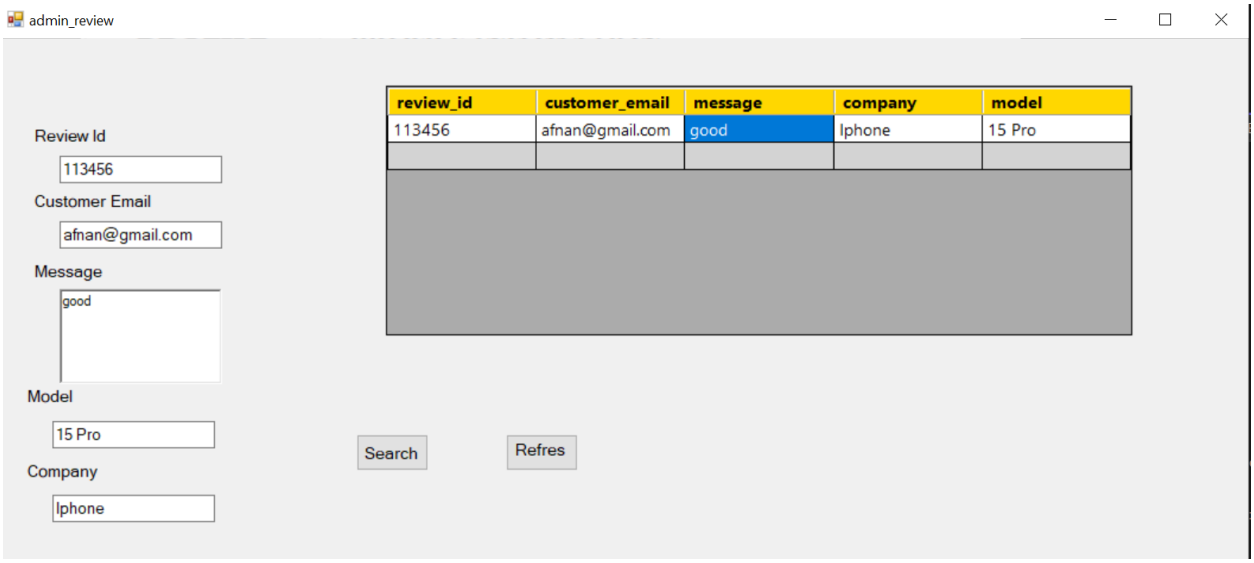
Customer record page:



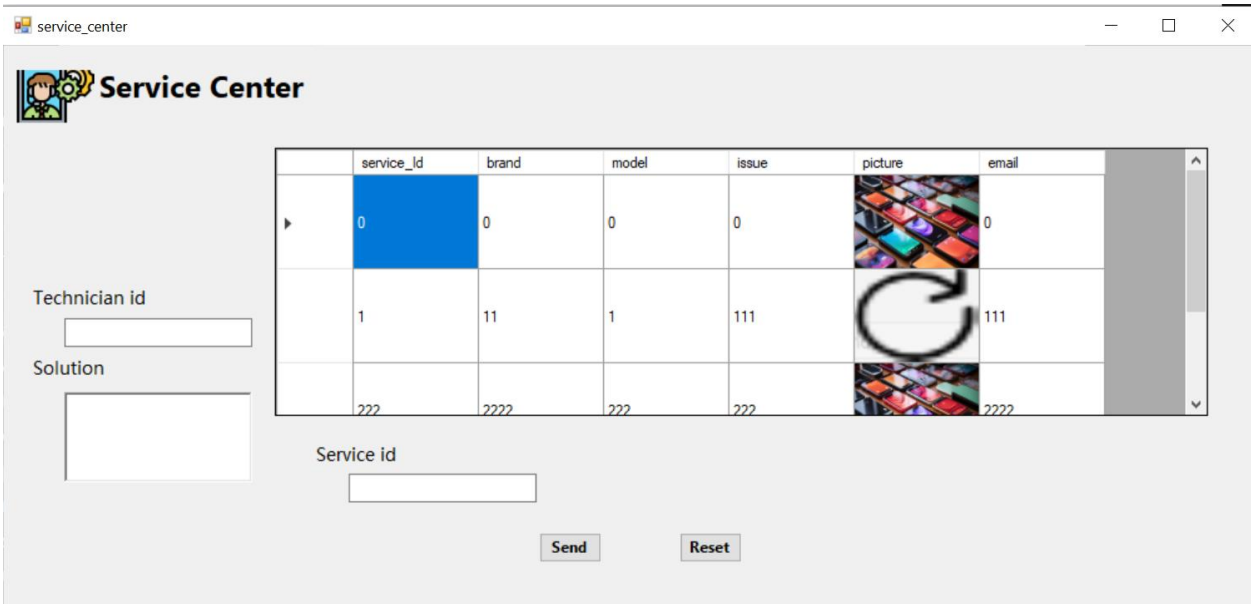
Admin order request page:



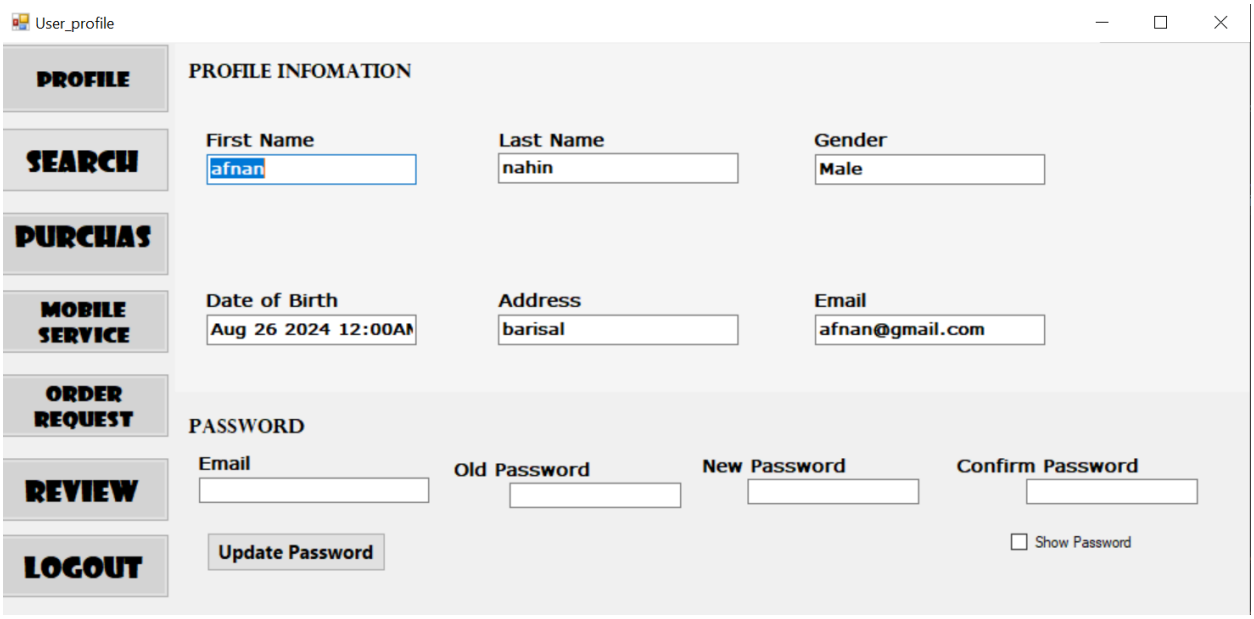
Admin review page:



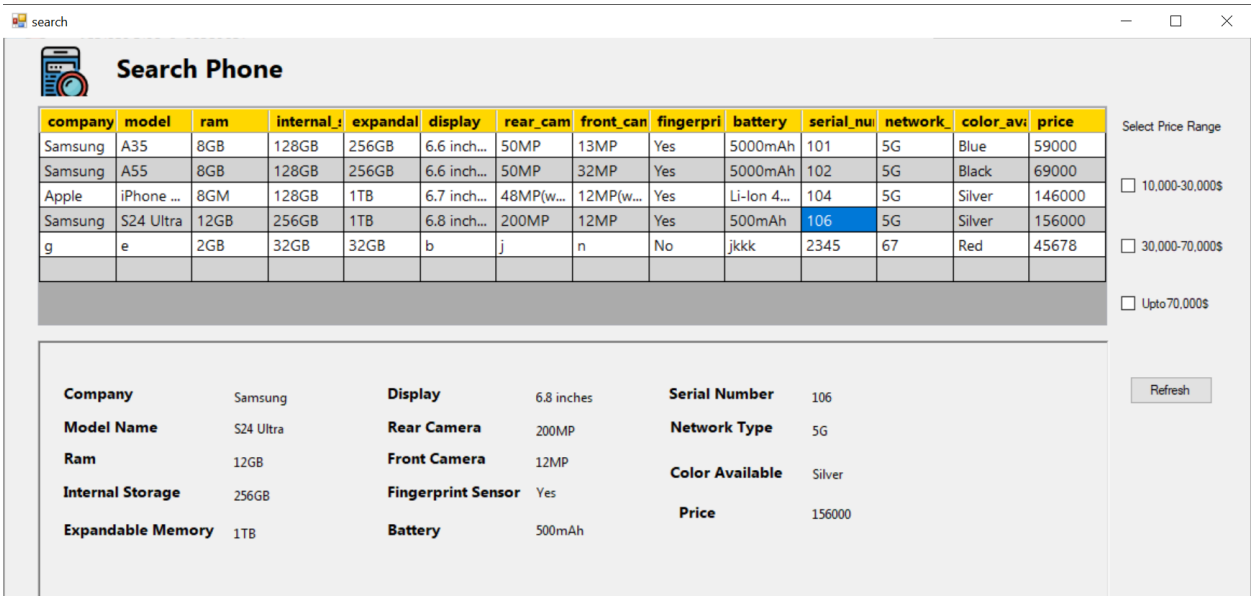
Service center page:



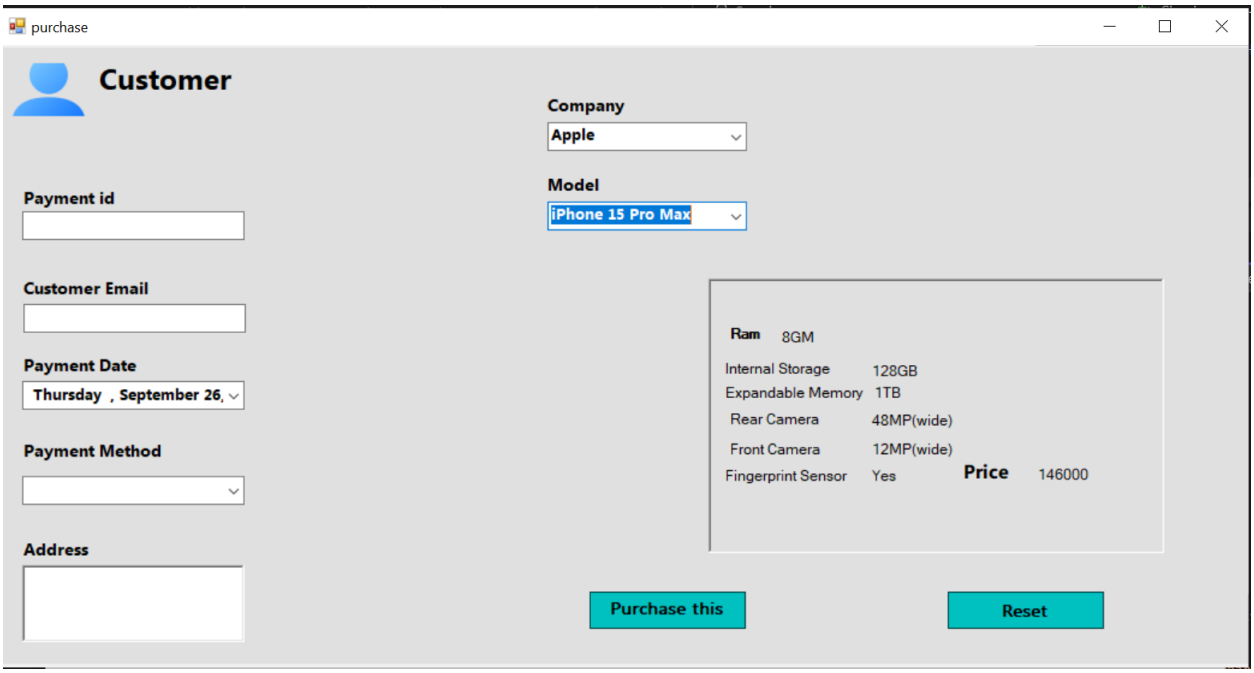
Customer profile:



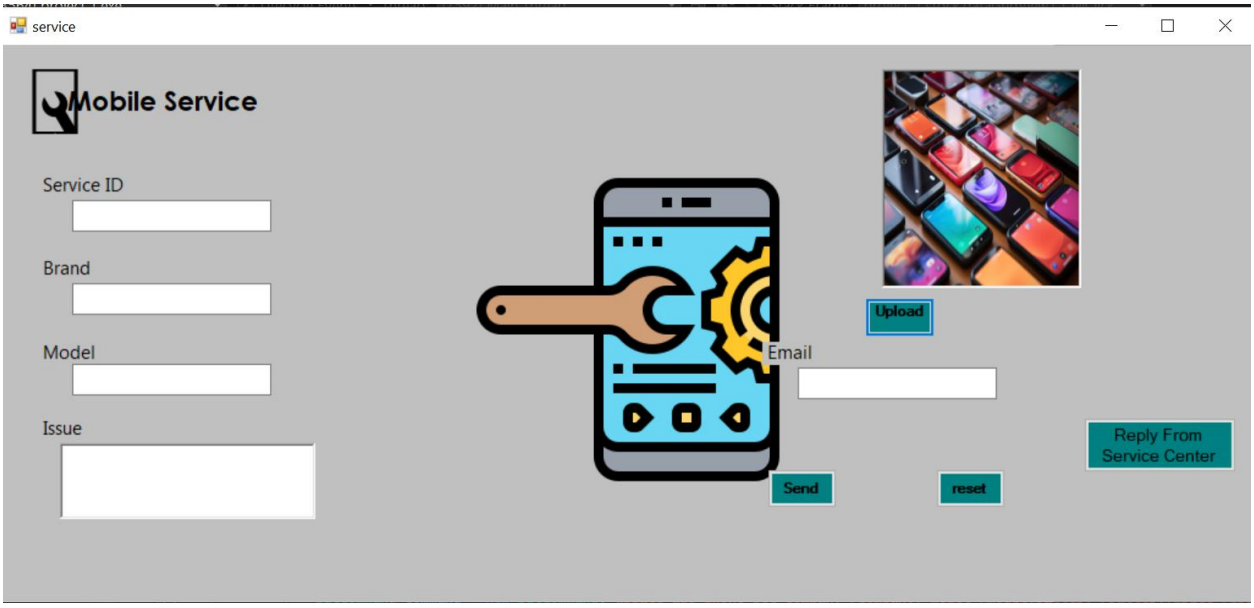
Mobile search page:



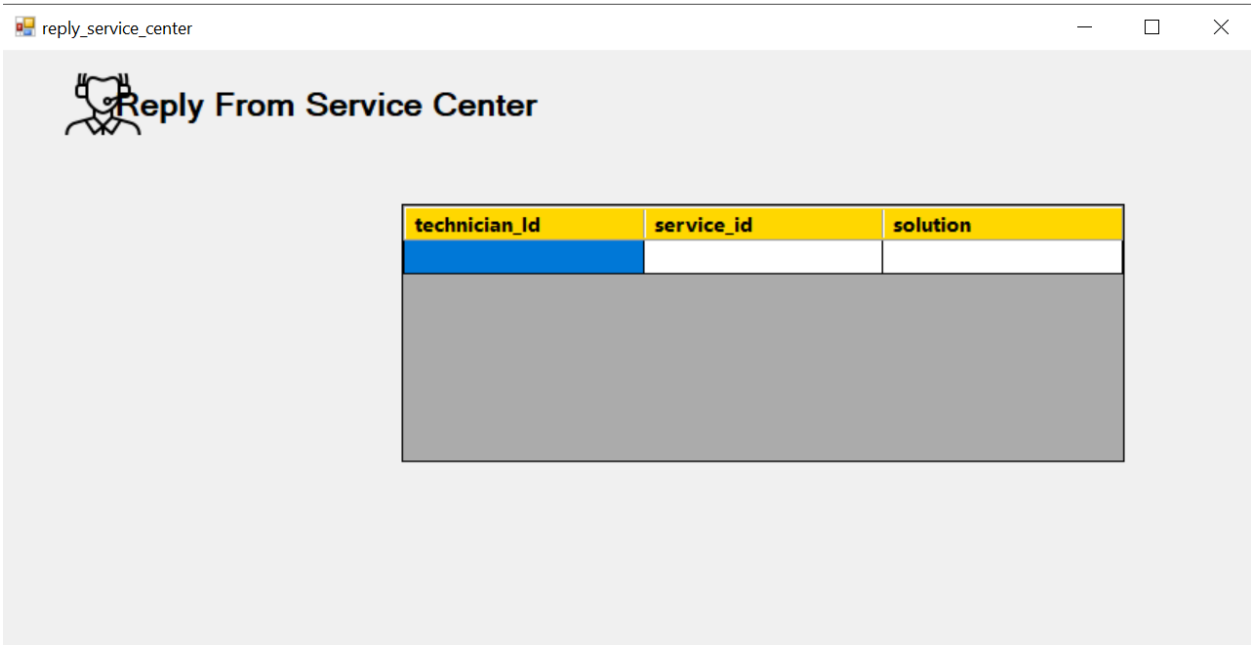
Mobile purchase page:



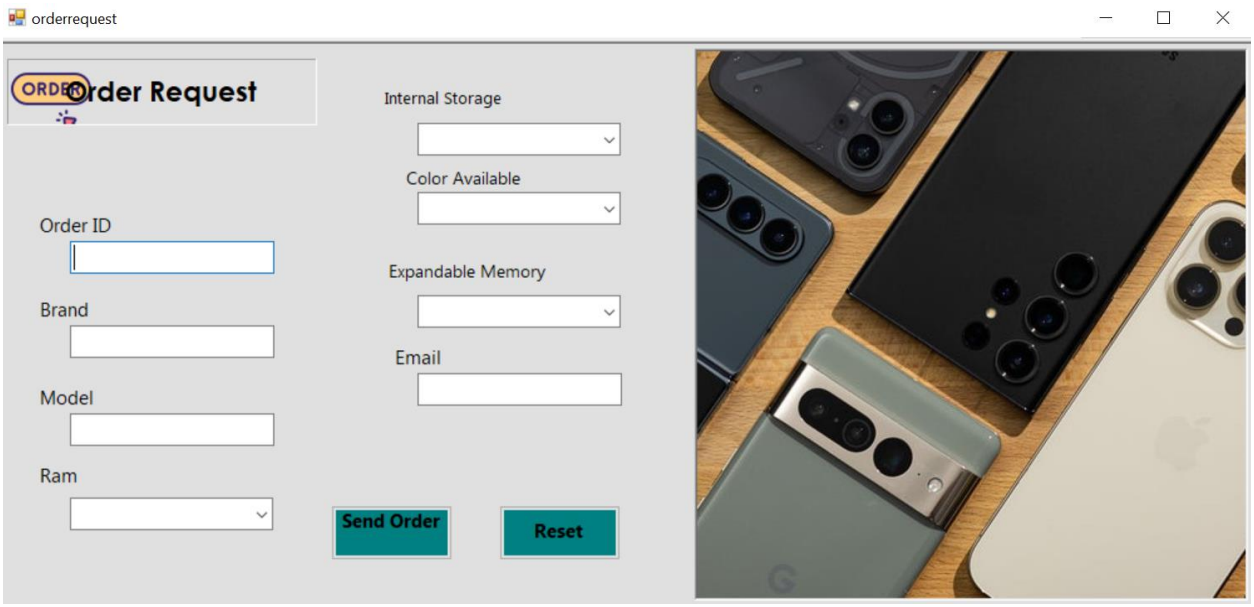
Customer mobile service page:



Service center page:



Order request page:



Review page: