

**KENSRI SCHOOL & COLLEGE**

**PROJECT REPORT ON**

**<Project Name>**

**DONE BY,**

*Nischit Kumar*

*Tushar Menonn*

**UNDER THE GUIDANCE OF,**

*RAVISHANKAR G.*

**Computer Science (083)**

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In partial fulfillment of the requirement

for the award of the class of

CBSE FOR AISSCE 2022-23



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**KENSRI SCHOOL &**

**COLLEGE**

***CERTIFICATE***

This is to certify that <**Nischit Kumar -Reg No>** a student of class XII Science of KENSRI School & College, has successfully completed the Investigatory Project entitled:

**Stock Arena**

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:**

|  |  |  |
| --- | --- | --- |
| **Signature of**  **Principal** | **Signature of Subject Teacher** | **Signature of**  **External Examiner** |

**KENSRI SCHOOL &**

**COLLEGE**

***CERTIFICATE***

This is to certify that <**Tushar Menon -Reg No >** a student of class XII Science of KENSRI School & College, has successfully completed the Investigatory Project entitled:

**Stock Arena**

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| --- | --- | --- |
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**KENSRI SCHOOL &**

**COLLEGE**

***CERTIFICATE***

This is to certify that <**STUDENT NAME3- Reg No >** a student of class XII Science of KENSRI School & College, has successfully completed the Investigatory Project entitled:

**<PROJECT NAME>**

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:**

|  |  |  |
| --- | --- | --- |
| **Signature of**  **Principal** | **Signature of Subject Teacher** | **Signature of**  **External Examiner** |

**KENSRI SCHOOL &**

**COLLEGE**

***CERTIFICATE***

This is to certify that <**Nischit Kumar -Reg No > &** <**Tushar Menon -Reg No >** a student of class XII Science of KENSRI School & College, has successfully completed the Investigatory Project entitled:

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**Date:**

|  |  |  |
| --- | --- | --- |
| **Signature of**  **Principal** | **Signature of Subject Teacher** | **Signature of**  **External Examiner** |

***DECLARATION***

We hereby declare that the project entitled “**Stock Arena** ”, 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.

|  |  |
| --- | --- |
| **Sign**  **Student Name**  **Registration Number** | **Sign**  **Student Name**  **Registration Number** |
| **Sign**  **Student Name**  **Registration Number** | |

***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***

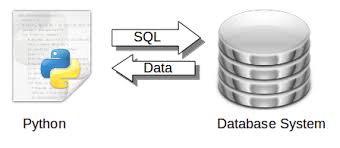
**PYTHON**

* **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 Python’s** Flying 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.

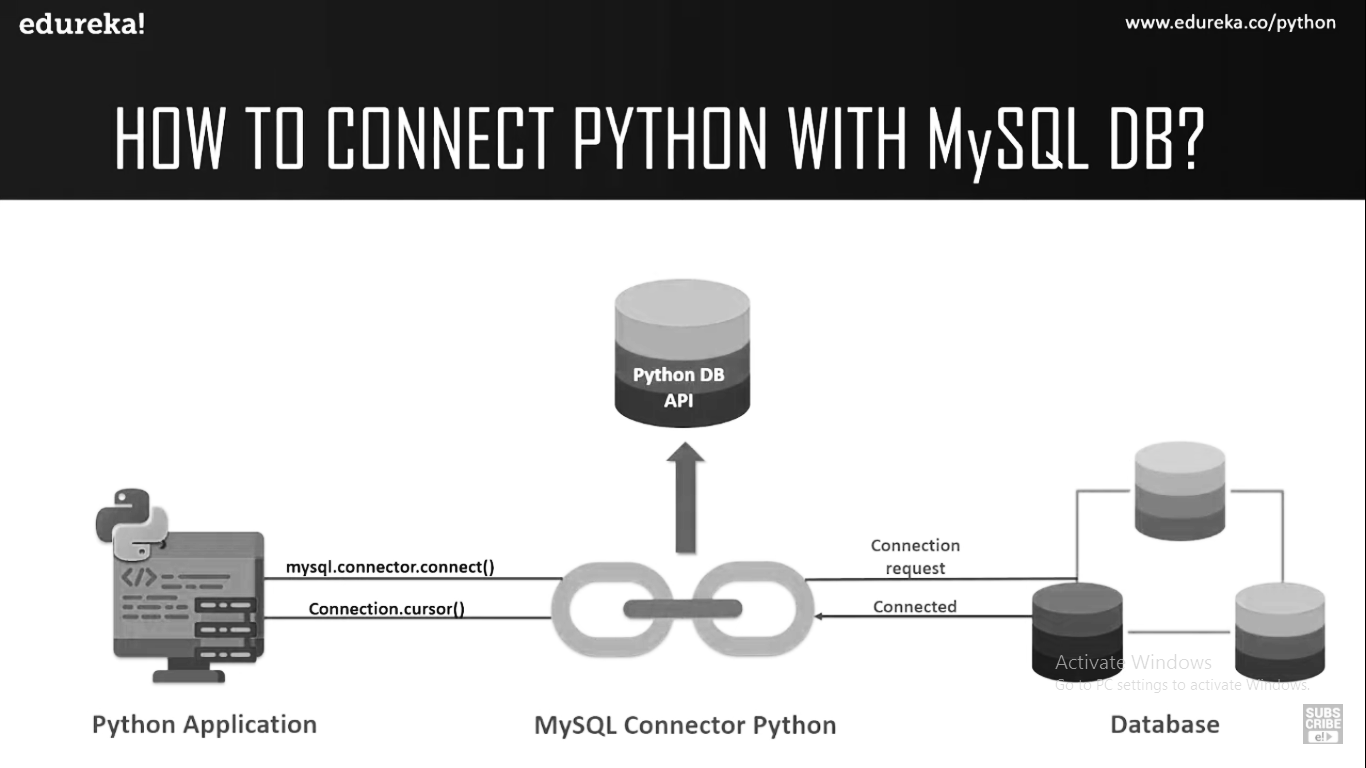
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**SQL**

* **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

**TKINTER**

Tkinter is the standard GUI library for Python. Python when combined with Tkinter

provides a fast and easy way to create GUI applications. Tkinter provides a powerful

object-oriented interface to the Tk GUI toolkit.

* **Creating a GUI application using Tkinter is an easy task.**
* Import the Tkinter module.
* Create the GUI application main window.
* Add one or more widgets to the GUI application.
* Enter the main event loop to take action against each event triggered by the user.
* **Tkinter Widgets**
* Tkinter provides various controls, such as buttons, labels and text boxes used in a GUI application. These controls are commonly called widgets.
* There are currently 15 types of widgets in Tkinter. We present these widgets as well as a brief description in the following table −
* **Operator & Description**
* **Button** The Button widget is used to display the buttons in your application.
* **Canvas** The Canvas widget is used to draw shapes, such as lines, ovals, polygons and rectangles, in your application.
* **Check button** The Checkbutton widget is used to display a number of options as checkboxes. The user can select multiple options at a time.
* **Entry** The Entry widget is used to display a single-line text field for accepting values from a user.
* **Frame** The Frame widget is used as a container widget to organize other widgets.
* **Label** The Label widget is used to provide a single-line caption for other widgets. It can also contain images.
* **Listbox** The Listbox widget is used to provide a list of options to a user.
* **Menu button** The Menubutton widget is used to display menus in your application.
* **Menu** The Menu widget is used to provide various commands to a user. These commands are contained inside Menubutton.
* **Message** The Message widget is used to display multiline text fields for accepting values from a user.
* **Radiobutton** The Radiobutton widget is used to display a number of options as radio buttons. The user can select only one option at a time.
* **Scale** The Scale widget is used to provide a slider widget.  
  **Scrollbar** The Scrollbar widget is used to add scrolling capability to various widgets, such as list boxes.
* **Text** The Text widget is used to display text in multiple lines.
* **Toplevel** The Toplevel widget is used to provide a separate window container.
* **Spinbox** The Spinbox widget is a variant of the standard Tkinter Entry widget, which can be used to select from a fixed number of values.
* **Paned Window** A PanedWindow is a container widget that may contain any number of panes, arranged horizontally or vertically.
* **Label Frame** A labelframe is a simple container widget. Its primary purpose is to act as a spacer or container for complex window layouts.
* **tkMessageBox** This module is used to display message boxes in your applications.

***SYNOPSIS***

# Title of the Project:Stock Arena

# Problem Definition: Simplified stock exchange platform

# Contribution / Team members: Nischit Kumar , Tushar Menon

# Team Detail:

The Project "Stock Arena” 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,

# Software Requirements:

# Win 10 , python ,mysql,mysql – python connector 8.0

# Limitations:

# User interface is in python interpreter , No GUI used

# References / Bibliography:

# Geek For Geeks ,stack overflow

***Project Flow Chart***

***Code***

**# Importing Modules And Performing Basic Operations**

**import math**

**import mysql.connector as ms**

**mycon = ms.connect(host="localhost", user="root",**

**passwd="root")**

**mycur = mycon.cursor()**

**mycur.execute("CREATE DATABASE IF NOT EXISTS STOCKS;")**

**mycur.execute("USE STOCKS;")**

**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);")**

**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','m','1234','m','m','m','1234','1200');")**

**mycon.commit()**

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

**inserting\_vals()**

**# Functions used**

**def introductory\_display():**

**print("\n\n\n")**

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

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

**print(" Welcome To Stock Arena ")**

**print(" Your Turn To Become Richer ")**

**print()**

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

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

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

**# Printing of menu**

**introductory\_display()**

**def display\_main():**

**print("\n\n\n")**

**print(" Main Menu ")**

**print(" 1.Existing User? Login ")**

**print(" 2.New User? Sign Up ")**

**print(" 3.Exit ")**

**print("\n\n\n")**

**def display\_submenu():**

**print(" 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 ")**

**# Main Code Starts From Here**

**# Selection Of Option from Menu**

**display\_main()**

**selection = input("Please enter a menu option:")**

**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:**

**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**

**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"These 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: ${net\_balance}")**

**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: ${net\_balance}")**

**mycon.commit()**

**elif selec == '4':**

**replyc = input("Are you sure? 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()**

**mycur.execute(**

**"DELETE FROM USERS WHERE USERNAME = '{}'".format(user))**

**print(**

**"Your account has been deleted successfully. Thank you for being with Stock Arena!")**

**mycon.commit()**

**break**

**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 ${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 ${float(quantity) \* float(stock\_value[0][0])}.")**

**print(f"Your updated balance is $ {str(net\_balance)}")**

**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**

**mycon.commit()**

**new\_var = 1**

**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 your real 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 Aadhar number:")**

**while aadhar.isnumeric() == False:**

**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':**

**# 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**

**# 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!")**

**mycur.execute(**

**"SELECT PINNO FROM USERS WHERE USERNAME = '{}'".format(usrname\_existing))**

**pin\_recs = mycur.fetchall()**

**submenu(usrname\_existing, pin\_recs[0])**

**elif selection == '2':**

**sign\_up()**

**mycon.commit()**

**elif selection == '3':**

**break**

**else:**

**selection = input("Please Enter A Valid Menu Option:")**

**new\_var = 1**

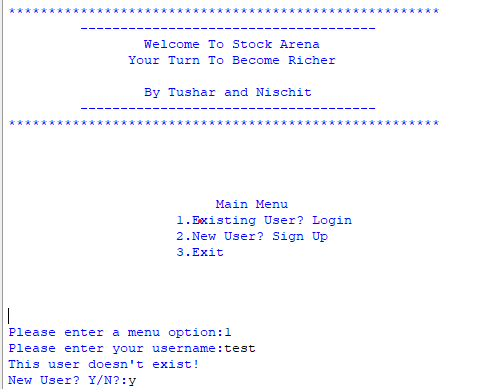
**print()**

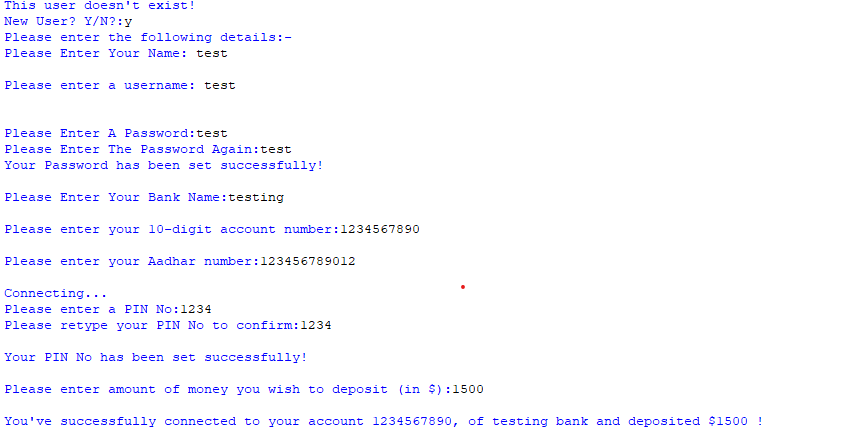
**mycon.commit()**

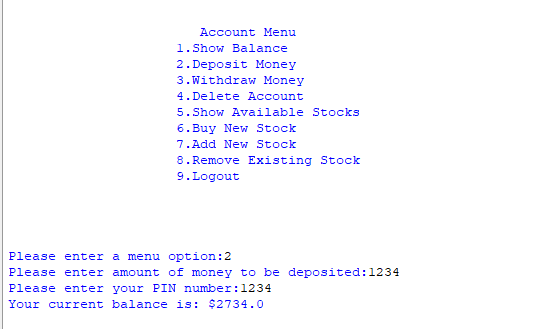
**print()**

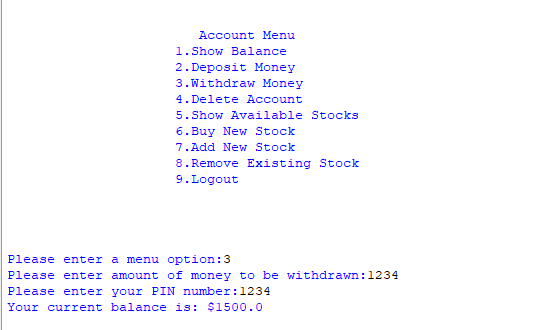
**print("You've exited the program successfully! Thank you for using Stock Arena!")**

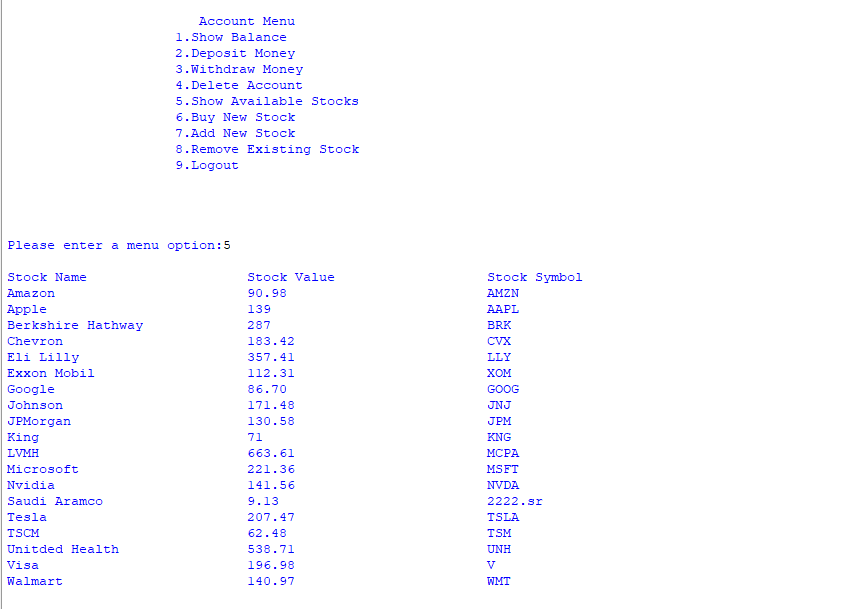
***Output***

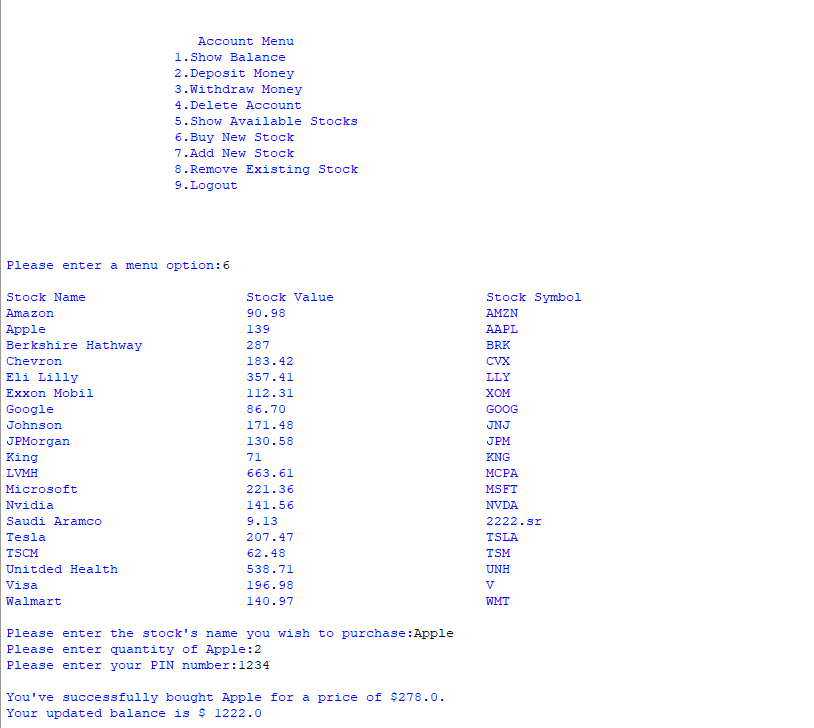
******

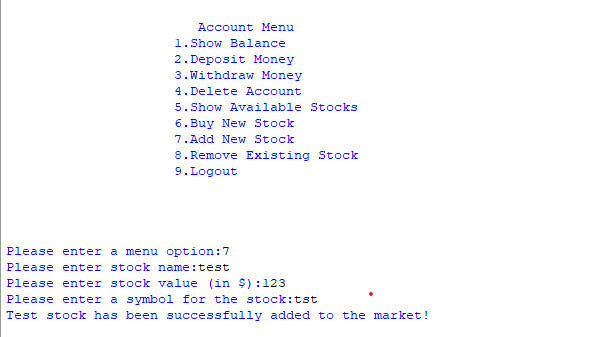
******

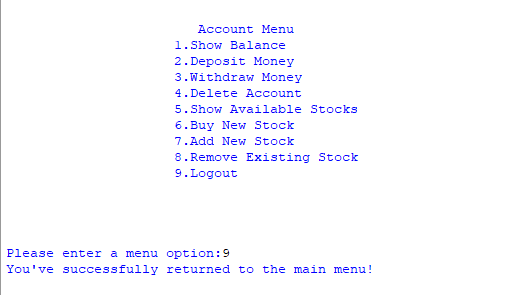
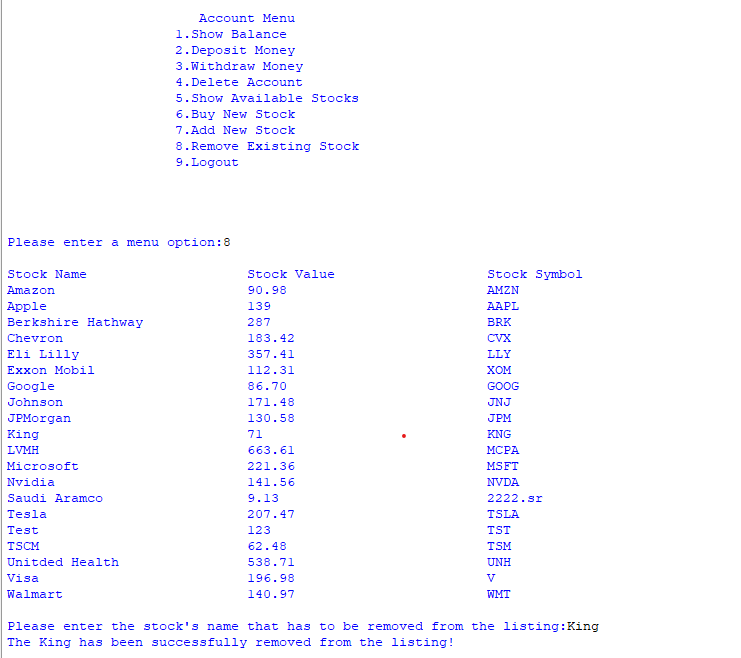
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***Bibliography***

# StackOverflow, Geek for geeks, codeit