KENSRI SCHOOL & COLLEGE

PROJECT REPORT ON

The Finance Broker

DONE BY,

Nischit Kumar, 18603240, XII
Tushar Menon, 18603248, XII

UNDER THE GUIDANCE OF,

RAVISHANKAR G.

Computer Science (083)

In partial fulfillment of the requirement
for the award of the class of
CBSE FOR AISSCE 2022-23

Index

KENSRI SCHOOL & COLLEGE

CERTIFICATE

This is to certify that **Nischit Kumar – 18603240** a student of class XII Science of KENSRI School & College, has successfully completed the Investigatory Project entitled:

THE FINANCE BROKER

He has submitted the above mentioned project under the guidance of **MR.RAVISHANKAR G** during the year 2022-23 in the partial fulfilment of the **COMPUTER SCIENCE** Practical Examination conducted under AISSCE (All India Senior School Certificate Examination) by CBSE.

Date: 07/02/2023

Signature of
Principal

Signature of
Subject Teacher

Signature of
External Examiner

KENSRI SCHOOL & COLLEGE

CERTIFICATE

This is to certify that **Tushar Menon – 18603248** a student of class XII Science of KENSRI School & College, has successfully completed the Investigatory Project entitled:

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KENSRI SCHOOL & COLLEGE

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External Examiner

DECLARATION

We hereby declare that the project entitled "**THE FINANCE BROKER**", submitted to **KENSRI School and College, Bengaluru**, for the subject of **COMPUTER SCIENCE**, under the guidance of **MR. RAVISHANKAR G, PGT (CS),** is a record of original work done by us.

We further declare that this project record or any part of this has not been submitted elsewhere for any other class.

Nischit Kumar	**Tushar Menon**
18603240	**18603248**

ACKNOWLEDGEMENT

First and foremost, We praise and adore GOD almighty with gratitude, from the depth of my heart who has been as unfailing source of strength, comfort and inspiration in the completion of this project work also who was the input of this project.

We wish to express my sincere thanks and gratitude to **Mrs.Shashikala V S, Principal, KENSRI School and College, Bengaluru,** who has provided us with a well-equipped computer lab for the successful outcome of this project work.

WE wish to express my deep & profound sense of gratitude to our Computer Teacher **Mr.Ravishankar G, PGT(CS)** for his expert & valuable guidance, support, comments and suggestions towards producing a successful project.

We would also like to acknowledge our friends for their valuable suggestions and helping us in hand will error handling and performance of the program.

Introduction

PYTHON

Introduction:

- Python was created by **Guido Van Rossum.**
- The language was released in **February I991.**
- Python got its name from a BBC comedy series from seventies- “**Monty P** Circus”
- Python can be used to follow both Procedural approach and Object Oriented approach of programming.
- It is free to use.
- Python is based on or influenced with two programming languages:
  - ABC language [replacement of BASIC]
  - Modula-3

Features of Python:

- Easy to use Object oriented language
- Expressive language
- Interpreted Language
- Its completeness
- Cross-platform Language
- Fee and Open source

Shortcomings of Python

- **Lesser libraries –** as compared to other programming languages like C++,java,. Net
- **Slow language** – as it is interpreted languages, it executes the program slowly.
- **Weak on Type-binding** – It not pin point on use of a single variable for different data type

Variety of Usage / Applications

- Python is being used in many diverse fields/applications, some of which are:
  - Scripting
  - Web Applications
  - Game Development
  - System Administrations
  - Rapid Prototyping
  - GUI Programs
  - Database Applications.

Python (a Computer Language) Limitations

- **Not the fastest language**
- **Lesser libraries than c, java, perl.**
- **Not strong on type-binding**
- **Not easily convertible.**

Working in Python

- Before we start working on Python we need to install Python in our computer. There are multiple distributions available today:
  - A Installation available from www.python.org is called Python installation and comes with python interpreter, Python IDLE(Python GUI) and Pip(package installer)
  - ANACONDA Python distribution is one such highly recommended distribution that comes with preloaded many packages and libraries(NumPy, SciPy, Panda etc)
  - Other Popular IDEs like Sypder, PytCharm, etc. Spyder IDE is available as a part of ANACONDA.

Working modes in Python:

- After Python installation we can start working with python.
- In Python we can work in 2 ways:
  - **Interactive Mode (Immediate Mode)**
  - **Script Mode.**
- Both have their own style of working.
- Interactive mode works like a Command Interpreter as Shell Prompt works in DOS Prompt or Linux..
- (>>>) we can execute any instruction of Python with this.
- We can run a complete program by writing in Script mode.

SQL

Introduction:

- Structured Query Language and it helps to make practice on SQL commands which provides immediate results.
- SQL is Structured Query Language, which is a computer language for storing, manipulating and retrieving data stored in relational database.
- SQL is the standard language for Relation Database System.
- All relational database management systems like MySQL, MS Access, and Oracle, Sybase, Informix, and SQL Server use SQL as standard database language.
- SQL is the set of commands that is recognized by all RDBMS.
- The Structured Query Language (SQL) is a language that enables you to create and operate on relational database, which are sets of related information stored in tables.
- The SQL (Structured Query Language) has proved to be a standard language as it allows users to learn one set of command and use it to create, retrieve, alter, and transfer information regardless of whether they are working on a PC, a workstation, a mini, or a mainframe.
- MySQL Database System is a combination of a MySQL server instance and a MySQL database.
- MySQL database system operates using client/server architecture, in which the server runs on the machine containing the databases and clients connect to the server over a network.

Why SQL?

- Allows users to create and drop databases and tables.
- Allows users to describe the data.
- Allows users to define the data in database and manipulate that data.
- Allows users to access data in relational database management systems.

- Allows embedding within other languages using SQL modules, libraries & pre-compilers.
- Allows users to set permissions on tables, procedures, and views.

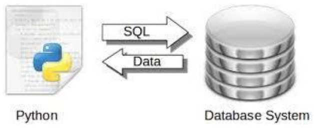
Features of MySQL:

- **Speed:** If the server hardware is optimal, MySQL runs very fast.
- **Ease to use:** MySQL is a high-performance, relatively simple database system.
- **Cost:** Available free of cost.
- **Query Language Support:** Understands standard based SQL.
- **Portability:** Provides portability as it has been tested with a broad range of different compiler and can work on many different platforms.
- **Data Types:** Provide many data types to support different types of data.
- **Security:** Offers a privilege and password system that is very flexible and secure.
- **Localization:** The server can provide error messages to clients in many languages.
- **Connectivity:** Clients can connect to MySQL Server using several protocols.
- **Client and Tools:** Provides command-line programs such as mysqldump and mysqladmin, and graphical programs such as MySQL Administrator and MySQL Query Browser.

Advantages of MySQL:

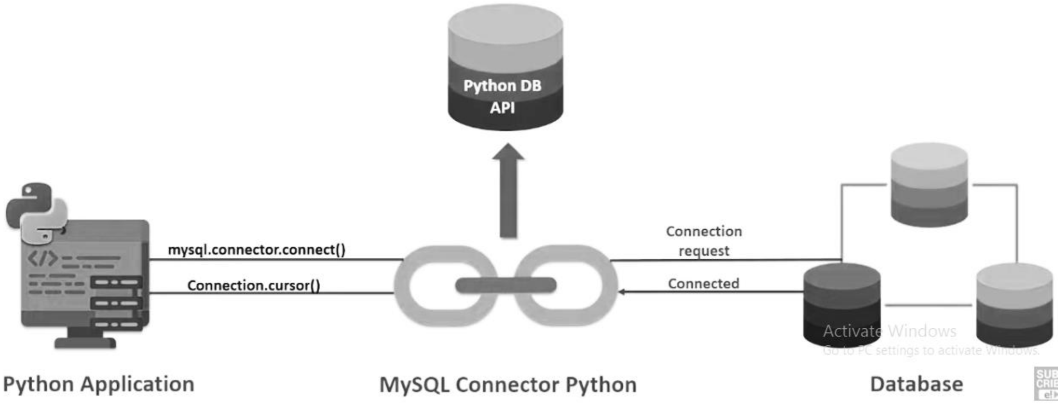
- Reliability and performance
- Availability of source
- Cross-Platform support.
- Powerful uncomplicated software
- Integrity
- Authorization

INTERFACE PYTHON WITH MYSQL



Introductions:

- A database is nothing but an organized collection of data. Data is organized into rows, columns and tables and it is indexed to make it easier to find relevant information
- All companies whether large or small use databases. So it becomes necessary to develop project/software using any programming language like python in such a manner which can interface with such databases which support SQL
- Generalised form of Interface of python with SQL Database can be understood with the help of this diagram.



- Form/any user interface designed in any programming language is **Front End** whereas data given by database as response is known as **Back-End database**.
- Using SQL in any of the dbms, databases and table can be **created and data can be accessed, updated and maintained.**
- The Python standard for database interfaces is the Python DB-API. Python Database API supports a wide range of database servers, like **msql, mysql, postgressql, Informix, oracle, Sybase etc.**
- Python allows us to connect all types of database like **Oracle, MySQL, MongoDB, PostGres SQL, SQL Server, DB2** etc.
- **For example**:
  - Reservation system stores passenger's details for reserving the seats and later on for sending some messages or for printing tickets etc.
  - In school student details are saved for many reasons like attendance, fee collections, exams, report card etc.

Connecting to MySQL from Python

- Once the connector is installed you are ready to connect your python program to MySQL.
- The following steps to follow while connecting your python program with MySQL
  - Open python
  - Import the package required (import mysql.connector)
  - Open the connection to database
  - Create a cursor instance
  - Execute the query and store it in result set
  - Extract data from result set
  - Clean up the environment

SYNOPSIS

Title of the Project: The Finance Broker

Problem Definition: Simplified stock exchange platform

Contribution / Team members: Nischit Kumar , Tushar Menon

Team Detail:

The Project "The Finance Broker" is developed by Nischit ,Tushar it took approx. 0.5 Months to develop this project, working 1.5 Hours daily. All modules completed by us only as per our view and knowledge.

Reason for choosing the Topic:

Objective:
In an attempt to improve the stock exchange platform and reduce risks of data leaks

Hardware Requirements:
Computer / laptop with atleast:
4GB Ram, Intel I3 10th gen,

Hardware Requirements: A Computer/Laptop with Operating System-Windows 7 or above,
x86 64-bit CPU (Intel / AMD architecture), 4 GB RAM, 5 GB free disk space.

Software Requirements: Python 3.6.x or higher version, Pandas Library preinstalled,
Matplotlib Library preinstalled, MS-Office installed

Limitations:
User interface is in python interpreter , No GUI used

References / Bibliography:

- ✔ **References Books**
  - NCERT Python Book-Sumitha Arora
  - The Complete references

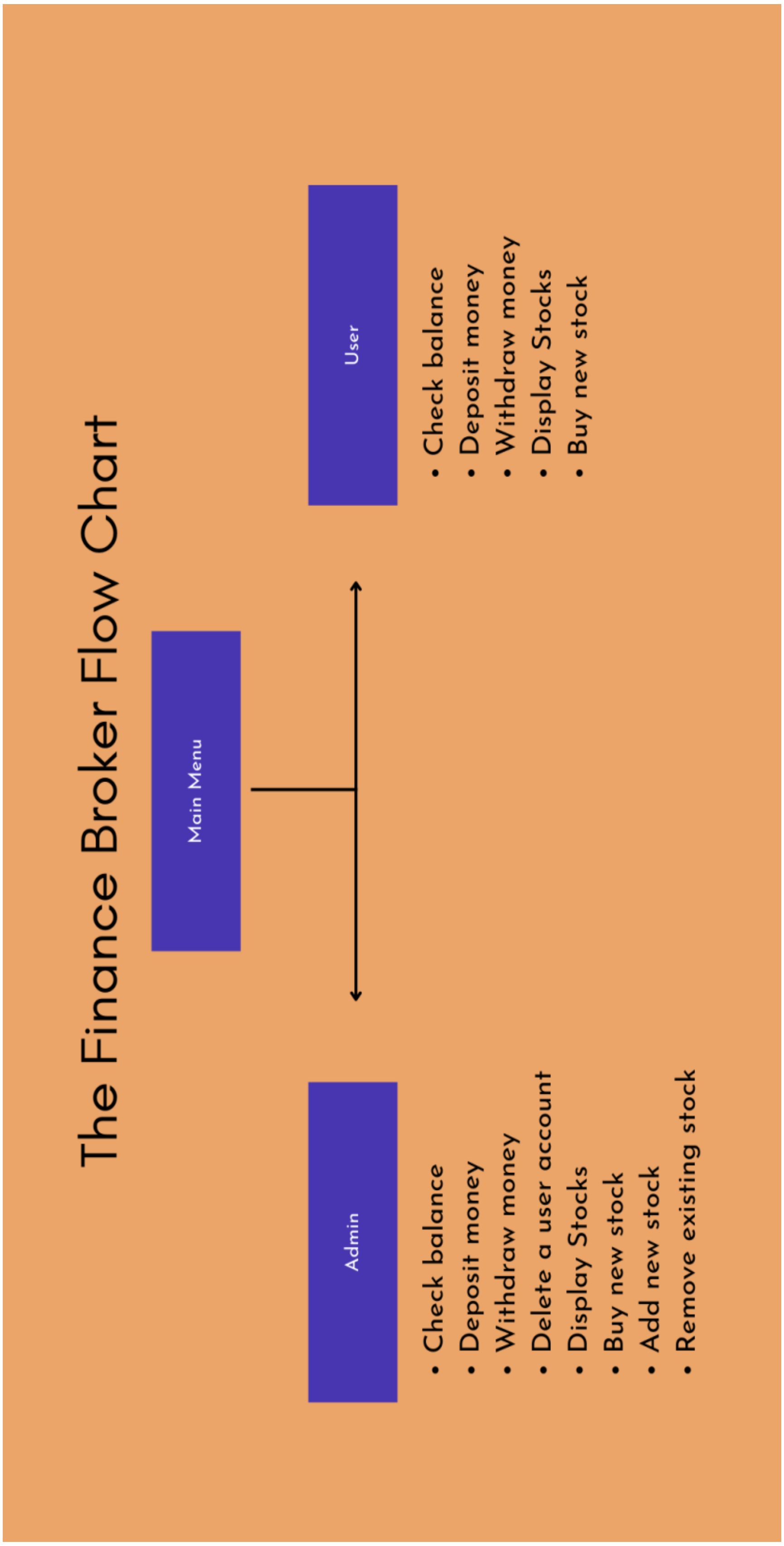
- ✔ **Content links**
  - Geeks for Geeks https: //www.geeksforgeeks.org
  - W3Schools https://www.w3schools.com
  - Tutorials point https://www.tutorialspoint.com
- ✔ **Video Links**
  - Python and SQL Videos https://www.youtube.com

Packages Required: -

- Random module
- MySQL.Connector module
- Math module

Admin username: admin
Admin password: admin
Admin PIN no: 1234

Project Flow Chart



The Finance Broker Flow Chart

Main Menu

Admin

- Check balance
- Deposit money
- Withdraw money
- Delete a user account
- Display Stocks
- Buy new stock
- Add new stock
- Remove existing stock

User

- Check balance
- Deposit money
- Withdraw money
- Display Stocks
- Buy new stock

Code

```
# Importing Modules And Performing Basic Operations
import math
import mysql.connector as ms
import random
mycon = ms.connect(host="localhost", user="root",
                   passwd="root")
mycur = mycon.cursor()
mycur.execute("CREATE DATABASE IF NOT EXISTS FINANCE;")
mycur.execute("USE FINANCE;")
mycur.execute(
    "CREATE TABLE IF NOT EXISTS USERS (ACCNO VARCHAR(10) NOT NULL, BANKNAME
VARCHAR(90) NOT NULL, PINNO CHAR(4) NOT NULL, NAME VARCHAR(90) NOT NULL,
USERNAME VARCHAR(90) PRIMARY KEY, PASSWD VARCHAR(90) NOT NULL, AADHAR
VARCHAR(12), BALANCE VARCHAR(18));")
mycur.execute(
    "CREATE TABLE IF NOT EXISTS STOCKS (STKNAME VARCHAR(90) PRIMARY KEY, VALUE
CHAR(90) NOT NULL, SYMBOL CHAR(9) NOT NULL);")

# Inserting default values to the database



def inserting_vals():
    # Inserting default Stock values
    mycur.execute("INSERT INTO STOCKS VALUES('Apple','139','AAPL');")
    mycur.execute(
        "INSERT INTO STOCKS VALUES('Saudi Aramco', '9.13', '2222.sr')")
    mycur.execute("INSERT INTO STOCKS VALUES('Microsoft', '221.36', 'MSFT')")
    mycur.execute("INSERT INTO STOCKS VALUES('Google', '86.70', 'GOOG')")
    mycur.execute("INSERT INTO STOCKS VALUES('Amazon', '90.98', 'AMZN')")
    mycur.execute("INSERT INTO STOCKS VALUES('Tesla', '207.47', 'TSLA')")
    mycur.execute(
        "INSERT INTO STOCKS VALUES('Berkshire Hathway', '287', 'BRK')")
    mycur.execute(
        "INSERT INTO STOCKS VALUES('Unitded Health', '538.71', 'UNH')")
    mycur.execute("INSERT INTO STOCKS VALUES('Exxon Mobil', '112.31', 'XOM')")
    mycur.execute("INSERT INTO STOCKS VALUES('Johnson', '171.48', 'JNJ')")
    mycur.execute("INSERT INTO STOCKS VALUES('Visa', '196.98', 'V')")
    mycur.execute("INSERT INTO STOCKS VALUES('JPMorgan', '130.58', 'JPM')")
    mycur.execute("INSERT INTO STOCKS VALUES('Walmart', '140.97', 'WMT')")
    mycur.execute("INSERT INTO STOCKS VALUES('Nvidia', '141.56', 'NVDA')")
    mycur.execute("INSERT INTO STOCKS VALUES('Chevron', '183.42', 'CVX')")
    mycur.execute("INSERT INTO STOCKS VALUES('Eli Lilly', '357.41', 'LLY')")
    mycur.execute("INSERT INTO STOCKS VALUES('LVMH', '663.61', 'MCPA')")
    mycur.execute("INSERT INTO STOCKS VALUES('TSCM', '62.48', 'TSM')")

    # Inserting one default User
    mycur.execute(
        "INSERT INTO USERS
VALUES('1234567890','Chase','1234','Admin','admin','admin','123456789012','1200');")

    mycon.commit()


# To prevent Data Overlap Error in MYSQL(repeated entries)
```

```
  try:
      inserting_vals()
  except ms.errors.IntegrityError:
      pass


  # Display related functions

  def introductory_display():
      print("\n\n\n")

print("********************************************************************************
************")
      print("""  ________ _          _______ _                          _____          _
  |__   __| |          |  _____(_)                          |  _ \        | |
      | |  | |___   ____   | |___   _ _ ___   ___ _ _ ___   ____ ____    | |_) |_ ___ ____ | | _______ _ ___
      | |  | '_ \ / _ \  |  ___| | | '_ \ / _` | '_ \ / ___/ _ \   |  _ <| '___/ _ \| |/ / _ \ '___|
      | |  | | | |  ___/  | |    | | | | | (_| | | | | (_|  ___/   | |_) | | | (_) |   <  ___/ |
      |_|  |_| |_|\____|  |_|    |_|_| |_|\___,_|_| |_|\____\____|   |______/|_|  \____/|_|\_\____|_|

                                                                                                  """")
      print()
      print("                                     By Tushar and Nischit                ")
      print()

print("********************************************************************************
************")



  def display_main_user():
      print("\n\n\n")
      print("                        User Menu                  ")
      print("                   1.Existing User? Login          ")
      print("                   2.New User? Sign Up             ")
      print("                   3.Exit                          ")
      print("\n\n\n")


  def display_main():
      print("\n\n\n")
      print("                        Main Menu                  ")
      print("                   1.Admin Login                   ")
      print("                   2.User Login                    ")
      print("                   3.Exit                          ")
      print("\n\n\n")


  def display_submenu_admin():
      print("                  Admin Account Menu               ")
      print("                   1.Show Balance                  ")
      print("                   2.Deposit Money                 ")
      print("                   3.Withdraw Money                ")
      print("                   4.Delete Account                ")
      print("                   5.Show Available Stocks         ")
      print("                   6.Buy New Stock                 ")
      print("                   7.Add New Stock                 ")
      print("                   8.Remove Existing Stock         ")
```

```
    print("                    9.Logout                        ")


def display_submenu():
    print("                  User Account Menu                 ")
    print("                    1.Show Balance                  ")
    print("                    2.Deposit Money                 ")
    print("                    3.Withdraw Money                ")
    print("                    4.Show Available Stocks         ")
    print("                    5.Buy New Stock                 ")
    print("                    6.Logout                        ")


def stock_val_update():
    rand_no = round(random.random(), 2)
    add_sub = ['+', '-']
    rand_op = random.choice(add_sub)
    if rand_op == '+':
        mycur.execute(
            "UPDATE STOCKS SET VALUE = VALUE + '{}'".format(rand_no))
        mycon.commit()
    else:
        mycur.execute(
            "UPDATE STOCKS SET VALUE = VALUE -'{}'".format(rand_no))
        mycon.commit()


def display_stocks():
    # Displaying the stocks
    print()
    mycur.execute("SELECT * FROM STOCKS;")
    displayingstks = mycur.fetchall()
    if len(displayingstks) == 0:
        print("No stocks have been added yet")
    else:
        print("Stock Name                   ",
              "Stock Value                  ", "Stock Symbol                  ")

        for i in displayingstks:
            for j in i:
                try:
                    value = round(float(j), 2)
                    spaces = 30 - len(str(value))
                    print(value, end=" " * spaces)
                except ValueError:
                    spaces = 30 - len(j)
                    print(j, end=" " * spaces)
            print()


def add_stk():
    # Stock name
    stkname = input("Please enter stock name:")
    while stkname.isalpha() == False:
        print("Please enter a valid name.")
        stkname = input("Please enter the real name of the stock: ")

    mycur.execute("SELECT STKNAME FROM STOCKS;")
    stocks_existing = mycur.fetchall()
    temp_list_stocks = []
    for i in stocks_existing:
        for j in i:
            temp_list_stocks.append(j.lower())

    while stkname.lower() in temp_list_stocks:
        print("Stock already exists!")
        break
    else:
        return stkname


def stk_details(stockname):
    # Stock value + Checking if the value entered is valid
    stkval = input(
        "Please enter stock value (in $):")

    while True:
        try:
            float(stkval)
            break
        except ValueError:
            print("You've entered an invalid price of the stock.")
            stkval = input(
                "Please enter a valid price of the stock (in $):")

    # Stock Symbol
    stksym = input("Please enter a symbol for the stock:")
    while stksym.isalpha() == False:
        print("You've entered an invalid symbol.")
        stksym = input(
            "Please enter a valid symbol for the stock:")

    mycur.execute(
        "INSERT INTO STOCKS VALUES('{0}','{1}','{2}');".format(stockname.capitalize(), stkval,
stksym.upper()))
    # mycon.commit()

    print(
        f"{stockname.capitalize()} stock has been successfully added to the market!")


new_var_selec = 0

# Admin credentials
admin_un = "admin"
admin_pass = "admin"


# Selection Of Option from Menu
introductory_display()
display_main()
selection = input("Please enter a menu option:")

# Admin Loop
```

```
def submenu_admin(user, pinno):
    while True:
        """
        1) Show balance
        2) Show available stock
        3) Buy Stock
        4) Add
        5) Remove
        6) Return to Main Menu

        """
        global new_var_selec

        try:
            int(selec)
        except UnboundLocalError:
            print("\n\n\n")
            display_submenu_admin()
            print("\n\n\n")
            selec = input("Please enter a menu option:")

        if new_var_selec != 0:
            infloop_prev = selec
        else:
            infloop_prev = '18'

        if infloop_prev == selec:
            print("\n\n\n")
            display_submenu_admin()
            print("\n\n\n")
            selec = input("Please enter a menu option:")

        if selec == '1':
            # Diplaying Balance
            mycur.execute(
                "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
            balance_report = mycur.fetchall()
            print(f"This is your current balance ${balance_report[0][0]}.")

        elif selec == '2':
            deposit = input("Please enter amount of money to be deposited:")

            while deposit.isnumeric() == False:
                print("You've entered an invalid amount.")
                deposit = input("Please enter a valid amount: ")

            pin_entered = input("Please enter your PIN number:")
            while pin_entered != pinno[0]:
                print("The entered pin is incorrect.")
                pin_entered = input("Please enter your correct pin:")
            else:
                mycur.execute(
                    "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
                balance_report = mycur.fetchall()
                net_balance = float(balance_report[0][0]) + float(deposit)
                mycur.execute("UPDATE USERS SET BALANCE = '{}' WHERE USERNAME = '{}'".format(
                    str(net_balance), user))
                print(f"Your current balance is: ${str(round(net_balance,2))}")
            mycon.commit()

        elif selec == '3':
            withdraw = input("Please enter amount of money to be withdrawn:")

            while withdraw.isnumeric() == False:
                print("You've entered an invalid amount.")
                withdraw = input("Please enter a valid amount: ")

            pin_entered = input("Please enter your PIN number:")
            while pin_entered != pinno[0]:
                print("The entered pin is incorrect.")
                pin_entered = input("Please enter your correct pin:")
            else:
                mycur.execute(
                    "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
                balance_report = mycur.fetchall()
                net_balance = float(balance_report[0][0]) - float(withdraw)
                if net_balance < 0:
                    print(
                        f"You've insufficient amount ${math.fabs(net_balance)}!")
                else:
                    mycur.execute("UPDATE USERS SET BALANCE = '{}' WHERE USERNAME =
'{}'".format(
                        str(net_balance), user))
                    print(f"Your current balance is: ${str(round(net_balance,2))}")
            mycon.commit()

        elif selec == '4':
            user_del = input("Enter username to be deleted:")
            while user_del.isspace() == True or user_del == "":
                print("You've entered an invalid username.")
                user_del = input("Please enter a valid username:")
            else:
                mycur.execute("SELECT USERNAME FROM USERS;")
                users_del_list = mycur.fetchall()
                temp_list_users_del = []
                for i in users_del_list:
                    for j in i:
                        temp_list_users_del.append(j)
                while user_del.lower() not in temp_list_users_del:
                    print("This username doesn't exist.")
                    user_del = input("Please Enter another username:")
                print()

            replycu = input("Are you sure? Y/N?:")
            while replycu.isalpha() == False or replycu.lower() not in ['y', 'n']:
                print("You've entered an invalid option.")
                replycu = input("Please enter a valid option:")
            else:
                if replycu.lower() == "y":
                    print()
                    mycur.execute(
                        "DELETE FROM USERS WHERE USERNAME = '{}'".format(user_del))
                    print(
                        f"{user_del.capitalize()} account has been deleted successfully.")
                    mycon.commit()
                    print()
        else:
            print()

    elif selec == '5':
        display_stocks()

    elif selec == '6':
        display_stocks()
        print()

        stock_to_be_bought = input(
            "Please enter the stock's name you wish to purchase:")
        while stock_to_be_bought.isalpha() == False:
            print("You've entered an invalid stock name.")
            stock_to_be_bought = input("Please enter a valid stock name:")

        mycur.execute("SELECT STKNAME FROM STOCKS;")
        stock_names = mycur.fetchall()
        temp_list = []
        for i in stock_names:
            for j in i:
                temp_list.append(j.lower())
        while stock_to_be_bought.lower() not in temp_list:
            print("This stock does not exist!")
            print("Please choose from the above mentioned stocks or add new stock.")
            add_new_stock = input("Add new Stock? Y/N?:")

            while add_new_stock.isalpha() == False or add_new_stock.lower() not in ['y', 'n']:
                print("You've entered an invalid option.")
                add_new_stock = input("Please enter a valid option:")

            if add_new_stock.lower() == "y":
                stockname_returned = add_stk()
                if stockname_returned != None:
                    stk_details(stockname_returned)
                mycon.commit()
                break
            else:
                stock_to_be_bought = input(
                    "Please enter the stock's name from the above mentioned names:")
        else:
            quantity = float(input(
                f"Please enter quantity of {stock_to_be_bought.capitalize()}:"))
            while math.ceil(quantity) != math.floor(quantity) or quantity < 1:
                while str(quantity).isnumeric() == False:
                    print("You've entered an invalid stock quantity.")
                    quantity = float(input(
                        "Please enter a valid stock quantity:"))
                    if math.ceil(quantity) == math.floor(quantity):
                        break

            pin_entered = input("Please enter your PIN number:")
            while pin_entered != pinno[0]:
                print("The entered pin is incorrect.")
                pin_entered = input("Please enter your correct pin:")
            else:
                mycur.execute(
                    "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
                    balance_report = mycur.fetchall()
                    mycur.execute(
                        "SELECT VALUE FROM STOCKS WHERE STKNAME =
'{}'".format(stock_to_be_bought))
                    stock_value = mycur.fetchall()
                    net_balance = float(
                        balance_report[0][0]) - (float(quantity) * float(stock_value[0][0]))
                    if net_balance < 0:
                        print(
                            f"You've insufficient amount of ${math.fabs(net_balance)}!")
                    else:
                        mycur.execute("UPDATE USERS SET BALANCE = '{}' WHERE USERNAME =
'{}'".format(
                            str(net_balance), user))
                        print()
                        print(
                            f"You've successfully bought {stock_to_be_bought} for a price of
${str(round(float(quantity) * float(stock_value[0][0]),2))}.")
                        print(
                            f"Your updated balance is $ {str(round(net_balance,2))}")
                    mycon.commit()

        elif selec == '7':
            stockname_returned = add_stk()
            if stockname_returned != None:
                stk_details(stockname_returned)
            mycon.commit()

        elif selec == '8':
            display_stocks()
            print()

            # Validating the Stock name
            stkrem = input(
                "Please enter the stock's name that has to be removed from the listing:")
            while stkrem.isalpha() == False:
                print("Please enter a valid name.")
                stkrem = input("Please enter the real name of the stock: ")
            mycur.execute(
                "SELECT * FROM STOCKS WHERE STKNAME = '{}'".format(stkrem.capitalize()))
            stkrec = mycur.fetchall()

            # Checking and Deleting The Stock
            if len(stkrem) == 0:
                print("No such stock exists.")

            else:
                mycur.execute(
                    "DELETE FROM STOCKS WHERE STKNAME = '{}'".format(stkrem))
                print(
                    f"The {stkrem.capitalize()} has been successfully removed from the listing!")
            mycon.commit()

        elif selec == '9':
            print("You've successfully returned to the main menu!")
            new_var_selec = 0
            break
        else:
            options_list = []
            for i in range(1, 10):
                options_list.append(str(i))
            while selec not in options_list:
                selec = input("Please Enter A Valid Menu Option:")
                new_var_selec = -1
            print()

        new_var_selec += 1
        stock_val_update()


# User Loop
def submenu(user, pinno):
    while True:
        """
        1) Show balance
        2) Show available stock
        3) Buy Stock
        4) Add
        5) Remove
        6) Return to Main Menu

        """
        global new_var_selec

        try:
            int(selec)
        except UnboundLocalError:
            print("\n\n\n")
            display_submenu()
            print("\n\n\n")
            selec = input("Please enter a menu option:")

        if new_var_selec != 0:
            infloop_prev = selec
        else:
            infloop_prev = '18'

        if infloop_prev == selec:
            print("\n\n\n")
            display_submenu()
            print("\n\n\n")
            selec = input("Please enter a menu option:")

        if selec == '1':
            # Diplaying Balance
            mycur.execute(
                "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
            balance_report = mycur.fetchall()
            print(f"This is your current balance ${balance_report[0][0]}.")

        elif selec == '2':
            deposit = input("Please enter amount of money to be deposited:")

            while deposit.isnumeric() == False:
                print("You've entered an invalid amount.")
```

```
                  deposit = input("Please enter a valid amount: ")

              pin_entered = input("Please enter your PIN number:")
              while pin_entered != pinno[0]:
                  print("The entered pin is incorrect.")
                  pin_entered = input("Please enter your correct pin:")
              else:
                  mycur.execute(
                      "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
                  balance_report = mycur.fetchall()
                  net_balance = float(balance_report[0][0]) + float(deposit)
                  mycur.execute("UPDATE USERS SET BALANCE = '{}' WHERE USERNAME = '{}'".format(
                      str(net_balance), user))
                  print(f"Your current balance is: ${str(round(net_balance,2))}")
              mycon.commit()

          elif selec == '3':
              withdraw = input("Please enter amount of money to be withdrawn:")

              while withdraw.isnumeric() == False:
                  print("You've entered an invalid amount.")
                  withdraw = input("Please enter a valid amount: ")

              pin_entered = input("Please enter your PIN number:")
              while pin_entered != pinno[0]:
                  print("The entered pin is incorrect.")
                  pin_entered = input("Please enter your correct pin:")
              else:
                  mycur.execute(
                      "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
                  balance_report = mycur.fetchall()
                  net_balance = float(balance_report[0][0]) - float(withdraw)
                  if net_balance < 0:
                      print(
                          f"You've insufficient amount ${math.fabs(net_balance)}!")
                  else:
                      mycur.execute("UPDATE USERS SET BALANCE = '{}' WHERE USERNAME =
'{}'".format(
                          str(net_balance), user))
                      print(f"Your current balance is: ${str(round(net_balance,2))}")
              mycon.commit()

          elif selec == '4':
              display_stocks()

          elif selec == '5':
              display_stocks()
              print()

              stock_to_be_bought = input(
                  "Please enter the stock's name you wish to purchase:")
              while stock_to_be_bought.isalpha() == False:
                  print("You've entered an invalid stock name.")
                  stock_to_be_bought = input("Please enter a valid stock name:")

              mycur.execute("SELECT STKNAME FROM STOCKS;")
              stock_names = mycur.fetchall()
              temp_list = []
```

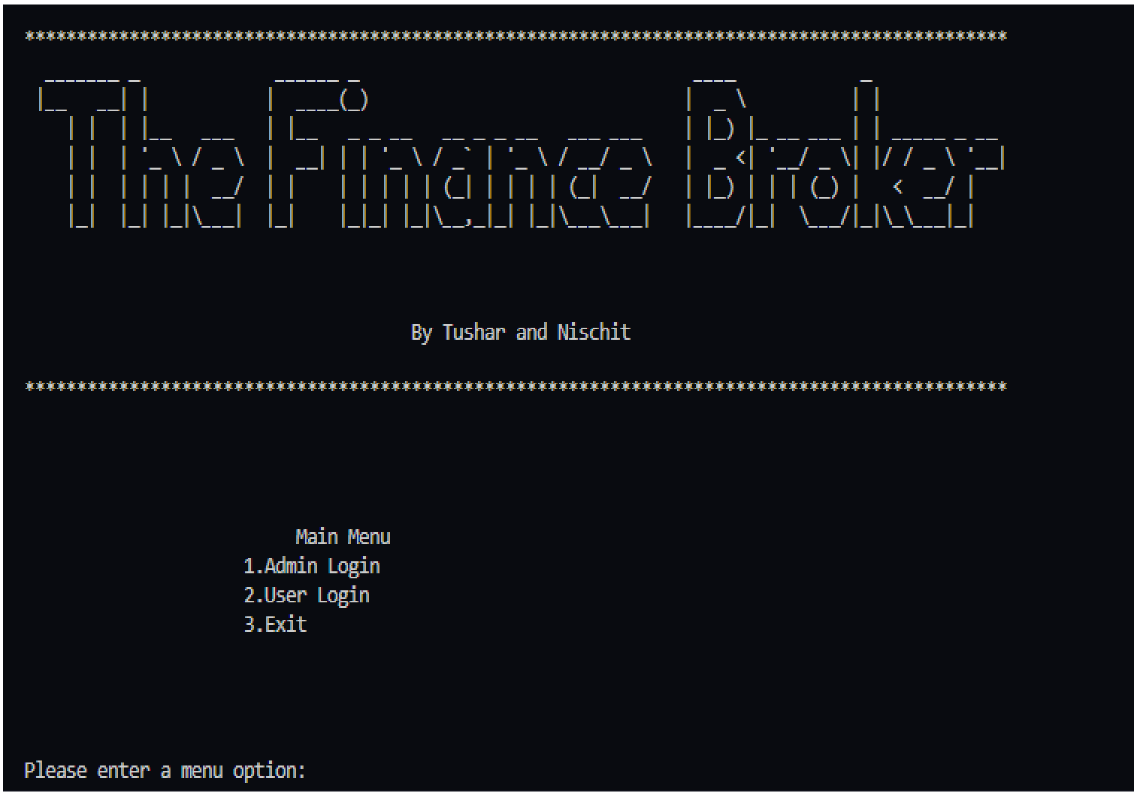
```
            for i in stock_names:
                for j in i:
                    temp_list.append(j.lower())
            while stock_to_be_bought.lower() not in temp_list:
                print("This stock does not exist!")
                print("Please choose from the above mentioned stocks or add new stock.")
                stock_to_be_bought = input("Please enter the stock's name:")

            else:
                quantity = float(input(
                    f"Please enter quantity of {stock_to_be_bought.capitalize()}:"))
                while math.ceil(quantity) != math.floor(quantity) or quantity < 1:
                    while str(quantity).isnumeric() == False:
                        print("You've entered an invalid stock quantity.")
                        quantity = float(input(
                            "Please enter a valid stock quantity:"))
                        if math.ceil(quantity) == math.floor(quantity):
                            break

                pin_entered = input("Please enter your PIN number:")
                while pin_entered != pinno[0]:
                    print("The entered pin is incorrect.")
                    pin_entered = input("Please enter your correct pin:")
                else:
                    mycur.execute(
                        "SELECT BALANCE FROM USERS WHERE USERNAME = '{}';".format(user))
                    balance_report = mycur.fetchall()
                    mycur.execute(
                        "SELECT VALUE FROM STOCKS WHERE STKNAME =
'{}'".format(stock_to_be_bought))
                    stock_value = mycur.fetchall()
                    net_balance = float(
                        balance_report[0][0]) - (float(quantity) * float(stock_value[0][0]))
                    if net_balance < 0:
                        print(
                            f"You've insufficient amount of ${math.fabs(net_balance)}!")
                    else:
                        mycur.execute("UPDATE USERS SET BALANCE = '{}' WHERE USERNAME =
'{}'".format(
                            str(net_balance), user))
                        print()
                        print(
                            f"You've successfully bought {stock_to_be_bought} for a price of
${str(round(float(quantity) * float(stock_value[0][0]),2))}.")
                        print(
                            f"Your updated balance is $ {str(round(net_balance,2))}")
                    mycon.commit()

        elif selec == '6':
            print("You've successfully returned to the main menu!")
            new_var_selec = 0
            break

        else:
            options_list = []
            for i in range(1, 10):
                options_list.append(str(i))
            while selec not in options_list:
                selec = input("Please Enter A Valid Menu Option:")
                new_var_selec = -1
            print()

        new_var_selec += 1
        stock_val_update()


mycon.commit()
new_var = 1
new_var_u = 1

# Sign Up form


def sign_up():
    print("Please enter the following details:-")

    # Name
    name = input("Please Enter Your Name: ")
    while name.isalpha() == False:
        print("You've entered an invalid name.")
        name = input("Please enter your real name: ")

    print()

    # Username
    username = input("Please enter a username: ")
    while username.isspace() == True or username == "":
        print("You've entered an invalid username.")
        username = input("Please enter a valid username:")
    else:
        mycur.execute("SELECT USERNAME FROM USERS;")
        users = mycur.fetchall()
        temp_list_usernames = []
        for i in users:
            for j in i:
                temp_list_usernames.append(j)

        # Checking if Username already exists
        while username.lower() in temp_list_usernames:
            print("This username has already been taken.")
            username = input("Please Enter another username:")
        print()

    print()

    # Password
    pwd = input("Please Enter A Password:")
    pwd1 = input("Please Enter The Password Again:")

    # Checking if the Passwords match
    while pwd != pwd1:
        print("Both The Passwords Do Not Match")
        pwd = input("Please Enter A Password:")
        pwd1 = input("Please Enter The Password Again:")
    else:
        print("Your Password has been set successfully!")
    print()

    # Bank Details + Connection
    bankname = input("Please Enter Your Bank Name:")

    while bankname.isalpha() == False:
        print("You've entered an invalid name.")
        bankname = input("Please enter a valid bank name: ")

    # Checking for 'Bank' at the end
    banktest = bankname.split()
    if banktest[-1].lower() == "bank":
        del banktest[-1]
        "".join(banktest)
    bankname = banktest

    print()

    # Process
    accno = input("Please enter your 10-digit account number:")

    # Validating Account number
    while accno.isnumeric() == False or len(accno) != 10:
        print("You've entered an incorrent account number.")
        accno = input("Please enter a valid account number:")

    print()

    # Aadhar number
    aadhar = input("Please enter your 12 digit Aadhar number:")

    while aadhar.isnumeric() == False or len(aadhar) != 12:
        print("You've entered an invalid Aadhar number.")
        aadhar = input("Please enter a valid Aadhar number: ")

    mycur.execute("SELECT AADHAR FROM USERS;")
    aadhars_of_users = mycur.fetchall()

    # Checking if Aadhar is repeated
    while username.lower() in users:
        print("This Aadhar has already exists.")
        aad_reply = input("Existing User? Y/N?")
        while aad_reply.isalpha() == False or aad_reply.lower() not in ['y', 'n']:
            print("You've entered an invalid option.")
            aad_reply = input("Please enter a valid option:")
        else:
            if reply.lower() == "y":
                print("Then please do proceed to the existing user option.")
                print()
                break
            else:
                aadhar = input("Please enter your aadhar number again:")
                print()

    print()

    # PIN number
```

```
    print("Connecting...")
    pin1 = input("Please enter a PIN No:")
    while len(pin1) != 4 or pin1 == "":
        print("Please Enter A Valid PIN")
        pin1 = input("Please Enter Your PIN No:")

    pin2 = input("Please retype your PIN No to confirm:")
    while len(pin2) != 4 or pin2 == "":
        print("Please Enter A Valid PIN")
        pin2 = input("Please Enter Your PIN No:")

    print()

    # Checking if the PIN No do match
    while pin1 != pin2:
        print("Both The PIN Numbers Do Not Match")
        pin1 = input("Please enter a PIN No:")

        # Validating PIN number
        while len(pin1) != 4:
            print("Please Enter A Valid PIN")
            pin1 = input("Please Enter Your PIN No:")

        pin2 = input("Please retype your PIN No to confirm:")

        # Validating PIN number
        while len(pin2) != 4:
            print("Please Enter A Valid PIN")
            pin2 = input("Please Enter Your PIN No:")
    else:
        print("Your PIN No has been set successfully!")

    print()

    # Balance
    balance = input(
        "Please enter amount of money you wish to deposit (in $):")

    try:
        float(balance)
    except ValueError:
        while balance.isnumeric() == False:
            print("You've entered an invalid amount.")
            balance = input("Please Enter a valid amount (in $):")

    balance = balance.lstrip("0")

    mycur.execute(
        "INSERT INTO USERS VALUES ('{}','{}','{}','{}', '{}', '{}', '{}', '{}')".format(accno, bankname[0],
pin1, name, username, pwd, aadhar, balance))
    print()
    print(
        f"You've successfully connected to your account {accno}, of {bankname[0]} bank and deposited
${balance} !")
    mycon.commit()
    pin_ls = []
    pin_ls.append(pin1)
    submenu(username, pin_ls)



# Main Loop
while True:

    if new_var == 1:
        new_var += 1
    else:
        display_main()
        selection = input("Please enter a menu option:")

    if selection == '1':
        usrname_existing_ad = input("Please enter the admin username:")
        while usrname_existing_ad != 'admin':
            print("This user doesn't exist!")
            usrname_existing_ad = input("Please enter a valid username:")

        pwd_existing_ad = input("Please enter the admin password:")
        while pwd_existing_ad != 'admin':
            print("The password entered is incorrect!")
            pwd_existing_ad = input("Please enter the correct password:")

        print()
        print("You've successfully logged in to the admin account!")

        pin_admin = ['1234']
        submenu_admin(admin_un, pin_admin)
        stock_val_update()


    elif selection == '2':
        print()
        display_main_user()
        selection_u = input("Please enter a menu option:")

        while True:
            if new_var_u == 1:
                new_var_u += 1
            else:
                display_main_user()
                selection_u = input("Please enter a menu option:")

            if selection_u == '1':
                # For Username
                mycur.execute("SELECT USERNAME FROM USERS;")
                usernames = mycur.fetchall()
                temp_list_usn = []
                for i in usernames:
                    for j in i:
                        temp_list_usn.append(j)

                usrname_existing = input("Please enter your username:")

                while usrname_existing not in temp_list_usn:
                    print("This user doesn't exist!")
                    reply = input("New User? Y/N?:")
                    while reply.isalpha() == False or reply.lower() not in ['y', 'n']:
                        print("You've entered an invalid option.")
                        reply = input("Please enter a valid option:")

                    if reply.lower() == "y":
                        n = 0
                        sign_up()
                        break
                    else:
                        usrname_existing = input(
                            "Please enter your username again:")
                        print()
                n = 1
                if n != 0:
                    continue
                else:
                    break


                # For Password
                mycur.execute(
                    "SELECT PASSWD FROM USERS WHERE USERNAME =
    '{}';".format(usrname_existing))
                passwords = mycur.fetchall()
                pwd_existing = input("Please enter your password:")
                temp_list_pass = []
                for i in passwords:
                    for j in i:
                        temp_list_pass.append(j)
                print()

                while pwd_existing not in temp_list_pass:
                    print("You've entered an incorrect password!")
                    replyp = input("Forgot Password? Y/N?")
                    while replyp.isalpha() == False or replyp.lower() not in ['y', 'n']:
                        print("You've entered an invalid option.")
                        replyp = input("Please enter a valid option:")
                    else:
                        if replyp.lower() == "y":
                            print("Then please enter the following details.")
                            print()

                            # Process
                            accno = input(
                                "Please enter your 10-digit account number:")

                            # Validating Account number
                            while accno.isnumeric() == False or len(accno) != 10:
                                print("You've entered an incorrent account number.")
                                accno = input(
                                    "Please enter a valid account number:")

                            mycur.execute(
                                "SELECT ACCNO FROM USERS WHERE USERNAME =
    '{}'".format(usrname_existing))
                            accno_rec = mycur.fetchall()
                            temp_list_acc = []
                            for i in accno_rec:
                                for j in i:
                                    temp_list_acc.append(j)
                            while accno != str(temp_list_acc[0]):
                                print(
                                    "Your account doesn't exist please create a new account!")
                                replya = input("New User? Y/N?")
                                while replya.isalpha() == False or replya.lower() not in ['y', 'n']:
                                    print("You've entered an invalid option.")
                                    replya = input(
                                        "Please enter a valid option:")
                                else:
                                    if replya.lower() == "y":
                                        print()
                                        sign_up()
                                        break
                                    else:
                                        accno = input(
                                            "Please enter your account number again:")
                                        print()
                                        while accno.isnumeric() == False or len(accno) != 10:
                                            print(
                                                "You've entered an incorrent account number.")
                                            accno = input(
                                                "Please enter a valid account number:")

                            # Aadhar number
                            aadhar_no = input(
                                "Please enter your Aadhar number:")

                            while aadhar_no.isnumeric() == False:
                                print("You've entered an invalid Aadhar number.")
                                aadhar_no = input(
                                    "Please enter a valid Aadhar number: ")

                            mycur.execute(
                                "SELECT AADHAR FROM USERS WHERE USERNAME =
    '{}';".format(usrname_existing))
                            aadhars_of_users = mycur.fetchall()

                            # Checking if Aadhar is repeated
                            while aadhar_no != aadhars_of_users[0][0]:
                                print(
                                    "Your account doesn't exist please create a new account!")
                                replyc = input("New User? Y/N?")
                                while replyc.isalpha() == False or replyc.lower() not in ['y', 'n']:
                                    print("You've entered an invalid option.")
                                    replyc = input(
                                        "Please enter a valid option:")
                                else:
                                    if replyc.lower() == "y":
                                        print()
                                        sign_up()
                                        break
                                    else:
                                        accno = input(
                                            "Please enter your Aadhar number again:")
                                        print()
                                        while accno.isnumeric() == False:
```

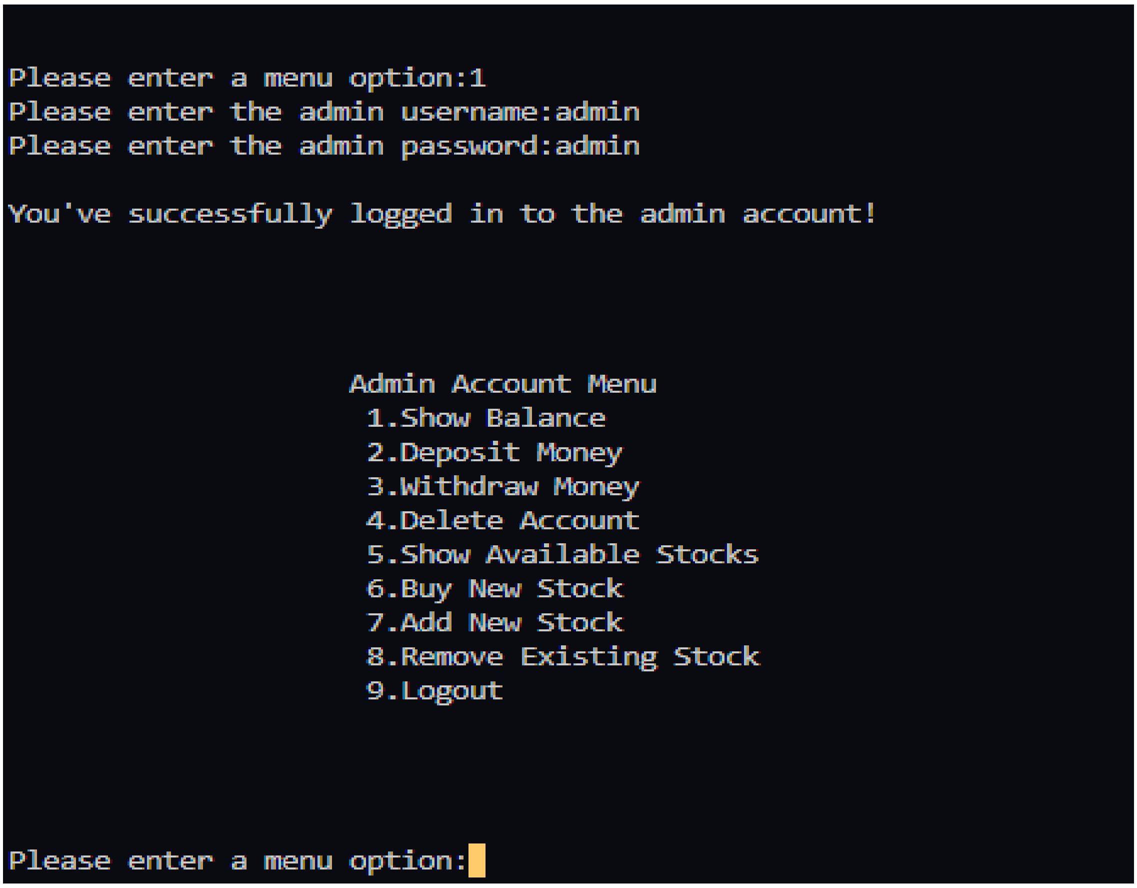
```
                                              print(
                                                  "You've entered an incorrent Aadhar number.")
                                              accno = input(
                                                  "Please enter a valid Aadhar number:")

                              # PIN number
                              print("Connecting...")
                              pin_no = input("Please enter your PIN No:")

                              # Validating PIN number
                              while len(pin_no) != 4:
                                  print("Please Enter A Valid PIN")
                                  pin_no = input("Please Enter Your PIN No:")
                                  break

                              mycur.execute(
                                  "SELECT PINNO FROM USERS WHERE USERNAME =
'{}';".format(usrname_existing))
                              pin_of_users = mycur.fetchall()

                              # Checking if the PIN Nos match
                              while pin_no != pin_of_users[0][0]:
                                  print(
                                      "Your PIN No doesn't match!")
                                  pin_no = input(
                                      "Please enter your PIN No again:")
                                  print()
                                  while pin_no.isnumeric() == False or len(pin_no) != 4:
                                      print(
                                          "You've entered an incorrent PIN No.")
                                      pin_no = input(
                                          "Please enter a valid PIN No:")

                              pwd_new = input("Please enter new password:")
                              pwd_new1 = input(
                                  "Please enter your password again:")

                              # Checking if the Passwords match
                              while pwd_new != pwd_new1:
                                  print("Both The Passwords Do Not Match")
                                  pwd_new = input("Please enter new password:")
                                  pwd_new1 = input(
                                      "Please enter your password again:")
                              else:
                                  mycur.execute("UPDATE USERS SET PASSWD = '{}' WHERE USERNAME =
'{}'".format(
                                      pwd_new, usrname_existing))
                                  print("Your Password has been set successfully!")
                                  print()
                                  break

                          else:
                              pwd_existing = input(
                                  "Please enter your password again:")
                              print()

                  else:
                      print("You've successfully logged in to your account!")
```

```
                        if usrname_existing == admin_un and pwd_existing == admin_pass:
                            pin_admin = ['1234']
                            submenu_admin(admin_un, pin_admin)
                        else:
                            mycur.execute(
                                "SELECT PINNO FROM USERS WHERE USERNAME =
'{}'".format(usrname_existing))
                            pin_recs = mycur.fetchall()
                            submenu(usrname_existing, pin_recs[0])



                elif selection_u == '2':
                    sign_up()
                    mycon.commit()

                elif selection_u == '3':
                    break

                else:
                    selection_u = input("Please Enter A Valid Menu Option:")
                    new_var_u = 1
                    print()

            stock_val_update()

        elif selection == '3':
            break

        else:
            selection = input("Please Enter A Valid Menu Option:")
            new_var = 1
            print()

        stock_val_update()


    mycon.commit()
    print()
    print("You've exited the program successfully!")
    print(""" _______ _            _      __    __          _
     |__   __| |           | |     \ \   / /        | |
       | |  | |__   __ _ _ __| | __    \ \_/ /__  _   _ | |
       | |  | '_ \ / _` | '_ \| |/ /     \   / _ \| | | | |
       | |  | | | | (_| | | | |   <       | | (_) | |_| | |_|
       |_|  |_| |_|\__,_|_| |_|_|\_\      |_|\___/ \__,_| (_)



                                            """)
```

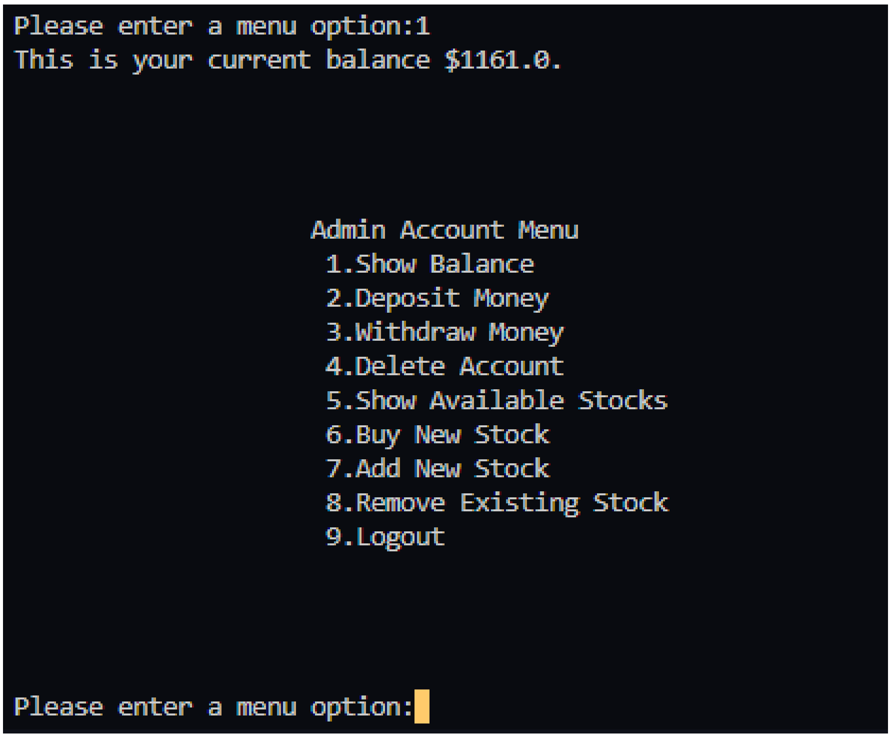
Output



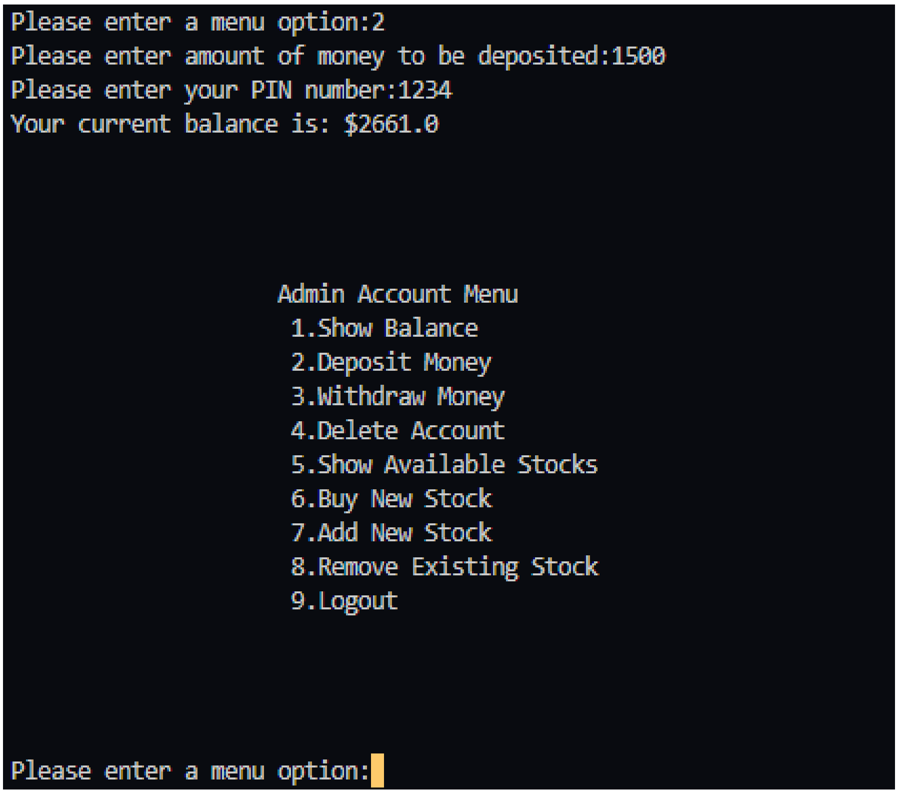
```
****************************************************************************************************

  _______ _            ______ _                                ____            _
 |__   __| |          |  ____(_)                              |  _ \          | |
    | |  | |__   ___  | |__   _ _ __   __ _ _ __   ___ ___    | |_) |_ __ ___ | | _____ _ __
    | |  | '_ \ / _ \ |  __| | | '_ \ / _` | '_ \ / __/ _ \   |  _ <| '__/ _ \| |/ / _ \ '__|
    | |  | | | |  __/ | |    | | | | | (_| | | | | (_|  __/   | |_) | | | (_) |   <  __/ |
    |_|  |_| |_|\___| |_|    |_|_| |_|\__,_|_| |_|\___\___|   |____/|_|  \___/|_|\_\___|_|



                                        By Tushar and Nischit

****************************************************************************************************




                         Main Menu
                    1.Admin Login
                    2.User Login
                    3.Exit




Please enter a menu option:
```



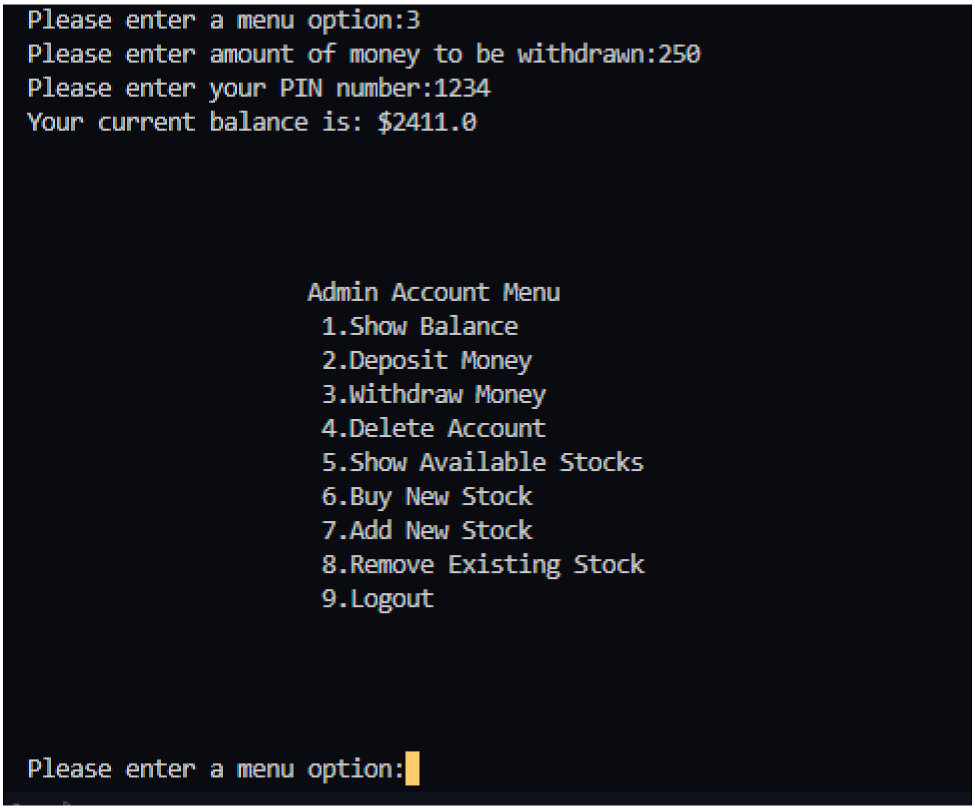
```

Please enter a menu option:1
Please enter the admin username:admin
Please enter the admin password:admin

You've successfully logged in to the admin account!




                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout




Please enter a menu option:
```



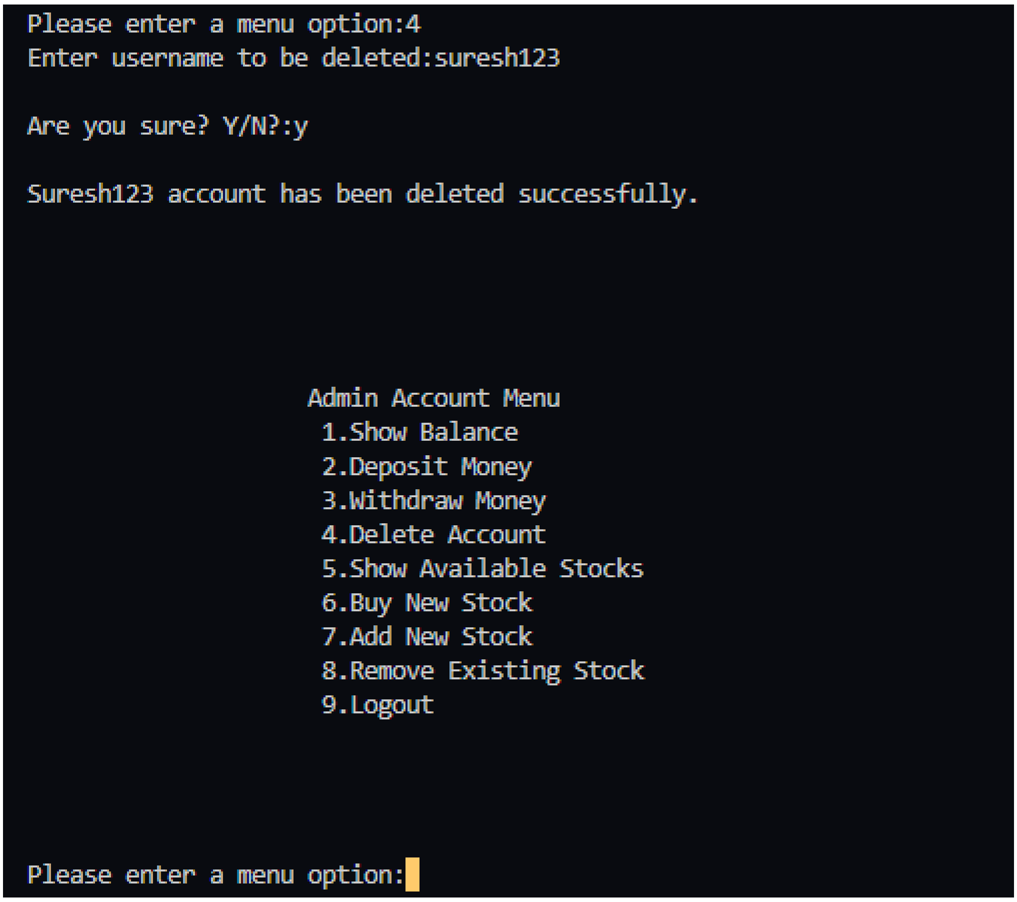
```
Please enter a menu option:1
This is your current balance $1161.0.



                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout



Please enter a menu option:
```



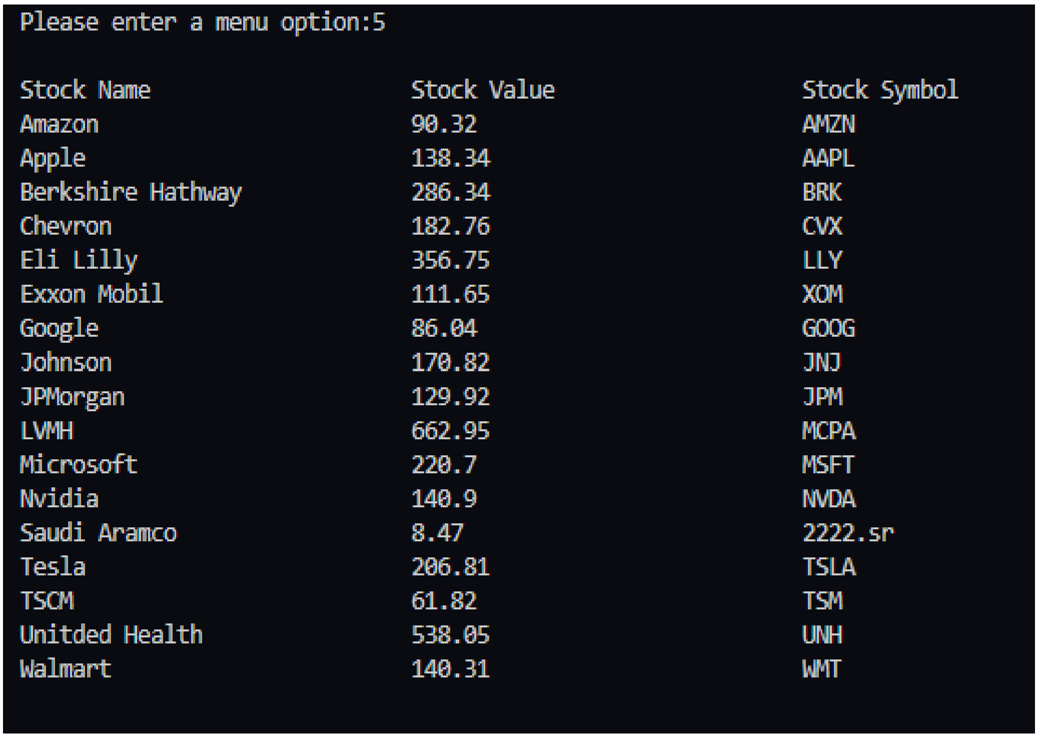
```
Please enter a menu option:2
Please enter amount of money to be deposited:1500
Please enter your PIN number:1234
Your current balance is: $2661.0



                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout



Please enter a menu option:
```



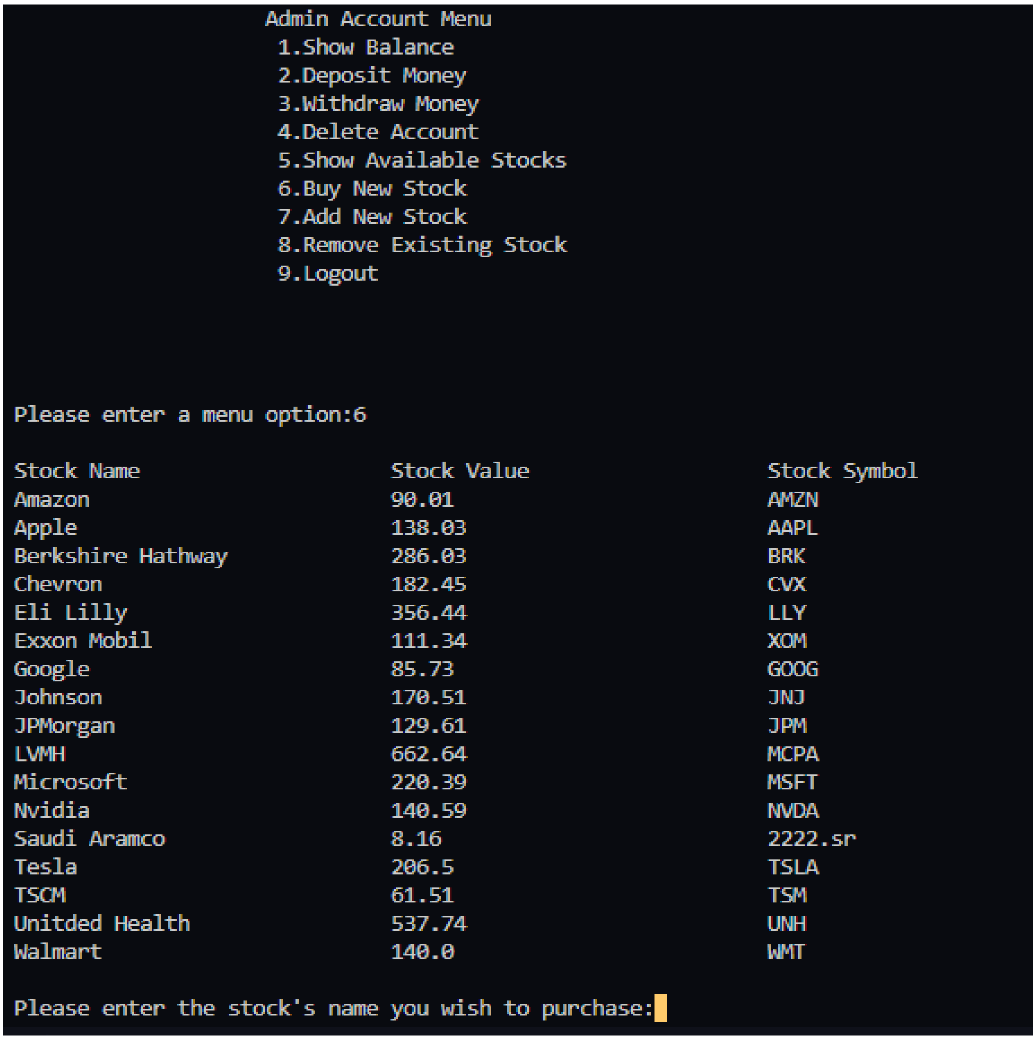
```
Please enter a menu option:3
Please enter amount of money to be withdrawn:250
Please enter your PIN number:1234
Your current balance is: $2411.0




                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout




Please enter a menu option:
```



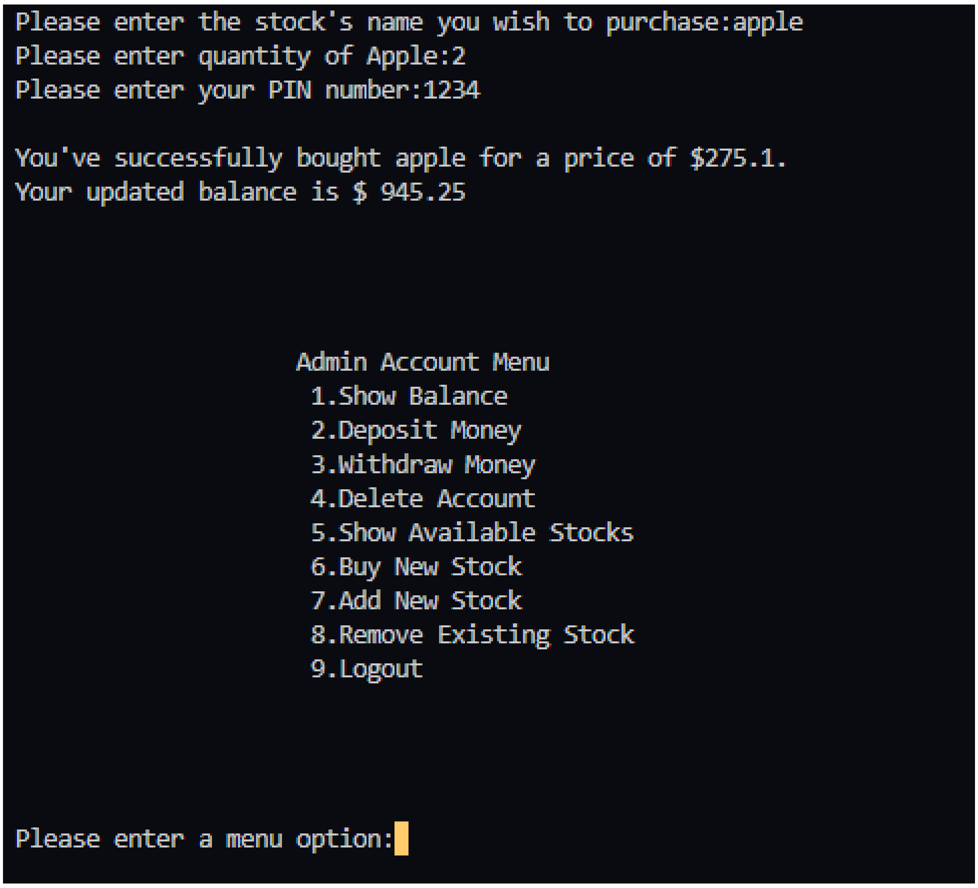
```
Please enter a menu option:4
Enter username to be deleted:suresh123

Are you sure? Y/N?:y

Suresh123 account has been deleted successfully.





                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout




Please enter a menu option:
```



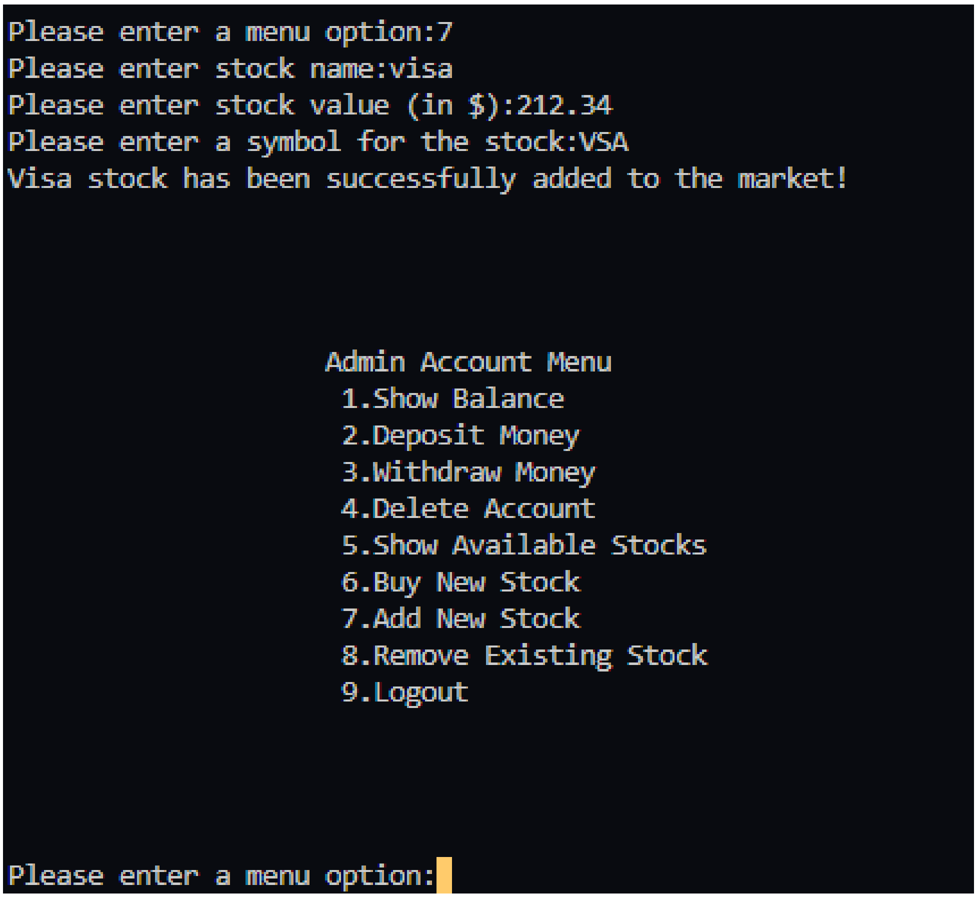
```
Please enter a menu option:5

Stock Name                    Stock Value                   Stock Symbol
Amazon                        90.32                         AMZN
Apple                         138.34                        AAPL
Berkshire Hathway             286.34                        BRK
Chevron                       182.76                        CVX
Eli Lilly                     356.75                        LLY
Exxon Mobil                   111.65                        XOM
Google                        86.04                         GOOG
Johnson                       170.82                        JNJ
JPMorgan                      129.92                        JPM
LVMH                          662.95                        MCPA
Microsoft                     220.7                         MSFT
Nvidia                        140.9                         NVDA
Saudi Aramco                  8.47                          2222.sr
Tesla                         206.81                        TSLA
TSCM                          61.82                         TSM
Unitded Health                538.05                        UNH
Walmart                       140.31                        WMT
```



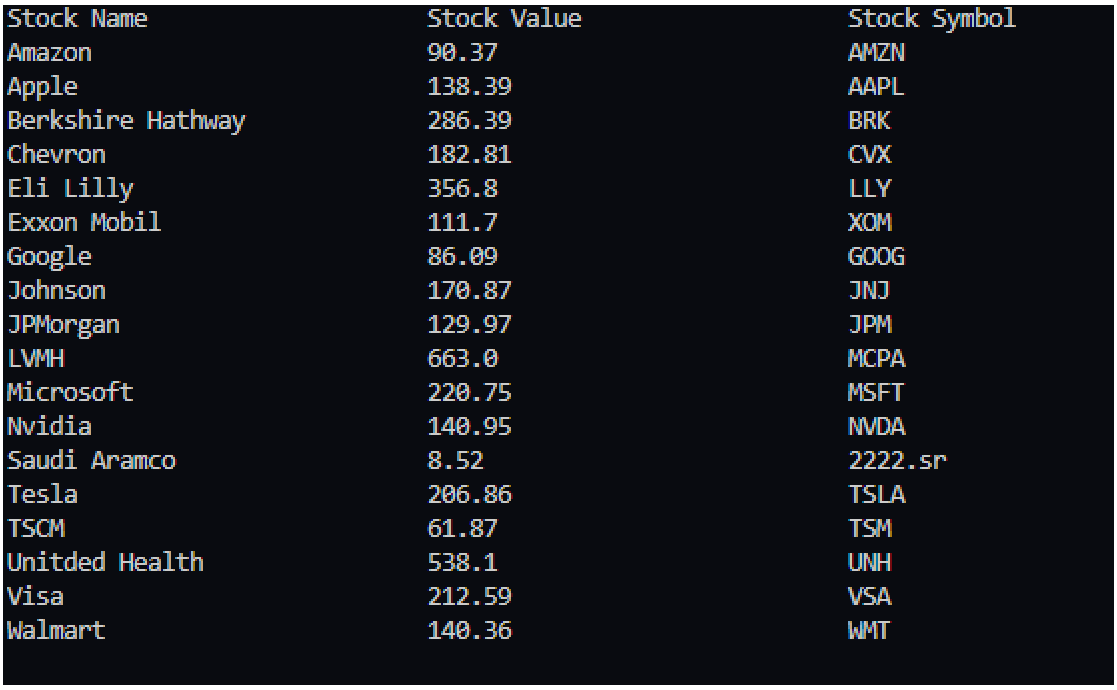
```
                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout



Please enter a menu option:6

Stock Name                    Stock Value                   Stock Symbol
Amazon                        90.01                         AMZN
Apple                         138.03                        AAPL
Berkshire Hathway             286.03                        BRK
Chevron                       182.45                        CVX
Eli Lilly                     356.44                        LLY
Exxon Mobil                   111.34                        XOM
Google                        85.73                         GOOG
Johnson                       170.51                        JNJ
JPMorgan                      129.61                        JPM
LVMH                          662.64                        MCPA
Microsoft                     220.39                        MSFT
Nvidia                        140.59                        NVDA
Saudi Aramco                  8.16                          2222.sr
Tesla                         206.5                         TSLA
TSCM                          61.51                         TSM
Unitded Health                537.74                        UNH
Walmart                       140.0                         WMT

Please enter the stock's name you wish to purchase:
```



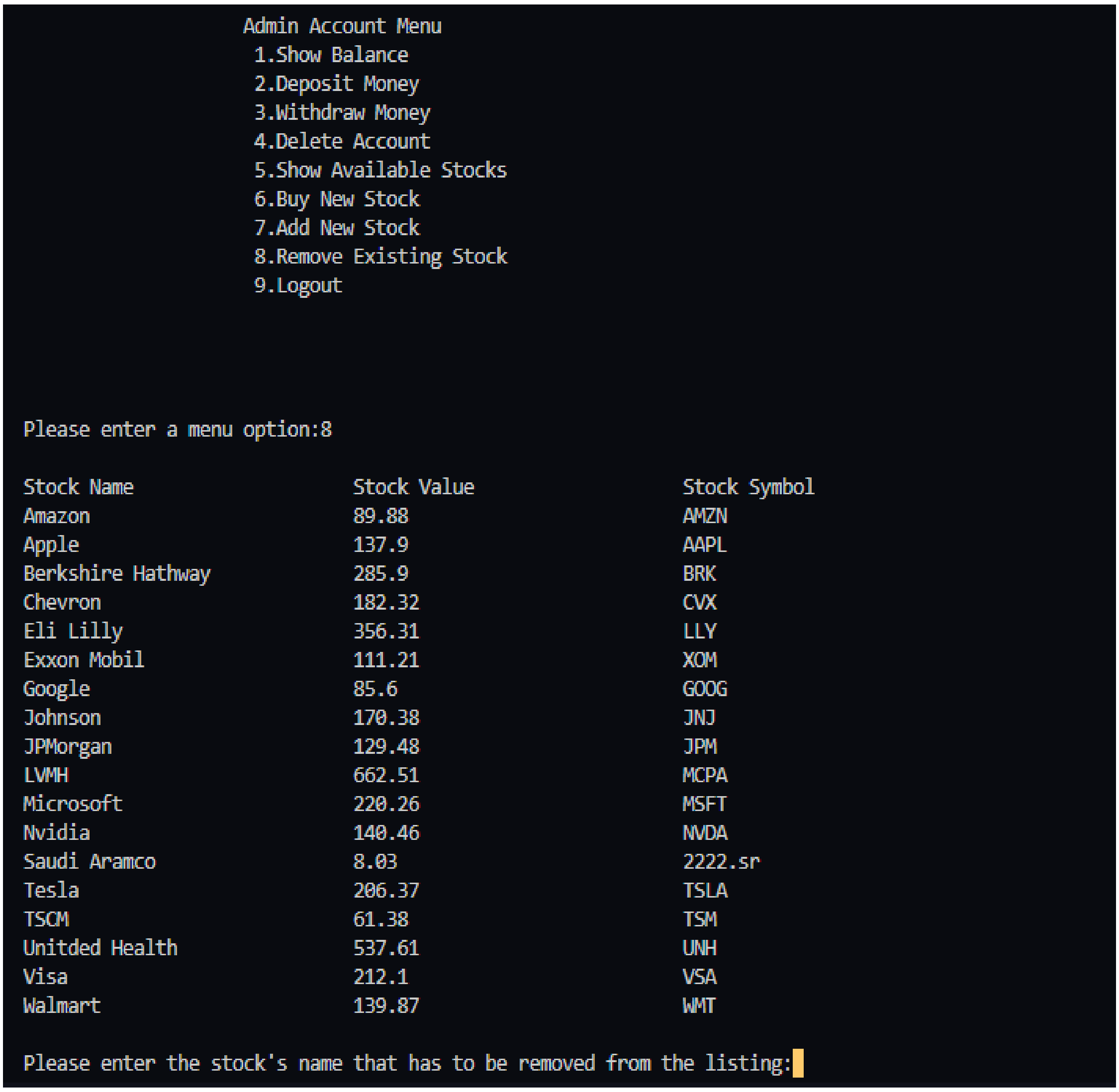
```
Please enter the stock's name you wish to purchase:apple
Please enter quantity of Apple:2
Please enter your PIN number:1234

You've successfully bought apple for a price of $275.1.
Your updated balance is $ 945.25




                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout




Please enter a menu option:
```



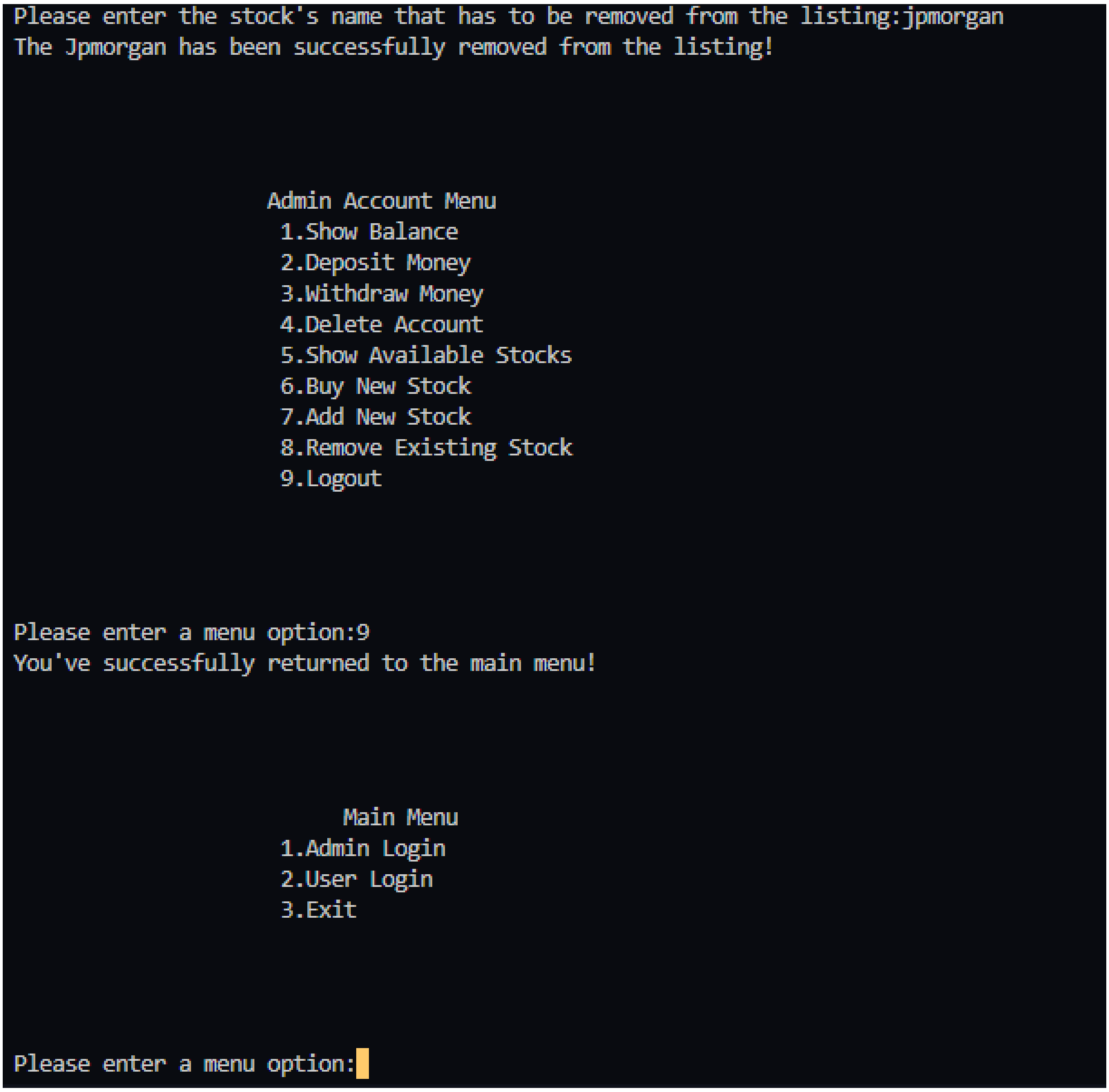
```
Please enter a menu option:7
Please enter stock name:visa
Please enter stock value (in $):212.34
Please enter a symbol for the stock:VSA
Visa stock has been successfully added to the market!




                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout




Please enter a menu option:
```



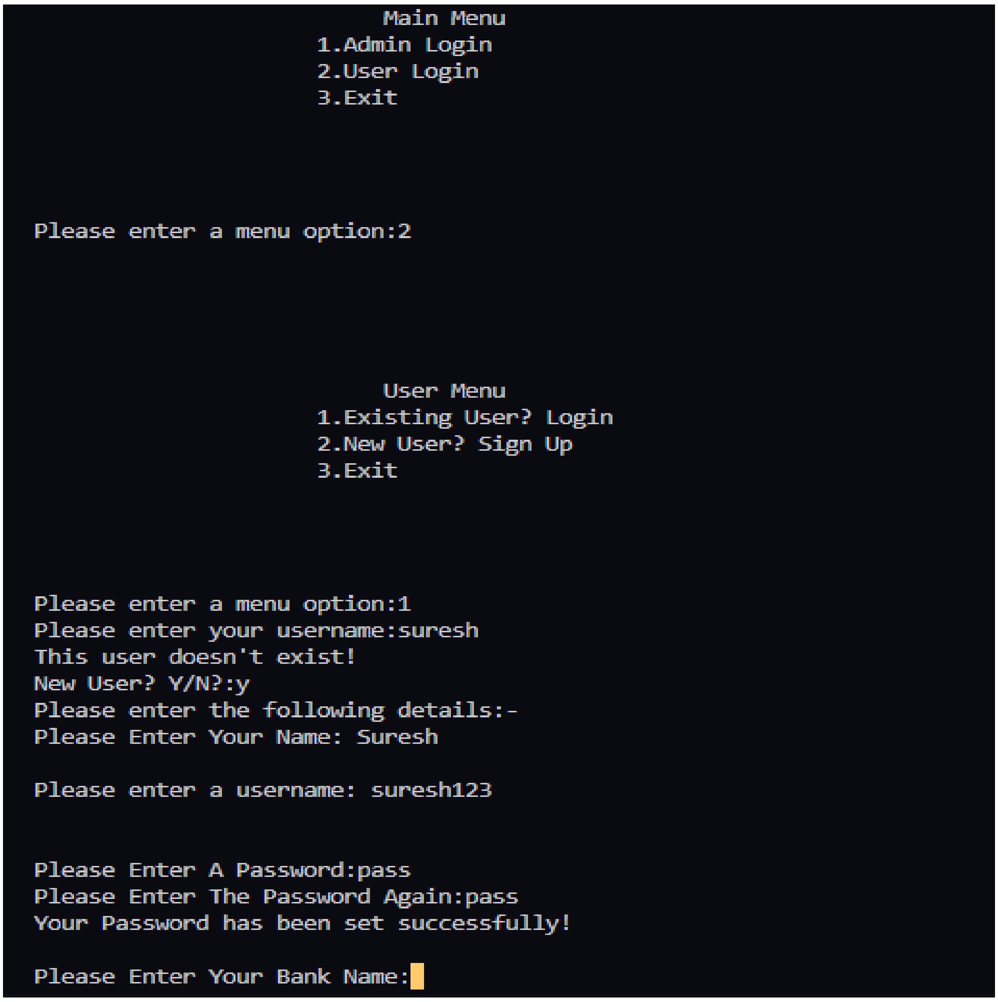
```
Stock Name                    Stock Value                   Stock Symbol
Amazon                        90.37                         AMZN
Apple                         138.39                        AAPL
Berkshire Hathway             286.39                        BRK
Chevron                       182.81                        CVX
Eli Lilly                     356.8                         LLY
Exxon Mobil                   111.7                         XOM
Google                        86.09                         GOOG
Johnson                       170.87                        JNJ
JPMorgan                      129.97                        JPM
LVMH                          663.0                         MCPA
Microsoft                     220.75                        MSFT
Nvidia                        140.95                        NVDA
Saudi Aramco                  8.52                          2222.sr
Tesla                         206.86                        TSLA
TSCM                          61.87                         TSM
Unitded Health                538.1                         UNH
Visa                          212.59                        VSA
Walmart                       140.36                        WMT
```



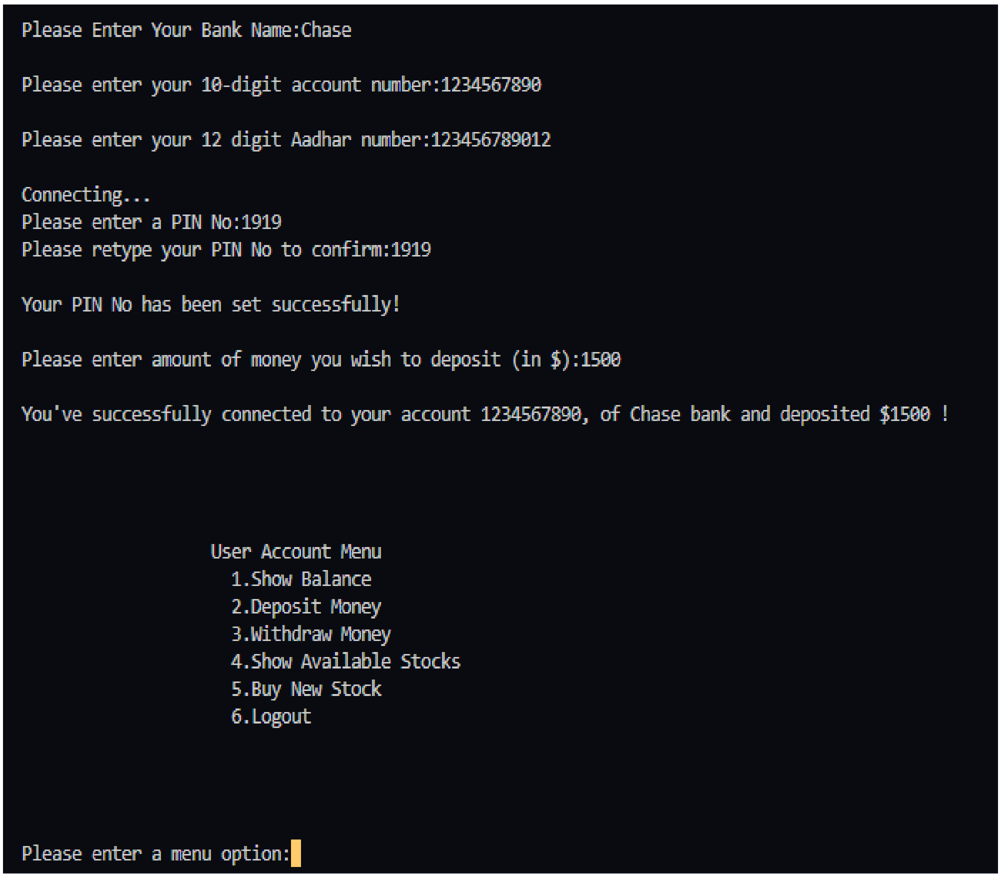
```
                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout




Please enter a menu option:8

Stock Name                    Stock Value                   Stock Symbol
Amazon                        89.88                         AMZN
Apple                         137.9                         AAPL
Berkshire Hathway             285.9                         BRK
Chevron                       182.32                        CVX
Eli Lilly                     356.31                        LLY
Exxon Mobil                   111.21                        XOM
Google                        85.6                          GOOG
Johnson                       170.38                        JNJ
JPMorgan                      129.48                        JPM
LVMH                          662.51                        MCPA
Microsoft                     220.26                        MSFT
Nvidia                        140.46                        NVDA
Saudi Aramco                  8.03                          2222.sr
Tesla                         206.37                        TSLA
TSCM                          61.38                         TSM
Unitded Health                537.61                        UNH
Visa                          212.1                         VSA
Walmart                       139.87                        WMT

Please enter the stock's name that has to be removed from the listing:
```



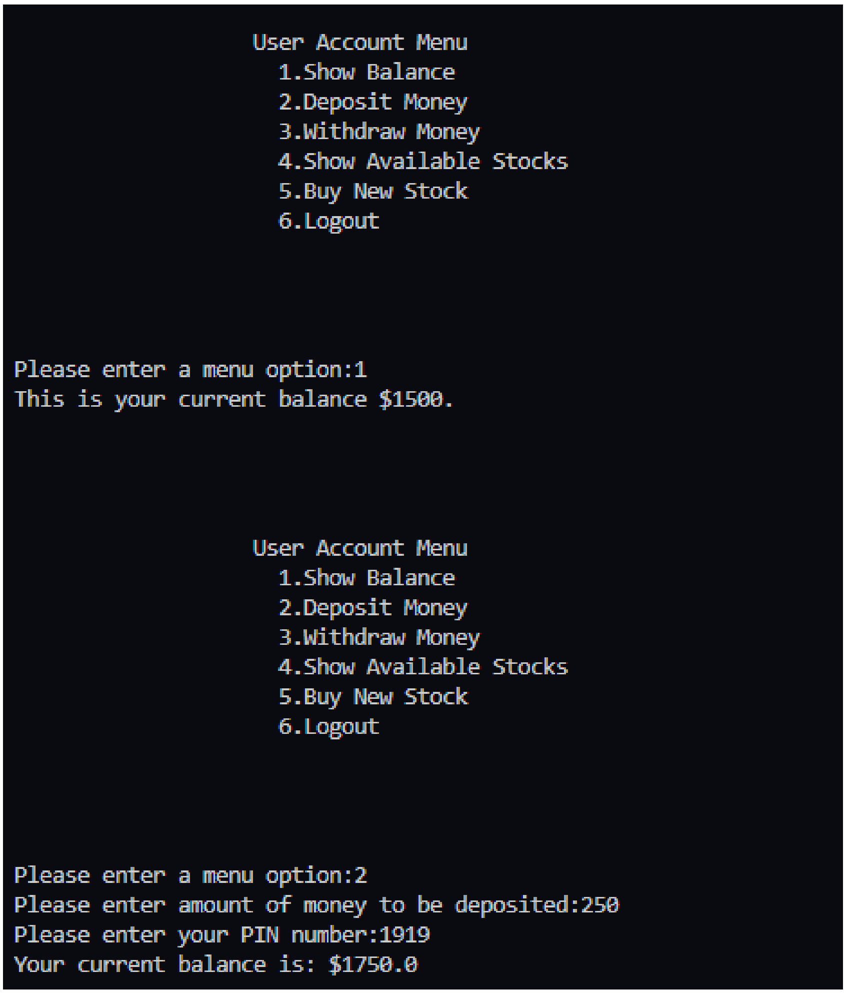
```
Please enter the stock's name that has to be removed from the listing:jpmorgan
The Jpmorgan has been successfully removed from the listing!




                    Admin Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Delete Account
                     5.Show Available Stocks
                     6.Buy New Stock
                     7.Add New Stock
                     8.Remove Existing Stock
                     9.Logout




Please enter a menu option:9
You've successfully returned to the main menu!




                          Main Menu
                     1.Admin Login
                     2.User Login
                     3.Exit




Please enter a menu option:
```



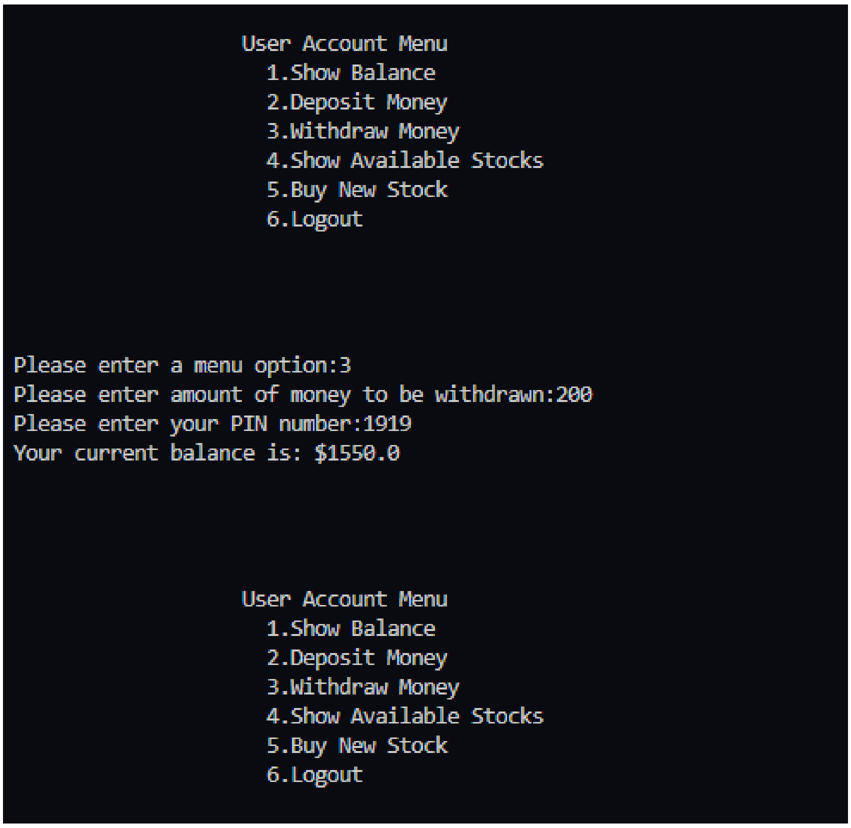
```
                              Main Menu
                         1.Admin Login
                         2.User Login
                         3.Exit




 Please enter a menu option:2





                              User Menu
                         1.Existing User? Login
                         2.New User? Sign Up
                         3.Exit




 Please enter a menu option:1
 Please enter your username:suresh
 This user doesn't exist!
 New User? Y/N?:y
 Please enter the following details:-
 Please Enter Your Name: Suresh

 Please enter a username: suresh123


 Please Enter A Password:pass
 Please Enter The Password Again:pass
 Your Password has been set successfully!

 Please Enter Your Bank Name:
```



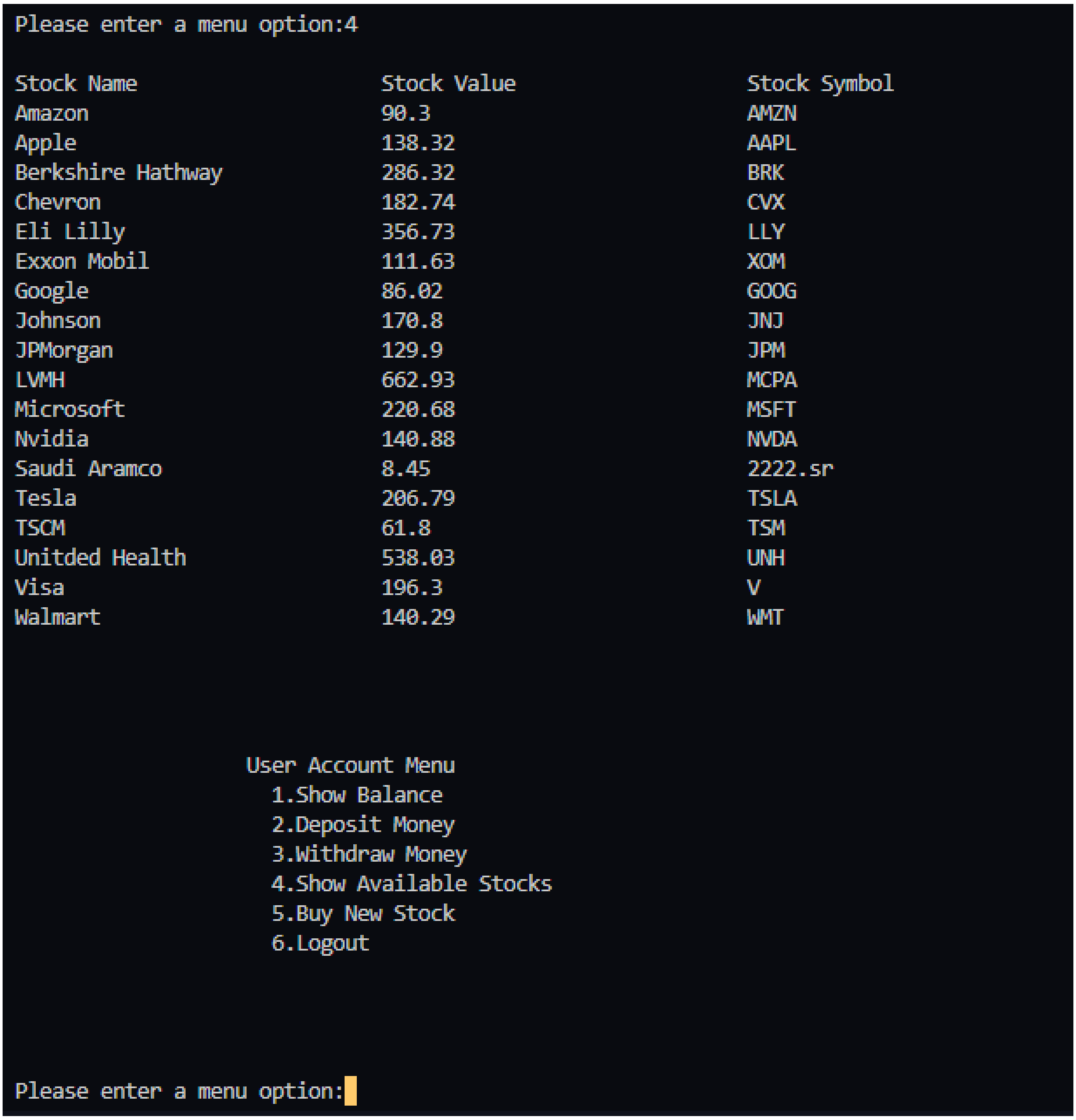
```
Please Enter Your Bank Name:Chase

Please enter your 10-digit account number:1234567890

Please enter your 12 digit Aadhar number:123456789012

Connecting...
Please enter a PIN No:1919
Please retype your PIN No to confirm:1919

Your PIN No has been set successfully!

Please enter amount of money you wish to deposit (in $):1500

You've successfully connected to your account 1234567890, of Chase bank and deposited $1500 !




                   User Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Show Available Stocks
                     5.Buy New Stock
                     6.Logout




Please enter a menu option:
```



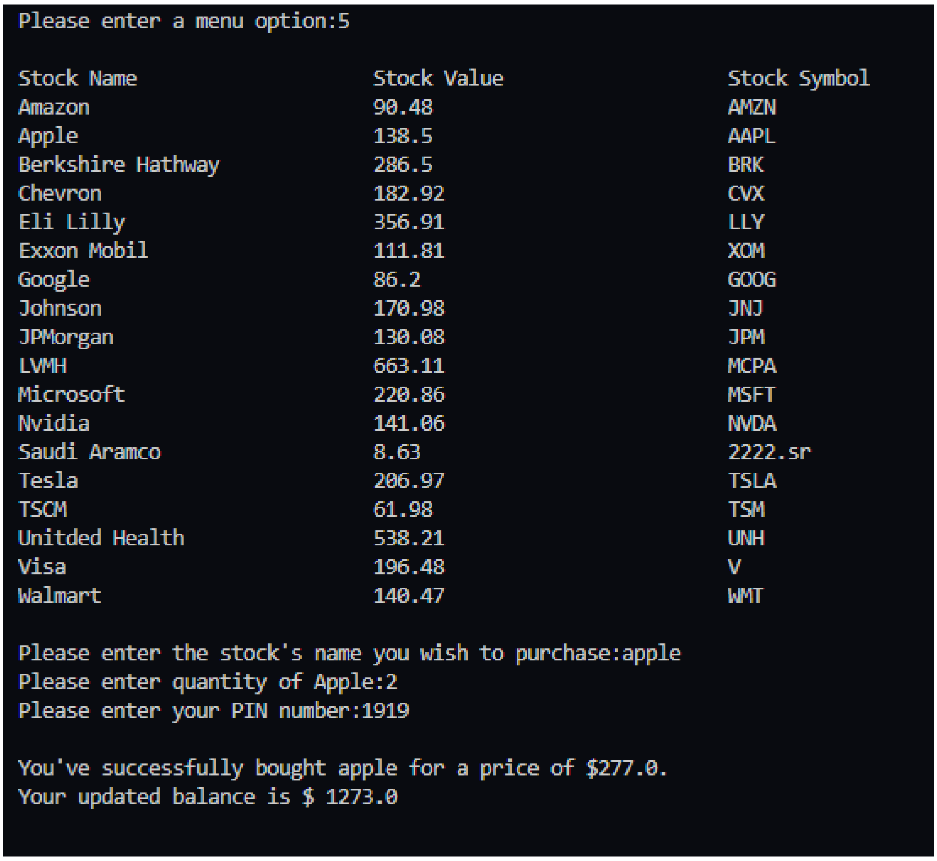
```
                   User Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Show Available Stocks
                     5.Buy New Stock
                     6.Logout




Please enter a menu option:1
This is your current balance $1500.




                   User Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Show Available Stocks
                     5.Buy New Stock
                     6.Logout




Please enter a menu option:2
Please enter amount of money to be deposited:250
Please enter your PIN number:1919
Your current balance is: $1750.0
```



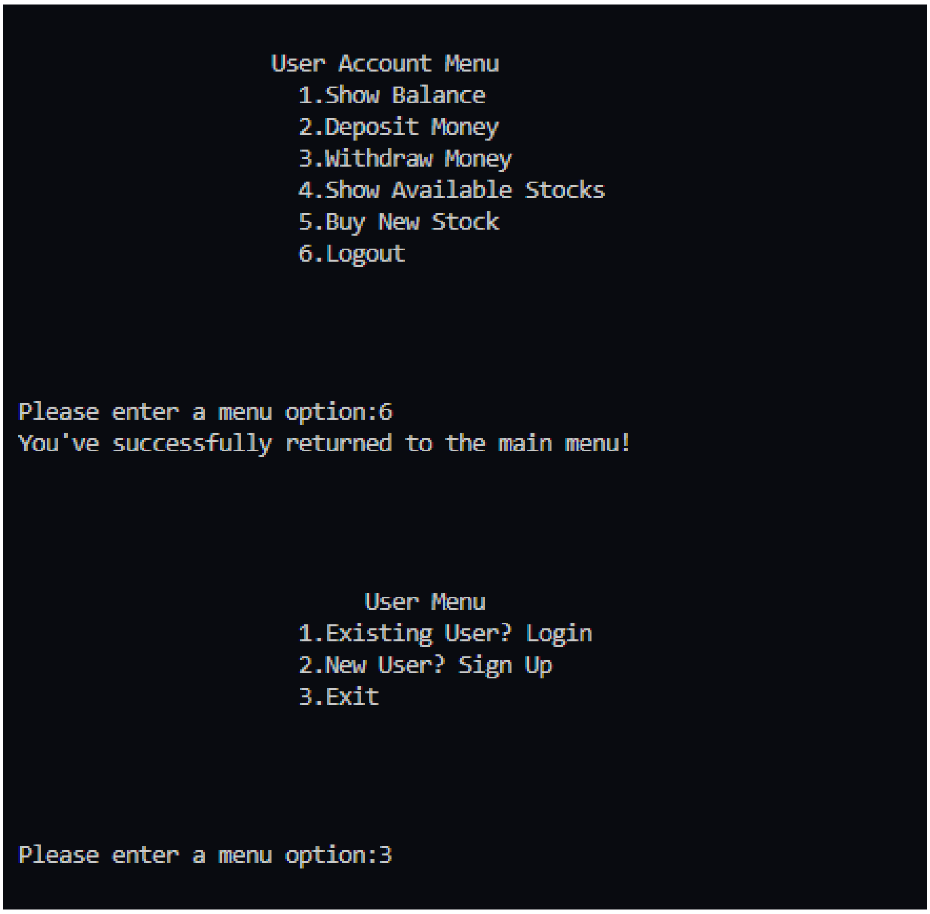
```
                   User Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Show Available Stocks
                     5.Buy New Stock
                     6.Logout




Please enter a menu option:3
Please enter amount of money to be withdrawn:200
Please enter your PIN number:1919
Your current balance is: $1550.0




                   User Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Show Available Stocks
                     5.Buy New Stock
                     6.Logout
```



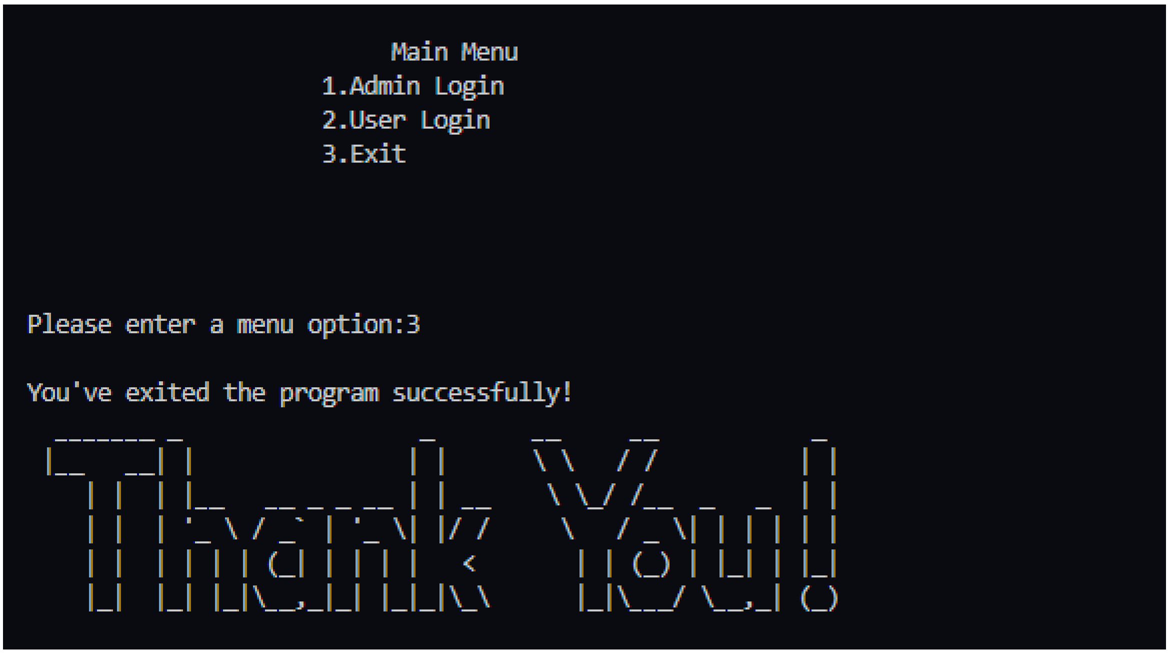
```
Please enter a menu option:4

Stock Name                     Stock Value                    Stock Symbol
Amazon                         90.3                           AMZN
Apple                          138.32                         AAPL
Berkshire Hathway              286.32                         BRK
Chevron                        182.74                         CVX
Eli Lilly                      356.73                         LLY
Exxon Mobil                    111.63                         XOM
Google                         86.02                          GOOG
Johnson                        170.8                          JNJ
JPMorgan                       129.9                          JPM
LVMH                           662.93                         MCPA
Microsoft                      220.68                         MSFT
Nvidia                         140.88                         NVDA
Saudi Aramco                   8.45                           2222.sr
Tesla                          206.79                         TSLA
TSCM                           61.8                           TSM
Unitded Health                 538.03                         UNH
Visa                           196.3                          V
Walmart                        140.29                         WMT



                   User Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Show Available Stocks
                     5.Buy New Stock
                     6.Logout



Please enter a menu option:
```



```
Please enter a menu option:5

Stock Name                    Stock Value                   Stock Symbol
Amazon                        90.48                         AMZN
Apple                         138.5                         AAPL
Berkshire Hathway             286.5                         BRK
Chevron                       182.92                        CVX
Eli Lilly                     356.91                        LLY
Exxon Mobil                   111.81                        XOM
Google                        86.2                          GOOG
Johnson                       170.98                        JNJ
JPMorgan                      130.08                        JPM
LVMH                          663.11                        MCPA
Microsoft                     220.86                        MSFT
Nvidia                        141.06                        NVDA
Saudi Aramco                  8.63                          2222.sr
Tesla                         206.97                        TSLA
TSCM                          61.98                         TSM
Unitded Health                538.21                        UNH
Visa                          196.48                        V
Walmart                       140.47                        WMT

Please enter the stock's name you wish to purchase:apple
Please enter quantity of Apple:2
Please enter your PIN number:1919

You've successfully bought apple for a price of $277.0.
Your updated balance is $ 1273.0
```



```
                   User Account Menu
                     1.Show Balance
                     2.Deposit Money
                     3.Withdraw Money
                     4.Show Available Stocks
                     5.Buy New Stock
                     6.Logout



Please enter a menu option:6
You've successfully returned to the main menu!



                          User Menu
                     1.Existing User? Login
                     2.New User? Sign Up
                     3.Exit



Please enter a menu option:3
```



```
                          Main Menu
                     1.Admin Login
                     2.User Login
                     3.Exit




Please enter a menu option:3

You've exited the program successfully!
  _______ _                 _      __     __         _
 |__   __| |               | |     \ \   / /        | |
    | |  | |__   __ _ _ __ | | __   \ \_/ /__  _   _| |
    | |  | '_ \ / _` | '_ \| |/ /    \   / _ \| | | | |
    | |  | | | | (_| | | | |   <      | | (_) | |_| |_|
    |_|  |_| |_|\__,_|_| |_|_|\_\     |_|\___/ \__,_| (_)
```

Bibliography

- ✔ **References Books**
  - NCERT Python Book-Sumitha Arora
  - The Complete references

- ✔ **Content links**
  - Geeks for Geeks: https: //www.geeksforgeeks.org
  - W3Schools: https://www.w3schools.com
  - Tutorials point: https://www.tutorialspoint.com
  - Stackoverflow: https://stackoverflow.com/

- ✔ **Video Resources**
  - Python and SQL Videos
  - Stocks related videos
  - Exception handling videos