

Stock Virtual Machine WORKBOOK

Team Members:

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Client:

Benjamin Hughes

Project Description:

The Stock Virtual Machine is a web application that is designed to simulate buying and selling stocks in the stock market in a very realistic manner. Using the Stock Virtual Machine, user will get the full experience of buying and selling stocks without having to invest any actual currency.

To use the application users visit the web-page and must register. Once registered the user will have a set sum of virtual currency added to a virtual bank account. This money can then be used to virtually invest in stocks.

Collaboration Tool:

Link to the project **git** repository:

<https://github.com/sujaypatel/CS422Project>

Requirements:

Use Case #1:

Use Case Name	User Registration
Participating actors	New Users
Flow of events	<ol style="list-style-type: none">1. User opens the browser and visits the URL localhost.2. The system displays the Home screen with a Signup, Login, and Help button.3. User clicks the "Sign up" button.4. The system takes user to the registration page and asks to enter a username, password and an email address.5. Once user completes the form, and presses "Create Account" button, the user gets redirected to Portfolio page.6. The system displays user's portfolio, which contains a username and virtual bank account with \$1000 balance.
Entry condition	User access the website through a web browser
Exit condition	User successfully creates the account.
Quality/Nonfunctional Requirements	The application should be loaded in 5 seconds after the user accesses it on a web browser

Use Case #2:

Use Case Name	Login
Flow of events	<ol style="list-style-type: none">1. User opens the browser and visits the URL localhost.2. The system displays the Home screen with a Signup, Login, and Help button.3. User clicks the "Login" button.4. The system takes user to Login page and ask user to enter username and password.5. User enters the required information and clicks the "Submit" button.6. The system verifies the username and password from database.7. If the user enters incorrect information, then system asks user to reenter the information.8. If the user enters correct information then system takes the user to portfolio page.
Entry condition	User access the website through a web browser
Exit condition	User successfully is able to login.
Quality/Nonfunctional Requirements	Authentication should be done within 2 seconds.

Use Case #3:

Use Case Name	Buy Stock
Participating actors	Registered Users
Flow of events	<ol style="list-style-type: none">1. User opens the browser and visits the URL localhost.2. Once the user Login successfully, then the system takes the user to portfolio page.3. On portfolio page, the system provides user with the username, virtual balance, and three buttons i.e. Buy Stock, Sell Stock, Search Stock.4. User click on "Buy Stock" button.5. The system takes user to Buy Stock page where user will be able to select the company name and enter the quantity of stock that user want to buy for a select company.6. The user click on "Purchase" button.7. The system makes sure that user has enough amount of virtual money to purchase the stock.

	<ol style="list-style-type: none"> 8. If the user has enough virtual money then the system allows user to purchase the stock and takes the user back to portfolio page. 9. On the portfolio page, it would display the list of stocks that the user owns and would update the virtual balance.
Entry condition	User access the website through a web browser
Exit condition	User successfully able to purchase the stock.
Quality/Nonfunctional Requirements	Once the user purchase the stock, their virtual balance and their portfolio should be updated within 5 seconds of the transaction.

Use Case #4:

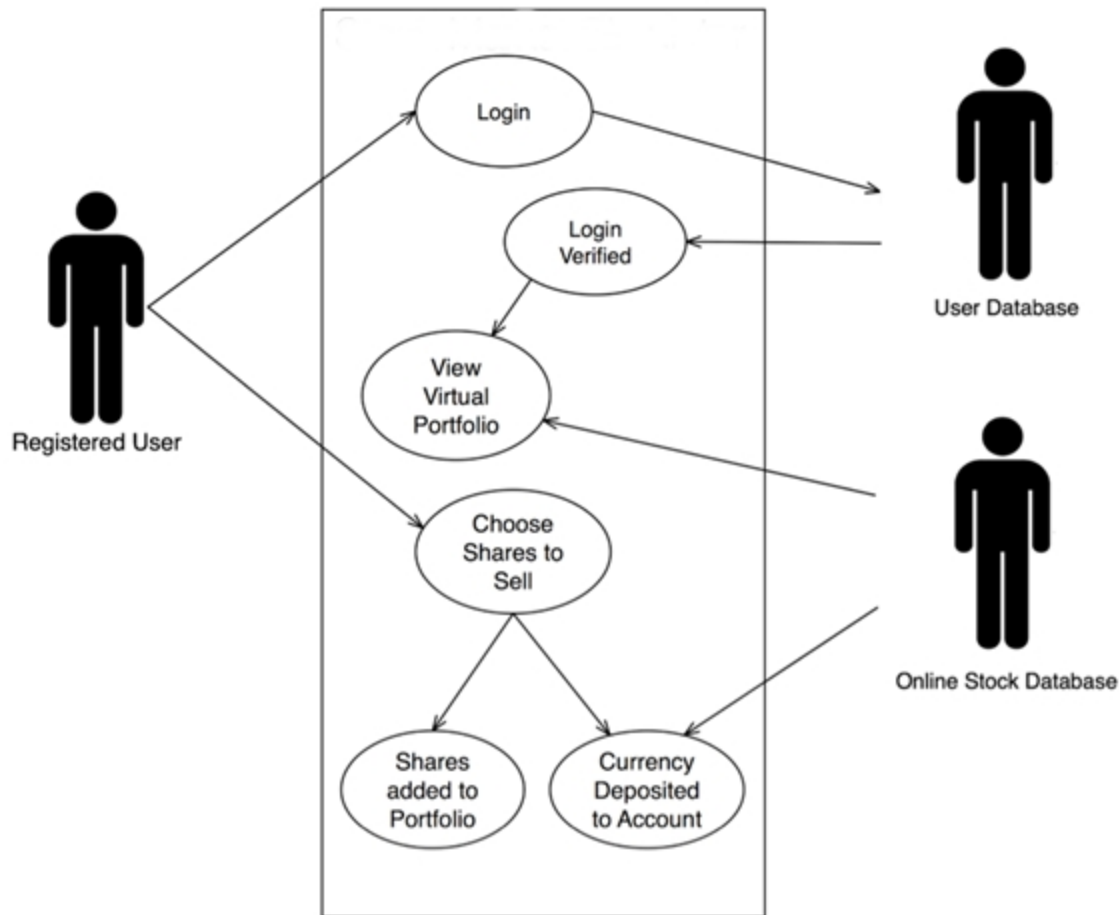
Use case name	Sell Stock
Participating actors	Registered Users
Flow of events	<ol style="list-style-type: none"> 1. User opens the browser and visits the URL localhost. 2. Once the user Login successfully, then the system takes the user to portfolio page. 3. On portfolio page, the system provides user with the username, virtual balance, and three buttons i.e. Buy Stock, Sell Stock, Search Stock. 4. User click on "Sell Stock" button. 5. The system takes user to Sell Stock page where user will be able to select the company name and enter the quantity of stock that user want to sell for a select company. 6. The user clicks on "Sell" button. 7. The system makes sure that user is not able to sell more stock than he owns. 8. Once the user sells the stocks then the system takes the user back to portfolio page. 9. On the portfolio page, it would display only the list of stocks that the user currently owns and would update the virtual balance.
Entry condition	User access the website through a web browser
Exit condition	User successfully able to sell the stock.
Quality/Nonfunctional Requirements	Once the user sells the stock, their virtual balance and their portfolio should be updated within 5 seconds of the transaction.

Use Case #5:

Use case name	Search Stock
Participating actors	Registered Users
Flow of events	<ol style="list-style-type: none">1. User opens the browser and visits the URL localhost.2. Once the user Login successfully, then the system takes the user to portfolio page.3. On portfolio page, the system display user with the username, virtual balance, and three buttons i.e. Buy Stock, Sell Stock, Search Stock.4. User clicks on "Search Stock" button.5. The system takes user to Search page where user will be able to select the company name and click "Search" button.6. The system displays the stock information and current price of the selected company.7. If the user want to go back to portfolio page. then the user can click on "Back Portfolio" button.
Entry condition	User access the website through a web browser.
Exit condition	User successfully able to sell the stock.

Use Case #6:

Use case name	Exit Application
Participating actors	Registered Users
Flow of events	<ol style="list-style-type: none">1. User opens the browser and visits the URL localhost.2. Once the user Login successfully, then the system takes the user to portfolio page.3. The system provides a "Logout" Button on the right side of the screen.4. User clicks on the "Logout" button.5. The system saves the user data and goes to login page.
Entry condition	User access the website through a web browser.
Exit condition	User successfully able to logout from the application.
Quality/Nonfunctional Requirements	The game should terminate within 2 seconds.



Specifications:

Goals:

Low Target:

Our team goal is to accomplish several things before March 16. For example, Ted is new to the stock market and wants to get a real world experience before venturing into the actual stock market. Using the Stock Virtual Machine, Ted shall be able to create an account; the system must allow Ted to login. Ted should be able to access his portfolio page.

Use Cases: User Registration, Login, & Exit Application

Desirable target:

Our next step then would be to implement the functionality of buy, sell, and search stocks feature. Ted will get the full experience of buying and selling stocks without having to invest any actual currency. On the user's portfolio webpage, the system shall update the table of the stocks and virtual balance once Ted makes any transaction. The system must prevent Ted from buying more stocks than the amount of virtual balance he has.

Use Cases: Buy Stock, Sell Stock, & Search Stock

High target:

At the end, our team goal would be to design the user-interface to make our web application look simple and attractive to the users.

Extras:

Extra feature that could be implemented in the future would be RSS Feed, and Forget Password Recovery.

Non-Goals:

- User authentication should be done within 2 seconds.
- The user should be able to view their latest transactions no later than 5 seconds.
- The system should not crash more than once in a week.
- The system shall ensure that the data is protected from unauthorized access.
- In case of an error, the time needed to get the system back to running should not exceed an hour.
- The system should support multiple users simultaneously.

Group Prototypes

Prototype #1

User Registration

User MUST register to use the application. Once they register, the system takes the user to the Login page.

HOME SIGNUP LOGIN HELP	HOME SIGNUP LOGIN HELP	HOME SIGNUP LOGIN HELP
<p style="text-align: center;">Welcome to Stock Virtual Machine.</p> <div style="border: 1px solid black; padding: 10px;"><p>WELCOME</p><p>Stock Virtual Machine Web application which provides a learning opportunity for new users to become experts in stock market without spending actual money.</p><p>To use the application users have to SignUP.</p><p>....</p></div>	<p style="text-align: center;">Create an Account</p> <div style="border: 1px solid black; padding: 10px;"><p style="text-align: center;">REGISTER NOW</p><p>The user will get the full experience of buying and selling stock on the web without having to invest actual money.</p><p>USERNAME: <input type="text"/></p><p>PASSWORD: <input type="password"/></p><p>CONFIRM PASSWORD: <input type="password"/></p><p>EMAIL ADDRESS: <input type="text"/></p><p style="text-align: center;">REGISTER</p></div>	<p style="text-align: center;">Login to Stock Virtual Machine</p> <div style="border: 1px solid black; padding: 10px;"><p>LOGIN</p><p>To use the program users must register with a Username, Email, and Password.</p><p>USERNAME: <input type="text" value="SUTALPAHEL"/></p><p>PASSWORD: <input type="password" value="****"/></p><p style="text-align: center;">LOGIN</p></div>

User Login

Once user enter valid username and password then system takes the user to the portfolio page.

HOME SIGNUP LOGIN HELP

Welcome to Stock Virtual Machine

WELCOME

Stock Virtual Machine Web application which provides a learning opportunity for new users to become experts in stock market without spending actual money. To use the application users have to Sign Up.

HOME SIGNUP LOGIN HELP

Login to Stock Virtual Machine

LOGIN

To use the Program users must register with a Username, Email, and Password.

USERNAME: SUTALMTEL

PASSWORD: KKKK

LOGIN

Portfolio

Sujal Patel

Virtual Balance: \$1000

User Preferences

Logout

List of Owned Stock

Symbol	High	Low	Close	Quantity
AAP	120.25	119.5	119.75	5
AAT	150.34	145.7	148.8	2
YHOO	45.70	44.5	44.8	5

BUY STOCK

SELL STOCK

SEARCH

Help Menu

If user needs help using the application. If user click on "Help" then the system takes the user to the Help page.

HOME SIGNUP LOGIN HELP

Welcome to Stock Virtual Machine

WELCOME

Stock Virtual Machine Web application which provides a learning opportunity for new users to become experts in stock market without spending actual money. To use the application users have to Sign Up.

HOME SIGNUP LOGIN HELP

Help Menu

INFORMATION

FAQ

CONTACT US

User Registration

USERNAME
 EMAIL
 CONFIRM EMAIL
 PASSWORD

STOCK VIRTUAL MACHINE

USERNAME
 PASSWORD

User Login

STOCK VIRTUAL MACHINE

USERNAME
 PASSWORD

LINISHA, WELCOME!

BALANCE: \$235.00

MY STOCKS	
YAHOO	\$150↑
APPLE	\$75↓
GOOG	\$30↑
DAX	\$26↑

Help Menu

Hand-drawn prototype of a login and registration form. It features a yellow background with horizontal lines. At the top right, there are three buttons: 'LOGIN', 'SEARCH', and 'HELP'. Below these, there are input fields for 'USERNAME' (containing 'LINISHA'), 'EMAIL' (containing 'lpatil2@vic.edu'), 'CONFIRM EMAIL' (containing 'lpatil2@vic.edu'), and 'PASSWORD' (containing 'xxxxxx'). A 'SIGNUP!' button is located at the bottom right.

Hand-drawn prototype of a help menu. It features a yellow background with horizontal lines. There are three buttons: 'FAQ', 'ABOUT US', and 'CONTACT US', arranged vertically.

User Registration

Hand-drawn prototype of a user registration system, titled 'User Registration'. It consists of four screens labeled #1, #2, #3, and #4.

- #1:** A 'Welcome Page' with a 'Stock virtual Machine' header. It has a navigation bar with buttons: 'SignUp', 'Login', 'Help', and 'Contact Us'.
- #2:** A 'Sign UP Page' with a navigation bar: 'SignUp', 'Login', 'Help', and 'Contact Us'. It contains input fields for 'First Name:', 'Last Name:', 'a Male, 0 Female', 'Email Address:', 'Username:', and 'Password:'. A 'Create Account' button is at the bottom.
- #3:** A 'Sign UP Page' with a navigation bar: 'SignUp', 'Login', 'Help', and 'Contact Us'. It contains input fields for 'First Name: SURAJ', 'Last Name: PATEL', 'a Male, 0 Female', 'Email Address: suraj2@amazon.com', 'Username: SURAJ', and 'Password: xxxxxx'. A 'Create Account' button is at the bottom.
- #4:** A 'Login Page' with a navigation bar: 'SignUp', 'Login', 'Help', and 'Contact Us'. It contains input fields for 'Username:' and 'Password:'. A 'Login' button is at the bottom.

User Login

The image shows three hand-drawn wireframe prototypes for a web application, labeled #1, #2, and #3.

- Prototype #1:** Titled "Login Page". It features a navigation bar with "Sign Up", "Login", "Help", and "Contact Us". Below the navigation bar, there are input fields for "Username:" and "Password:", followed by a "Login" button.
- Prototype #2:** Also titled "Login Page". It shows the same navigation bar. The "Username:" field contains the text "SURYA" and the "Password:" field contains "xxxxxxx". The "Login" button is highlighted with a thick border.
- Prototype #3:** Titled "Portfolio Page". It features a "Logout" button in the top right corner. Below the navigation bar, it says "Hello, SURYA". There is a table with stock names: "YAHOO", "GOOGLE", "FACEBOOK", "MICROSOFT", and "TESLA". To the right of the table are three buttons: "Buy Stock", "Sell Stock", and "Refresh Stock".

Client Feedback:

On Friday 02/27, all the project team members visited, the client, Benjamin Hughes for discussing the low target prototypes of the Stock Virtual Machine. Benjamin liked the overall layout of the web application and made several suggestion on improving the prototypes based on his requirements. He liked the idea of providing five navigation tabs at the top of the page i.e. Home, Sign up, Login, Help, and Contact Us. He suggested to make the user interface as user-friendly as possible. He also asked us to use less saturated colors as the background of the application. He mentioned that he would like to have a password retrieval feature that would help the users to retrieve their passwords in case they forget them.

Benjamin liked the design of the registration page; however, he highly recommended that the number of fields on the registration page should be kept minimum as users might not like to give out more information than necessary. He suggested to add more detail to the Help page so that the users can get a better understanding on what the web application is about. Overall, the client is impressed by the presented low-target prototypes and he wants to implement most of the features from it.