

Mobile Computing

Practical Assignment #2 / Multiplatform Design and Development

My stocks' analysis

1. Minimum scenario

Some users had asked for a very easy application for showing and compare NASDAQ companies' stock price evolution.

In this app the user should be presented with a list of at least ten common NASDAQ companies, such as: Apple, IBM, Hewlett Packard, Microsoft, Oracle, Google, Facebook, Twitter, Intel, AMD or others.

From the list the user can select one or two of those companies, and a 7 or 30 quotes extension.

The application should generate a graphic showing the evolution of the close session quote of those companies in the last corresponding number of days where quotes were available (quotes are not available for Saturdays, Sundays and US holidays). If two companies were selected the graphics should be superimposed, with different colors and some scaling to show comfortably the two evolutions.

An evolution graph is something like the one presented in the next figure.



You can add any features to this minimum specification (for instance see the current quotes of the ten companies ...).

2. Design and development

Information about the NASDAQ companies quotes for the last days, from a starting date, can be obtained using an external web service. A free one supplying the required information can be subscribed at:

<https://www.barchart.com/ondemand/free-market-data-api>

which has more information about the available APIs and free and paid subscriptions.

After a free subscription, you are entitled to at least 150 requests per day with a supplied api key. For example, to obtain the last quotes (from a given date) in JSON format for Intel Corporation you can use the REST call:

`https://marketdata.websol.barchart.com/getHistory.json?apikey=<api_key>&symbol=INTC&type=daily&startDate=20181113`

with a response similar to:

```
{"status":{"code":200,"message":"Success."},"results":[{"symbol":"INTC","timestamp":"2018-09-13T00:00:00-04:00","tradingDay":"2018-09-13","open":53.06,"high":53.21,"low":51.6,"close":51.86,"volume":20884800,"openInterest":null},{symbol":"INTC",
```

```
"timestamp":"2018-09-16T00:00:00-04:00","tradingDay":"2018-09-16","open":52.29,  
"high":52.53,"low":51.79,"close":52.4,"volume":18851800,"openInterest":null}}}
```

If you find one, you can also use any other free stock exchange information web service.

Companies are usually represented by a 'tick' name of a few letters (ex: Apple – AAPL). Lists of companies and their tick names are easily available in the web.

You can use this service directly or through your own REST service (with perhaps a more convenient API and response) as an intermediary.

The app should be developed using Xamarin and the interface should be designed in Xamarin.Forms and tested in at least **two** different platforms of your choice. For the graph you should use SkiaSharp in Xamarin.Forms, which is the universal 2D graphics API for Xamarin.Forms, running the same way in all platforms.

3. Report

You should write a report describing the features, architecture, interface, and the testing performed in your app. You should include also an illustrated guide of the use cases supported by your app.