Assignment 2: Group Project

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Instruction

Instructions to connect the SQL database to the IDE.

Connection Details:

Server name: applicationdev.database.windows.net

SQL Authentication

Username: applicationdev

Password: GiftCard1

Introduction

This project is a representation of an online gift card application, which utilizes a range of features to enhance the user experience. These functionalities include the ability to transfer funds between gift cards, purchase gift cards from a variety of brands, and even gift these cards to other users. The development process involved the adoption of various methodologies and frameworks to enhance flexibility, adaptability, and usability. Notably, Entity Frameworks were employed for efficient and easy data management, and cloud services and databases were leveraged for data storage. The graphical user interface (GUI) was crafted using Windows Forms in C#, which provided a robust platform for managing and programming this comprehensive gift card application.

Description of the project

For this assignment 2, our group decided to develop an "online gift cards application" which is designed to enhance the experience of managing gift cards. It provides users with a user-friendly interface for purchasing gift cards, gifting your cards to other users, storing all the user's gift cards in one place and transferring funds between two gift cards.

Project Purpose

One of the main purposes of the application is to provide the users with an effective and convenient way of purchasing all the different gift cards online. The users can conveniently browse through a wide range of gift card options from different brands and purchase them without needing to physically visit different stores. Our application also aims for the users to have effortless gifting experience by providing services where the users can send their gift cards to family and friends with ease. Another objective of our application is to serve as a secure platform where the users can store all their gift cards digitally for easier access.

Development Approach

This project utilizes various frameworks and services to improve the flexibility and usability of the application from end to end. This application was constructed using a cloud server that incorporates within it an SQL database hosted by Azure. This server utilizes several configurations that assist in connection and performance of the SQL database and server connectivity like IP-address whitelisting and username and password access requirements, and various storage services.

The SQL database contains 3 tables; Gift card, User gift card, User. Gift cards contain the information associated with the gift cards that are available on the website such as; brand, price, name, and description. The User gift card table contains a reference point for which we access a specific client's gift cards with a unique identifier and other details like the available funds on their gift card and the code for that specific gift card. Finally, the User table holds the users sign in credentials and some basic contact information like email and name.
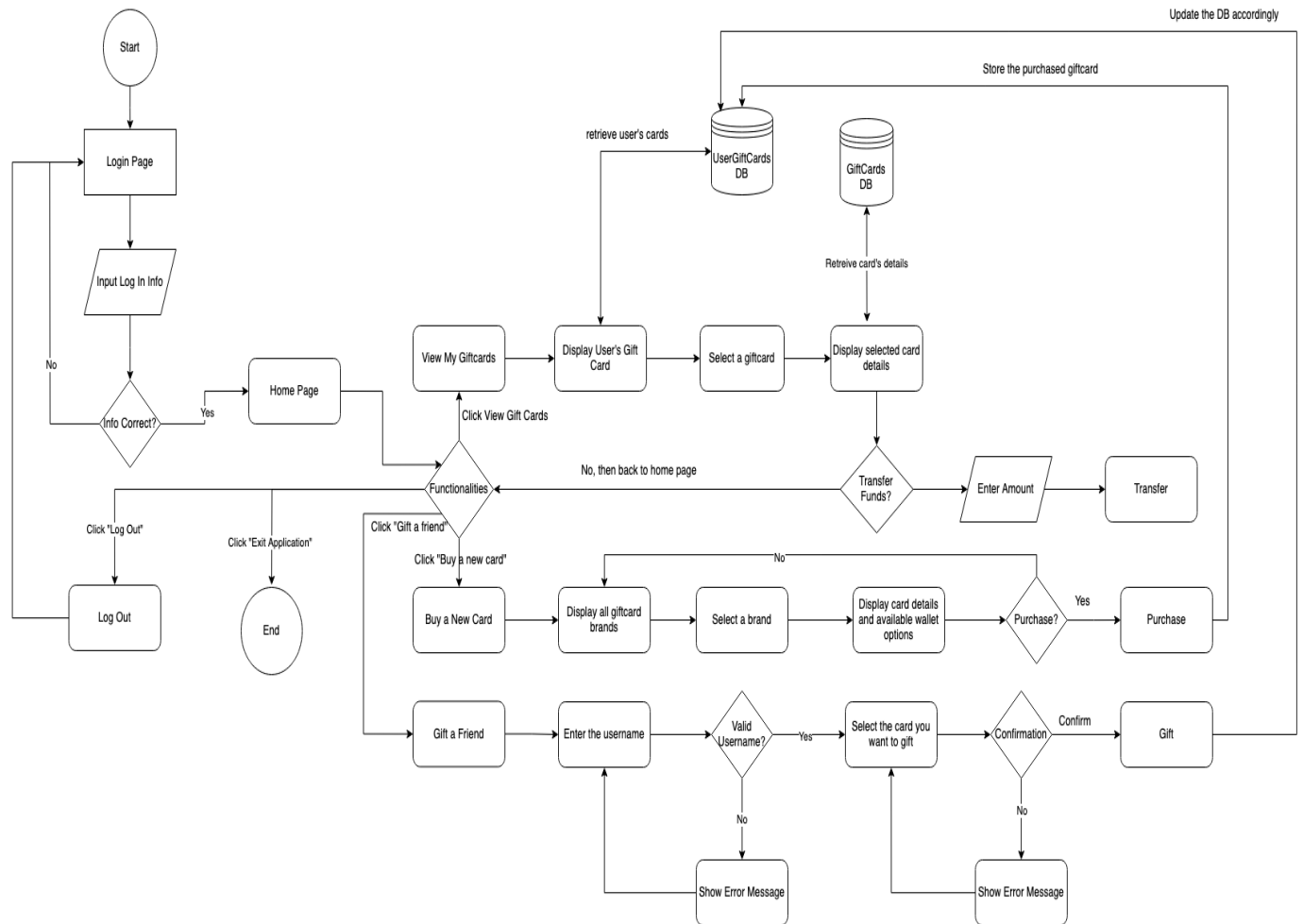
This application manages its database through an entity framework. This framework works by initializing a database context file which inherits the framework through *DBContext*. This context file initiates a connection to the database and retrieves the tables and data by utilizing a method identified by *DBSet*. However, to complete the integration of the entity framework in this project model classes representing each table were created to access the database

information through programming logic. Each model contained within it the data types and respective column names to easily manage database functions and retrieve appropriate database information.

To utilize the Entity framework, SQL database and server in this project various packages and libraries were integrated into the application setup to support these methodologies and framework functions. For the Entity framework the *Microsoft EntityFrameworkCore* was integrated into the project to inherit and access the Entity framework. To set up the database in the IDE (Integrated Development Environment) and access the database and server in the application the *Microsoft EntityFrameworkCoreSQLServer* package was integrated into the application packages.

For Access to the database a server connection was also initiated in the server objects explorer which enabled access to the database on the IDE and allowed us to work and query the database without leaving the IDE.

Flowchart

Role of Team Members

Thomas McMahon

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In this project I handled the setup of the online server and database as well as the integration of the entity framework and database service configuration. I also developed the login page, the My Gift card's view, the list of products in the MainForm or products page, the transfer function, as well as database management and creation of the tables.

Pyae Phyo Zaw

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In this project, I developed the functionalities of the home page, the product detail page, the purchase function and the giftAFriend page and also contributed to the data input in the database tables.

Tom	Pyae
Login Management	
Login Page	
	Main Page
	Home Page
Products Page	Products Page
	Products Management
MyGiftCard Page	
MyGiftCard function	
Transfer funds function	
	Purchase function
	GiftaFriend Page
	Gift Function
Database Management	Database Management
Database Configurations	
Server Setup	
Entity Framework setup	

Summary

In Summary, this online gift card application has many features and functionalities such as; gift card transfer, gift card gifting, gift card purchasing, and gift card management. All these features were designed in C# and windows form integrated with numerous frameworks, libraries, and services such as online database, entity frameworks, etc to provide better usability, flexibility, and adaptability in the user experience.