

Project 2

CSC 311: Data Structures, Spring 2017

Department of Computer Science

California State University, Dominguez Hills

(Due: November 2, 2017, 11:59 PM PDT)

A. Objectives

1. Implement and use Stack class and methods (20 points)
2. Use a separate class to represent Objects for Stack (10 points)
3. Write additional methods to search through a Stack (10 points)
4. Use methods to do separate and repetitive work. The main method should not have more than 20 lines of code (10 points)
5. Implement the project correctly. (40 points)

10 points will be awarded for use of meaningful identifiers, consistent indentation, explanatory comments in your code and properly formatted output, including screen shots of execution.

B. Description

Stock prices for companies fluctuate multiple times during each day of trading. In this project we are going to write software for a financial company that keeps track of the stock prices. Following are the features provided by the company:

1. Register a client (business): Create unique ID and password, Name of Business, Current Stock price
2. Login a registered client: Upon successful login display the Name of the business, and the current stock price; login works only after registering
3. Provide option to log all the changes to the stock price, by adding the latest stock price and the time of the change
4. For the current day, display all the prices in reverse chronological order i.e., starting with the current price to the beginning price of the day
5. For the current day display the highest stock price that was attained, and the time
6. For the current day display the lowest stock price, and the time
7. Quit the session signaling the end of the day; the current stock price should be saved for the Business, so that when logging in the next day, that becomes the current stock price. Businesses open at 10:00 AM, so that should be the time of change for the first price of the day

The program should be menu-driven; so until the user selects option 7 i.e., Quit, the program should keep executing. The program begins by registering a client if using the system for the first time; while registering only unique client ids are allowed and password must be at least 8 characters long. If the client cannot choose a unique id after 2 attempts, generate a random 8-character alphanumeric user id based on the name of the business. For clients previously registered, option 2 can be chosen directly.

Each stock price should be treated as an Object, and it should contain data about the previous price, the current price, and also the time of change to the current price.

C. Constraints

1. Implement all code in Java programming language
2. The project is due by November 2, 2017, 11:59 PM PDT, using Blackboard.
3. This is not a group project. Copying code from others or using an unfair means is strictly not allowed and plagiarism charges will be imposed on students who do not follow this.
4. If students find code somewhere else that they want to include in the program, they need to cite the reference as well.
5. Include print screens of the execution of the program as a separate pdf. All the options must be included to show the complete execution of the program.
6. Upload all files using a single zip file; dont use other compressed format such as rar.