ENGR 212 Programming Practice
Mini Project 4
November 28, 2016

In this mini project you are going to develop a GUI to allow its users to filter and display information related to the stocks exchanged at Istanbul Stock Exchange (Borsa Istanbul). The following web page gives daily information on all the stocks processed at Borsa Istanbul.

http://www.bigpara.com/borsa/hisse-fiyatlari/

But the above page contains lots of irrelevant content including advertisements, news, etc. In order to access the data provided on the page neatly, an easier to use tool is needed which facilitates to filter out the required information from the page according to the user's selections. Your job is to develop such tool with Python and Tkinter.

Your program will have a graphical user interface (GUI) which will look like as shown in Figure 1. You may use any coloring-scheme you like. The below one is for illustration purposes only.

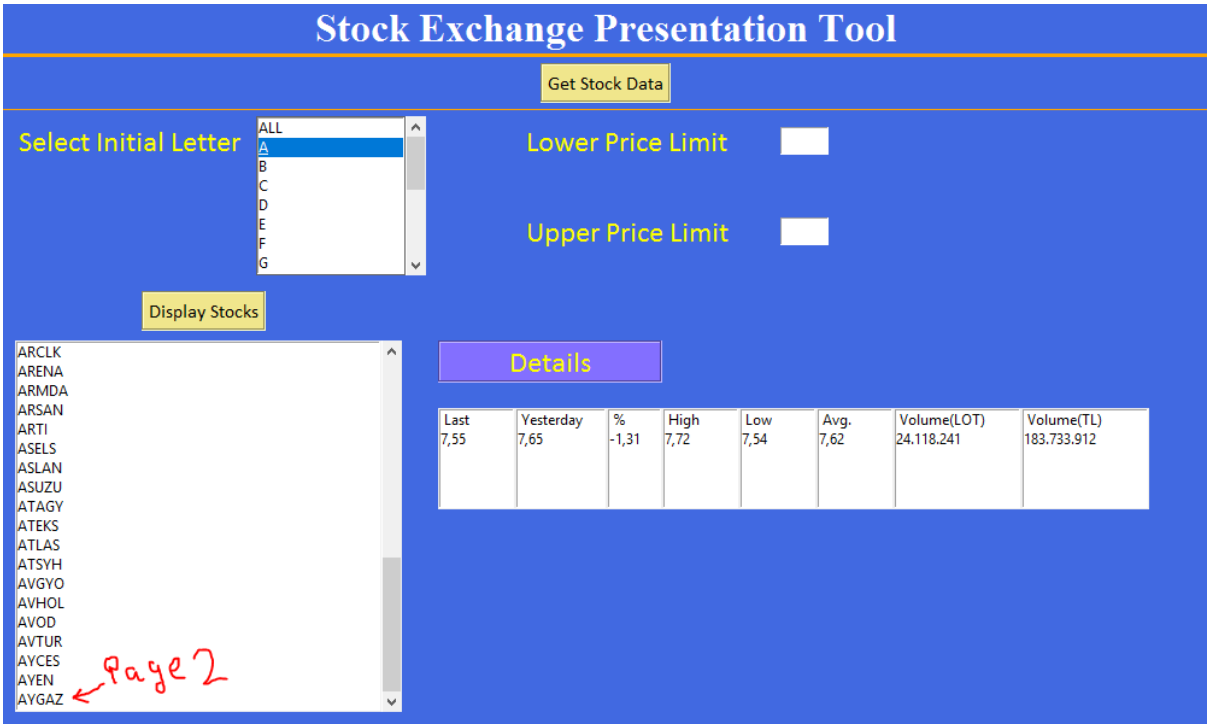

Figure 1

- When the user presses the "Get Stock Data" button, the tool will open and download the contents of the web page given above using urllib2, and then parse and process the contents of the page via BeautifulSoup.
- Note that the above given web site lists the stocks in successive pages. The tool should be able to navigate through all necessary pages, and store all stock data in an appropriate internal Python data structure. The program can access the successive pages either by following the link labelled "sonraki" on the page, or by modifying the above given url with the appropriate page numbers, i.e.;

  http://www.bigpara.com/borsa/hisse-fiyatlari/2/

  http://www.bigpara.com/borsa/hisse-fiyatlari/3/

...

- The user shall have the option to filter out the stocks either by their initial letter, or by setting minimum and maximum price limits, or both. If the user selects "All Letters" (the default), then no filtering should be performed with respect to the initial letters. Similarly, the user should have the option of leaving "Lower Price Limit" and "Upper Price Limit" fields empty. If any of these limits are left empty then the program should consider that limit to be unspecified,.i.e, no lower limit or no upper limit on the prices, or both.
- When the user presses the "Display Stocks" button, then the abbreviated stock names satisfying the selected criteria should be listed in the listbox provided. The listbox should have a vertical scrollbar to accommodate large stock lists. Figure 2 gives an illustration of a number of stocks listed.

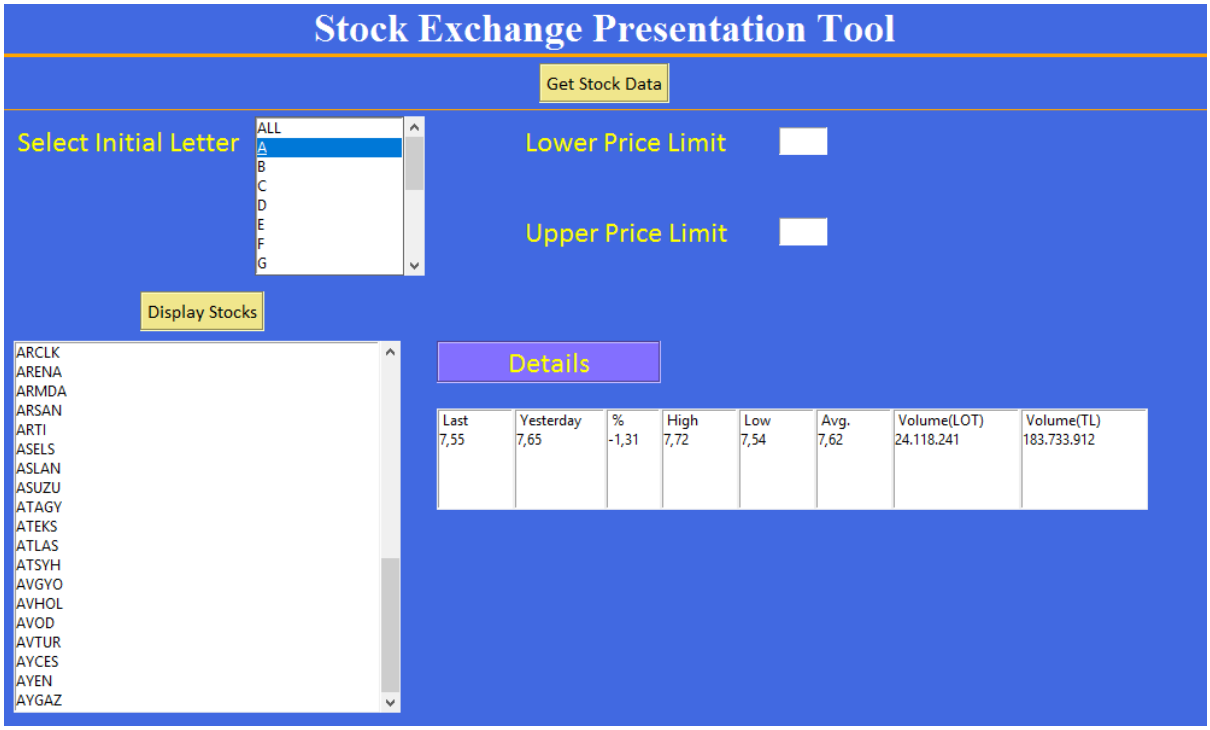

Figure 2

As shown in the figure, your program should show all abbreviated stock names starting with the selected letter, and between the specified price ranges. Then, whenever the user clicks one of the names, description of the stock including its full name should be shown on the right as shown in Figure 3.

Note: In order to get the full stock name you should navigate to the stock page via the link on the abbreviated stock name.

The given site refreshes running stock data regularly, so the user should be able to refresh the downloaded stock data by pressing the "Get Stock Data" any time.

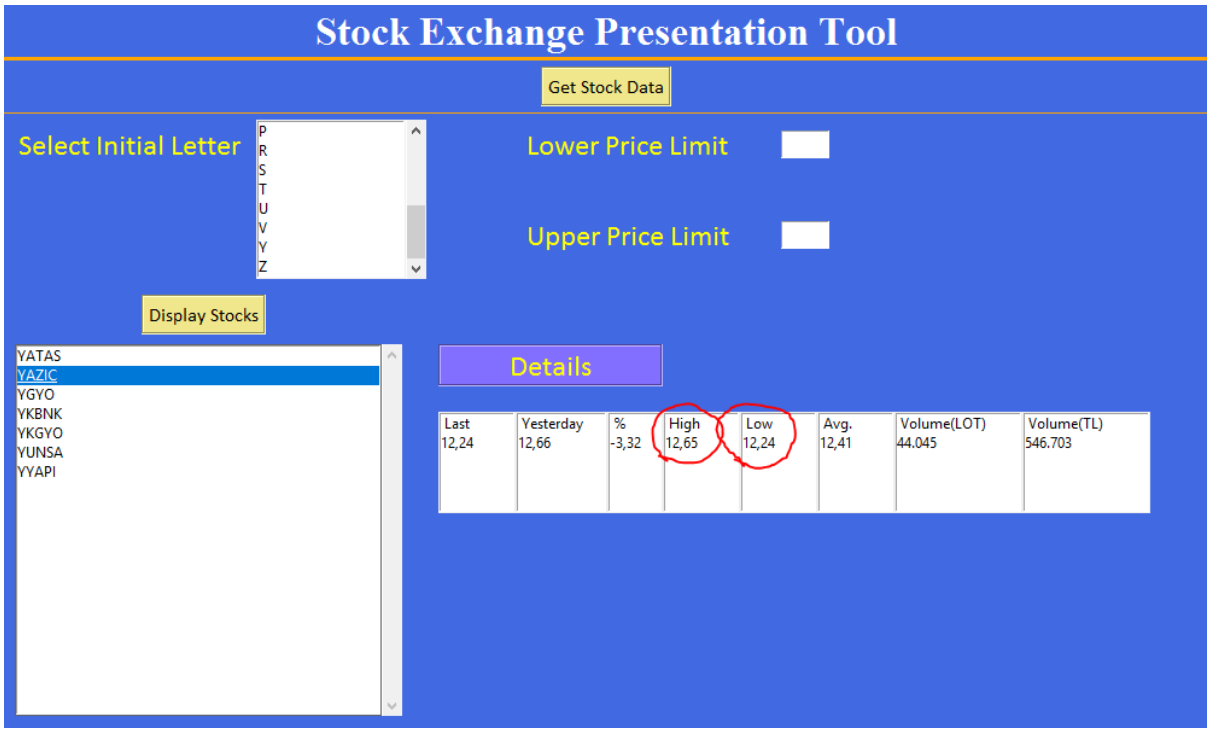

Figure 3

Warnings:

- **Do not** talk to your classmates on project topics when you are implementing your projects. **Do not** show or email your code to others. If you need help, talk to your TAs or myself, not to your classmates. If somebody asks you for help, explain them the lecture slides, but do not explain any project related topic or solution. Any similarity in your source codes will have **serious** consequences for both parties.
- Carefully read the project document, and pay special attention to sentences that involve "**should**", "**should not**", "**do not**", and other underlined/bold font statements.
- If you use code from a resource (web site, book, etc.), make sure that you reference those resource at the top of your source code file in the form of comments. You should give details of which part of your code is from what resource. Failing to do so **may result in** plagiarism investigation.
- Even if you work as a group of two students, each member of the team should know every line of the code well. Hence, it is **important** to understand all the details in your submitted code. You may be interviewed about any part of your code.

How and when do I submit my project? :

- Projects may be done individually or as a small group of two students (doing it individually is recommended). If you are doing it as a group, only **one** of the members should submit the project. File name will tell us group members (Please see the next item for details).
- Submit your own code in a **single** Python file (Do **not** include recommendations.py that you import). Name it with your and your partner's first and last names (see below for naming).
  - If your team members are Deniz Barış and Ahmet Çalışkan, then name your code file as deniz_baris_ahmet_caliskan.py (Do **not** use any Turkish characters in file name).
  - If you are doing the project alone, then name it with your name and last name similar to the above naming scheme.

- Submit it online on LMS (Go to the Assignments Tab) by **17:00 on December 11, 2016**.

  Late Submission Policy:

  - -10%: Submissions between 17:01 – 18:00 on the due date
  - -20%: Submissions between 18:01 – midnight (00:00) on the due date
  - -30%: Submissions which are 24 hour late.
  - -50%: Submissions which are 48 hours late.
  - Submission more than 48 hours late will not be accepted.

Grading Criteria? :

Code Organization			Functionality						
Meaningful variable names (%5)	Classes and objects used (%5)	Sufficient commenting (%5)	Compiles % Runs? (20)	GUI Design (10)	Downloading stock data and storing in a Python Data Structure (20)	Displaying filtered abbreviated stock names (20)	Correct functionality for unspecified upper and lower price limits (15)	Displaying the selected stock's details on the right (20)	Refresh Functionality (10)

- Interview evaluation (your grade from interview will be between 0 and 1, and it will be used as a coefficient to compute your final grade. For instance, if your initial grade was 80 before the interview, and your interview grade is 0.5, then your final grade will be 80*0.5 = 40). Not showing up for the interview appointment will **result in** grade 0.

Have further questions? :

- Contact your TA's during their office hours, and please do NOT hesitate to ask the instructor also (by e-mail or in-person), about anything related to the project.

Good Luck!