

Android S&P 500 Stock Quote Application Project Analysis

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Document Change History

Version Number	Date	Contributor	Description
PA-D-0.1	12/19/12	Mathew Yamasaki	<ul style="list-style-type: none">• Added "Document Change History"• Remove "Team C" logos from document• Remove "Cellular service provider" from section• Remove "company name" from section c
PA-D-0.2	12/19/12	Mathew Yamasaki	<ul style="list-style-type: none">• Added the following to Section b: "Yahoo! Finance chart database", "Yahoo! Finance RSS Feeds", and "Yahoo! Finance stock data database"• Change sections from alphabets to numbers
PA-D-0.3	12/20/12	Mathew Yamasaki	<ul style="list-style-type: none">• Added details to Section 4
PA-D-0.4	12/20/12	Mathew Yamasaki	<ul style="list-style-type: none">• Added diagrams to section 6• Change subsystem diagram in Section 6
PA-1.0	12/21/12	Mathew Yamasaki	<ul style="list-style-type: none">• Update Section 1 for accuracy regarding the data to be returned• Revise Section 8



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1. Project Requirement

This project requires the development of an Android application that allows a user to type in a stock ticker symbol for a company listed in the Standard & Poor's 500 index and retrieve the current stock price, daily price change in dollars change, daily price change in percent, daily high price, daily low price, 52-week high, 52-week low, P/E ratio, volume, and 50-day moving average. The user must also have the ability to view a chart of the stock as well as current news pertaining to the stock.

2. External System Resources

- User
- Yahoo! Finance chart database
- Yahoo! Finance RSS Feeds
- Yahoo! Finance stock data database

3. Input Data

Users may search for stocks by using the device keyboard to enter a ticker symbol (i.e. "AAPL").

4. Output Data

The following output data is displayed on the main device screen (Activity 1):

- Top five daily winners by percent gain
- Bottom five daily losers by percent loss

After entering a ticker symbol, the following information is displayed (Activity 2):

- | | |
|---------------------------|-------------------------|
| • Company name | • Daily low price |
| • Ticker symbol | • 52-week high |
| • Current price per share | • 52-week low |
| • Daily dollar change | • P/E ratio |
| • Daily Percent change | • Volume |
| • Daily high price | • 50-day moving average |



If the user selects the “Show chart” button from Activity 2, a Yahoo! Finance stock chart is displayed with a 50 and 200-day moving average plotted.

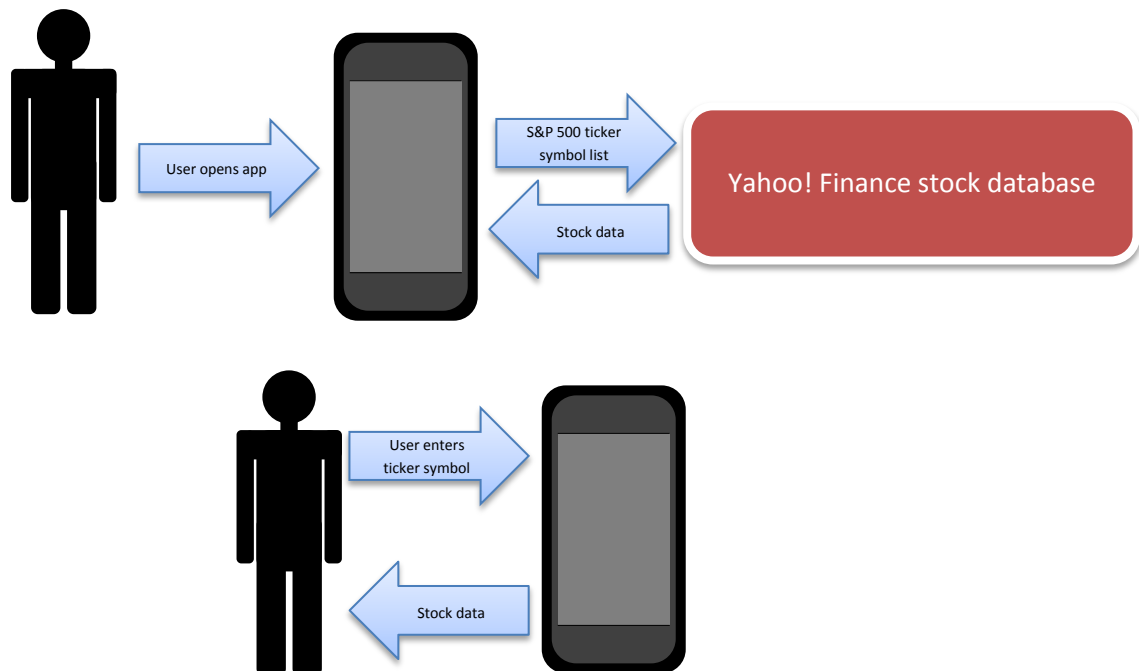
If the user selects the “Show news” button from Activity 2, a list of new articles containing information about the company are displayed. When the user clicks on the article headline, the website containing the article is opened.

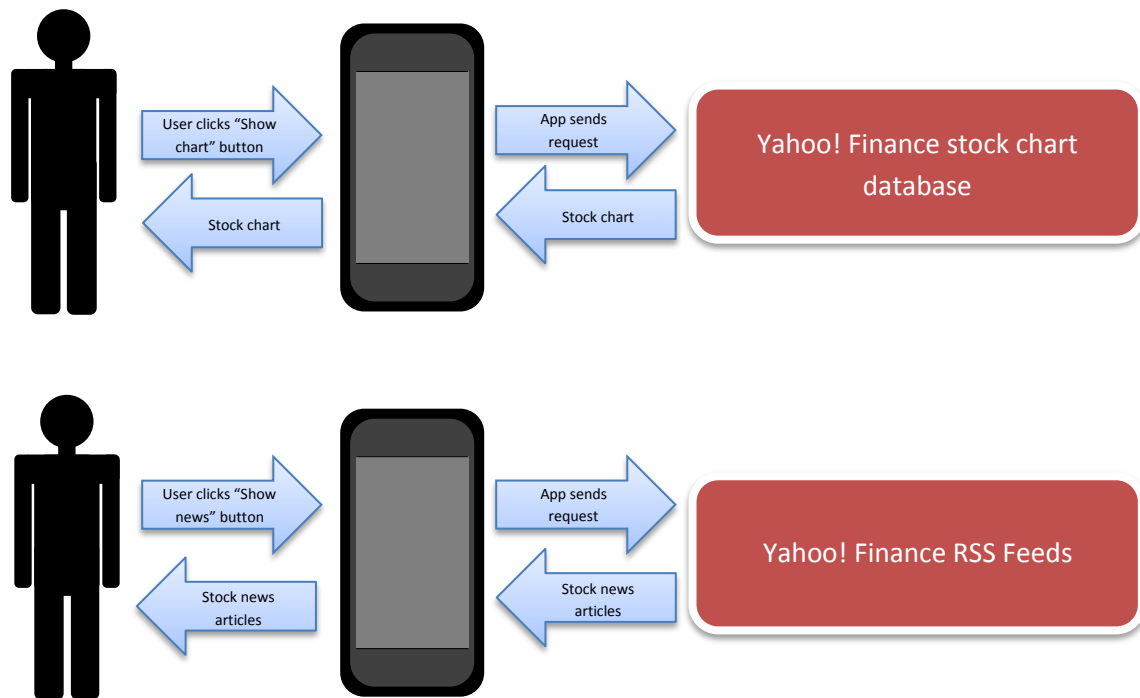
5. Data Processing

Upon starting the application on the device, the application updates its database from the Yahoo! Finance stock data database. The application database fields identified in Section c are populated with the most currently available data. For informational purposes, the top five and bottom five stocks are calculated by percent gain and loss, respectively, and are displayed on the main screen. When the user types a ticker symbol and clicks the “Submit” button, the data identified in Section d is retrieved from the application database and displayed on screen.

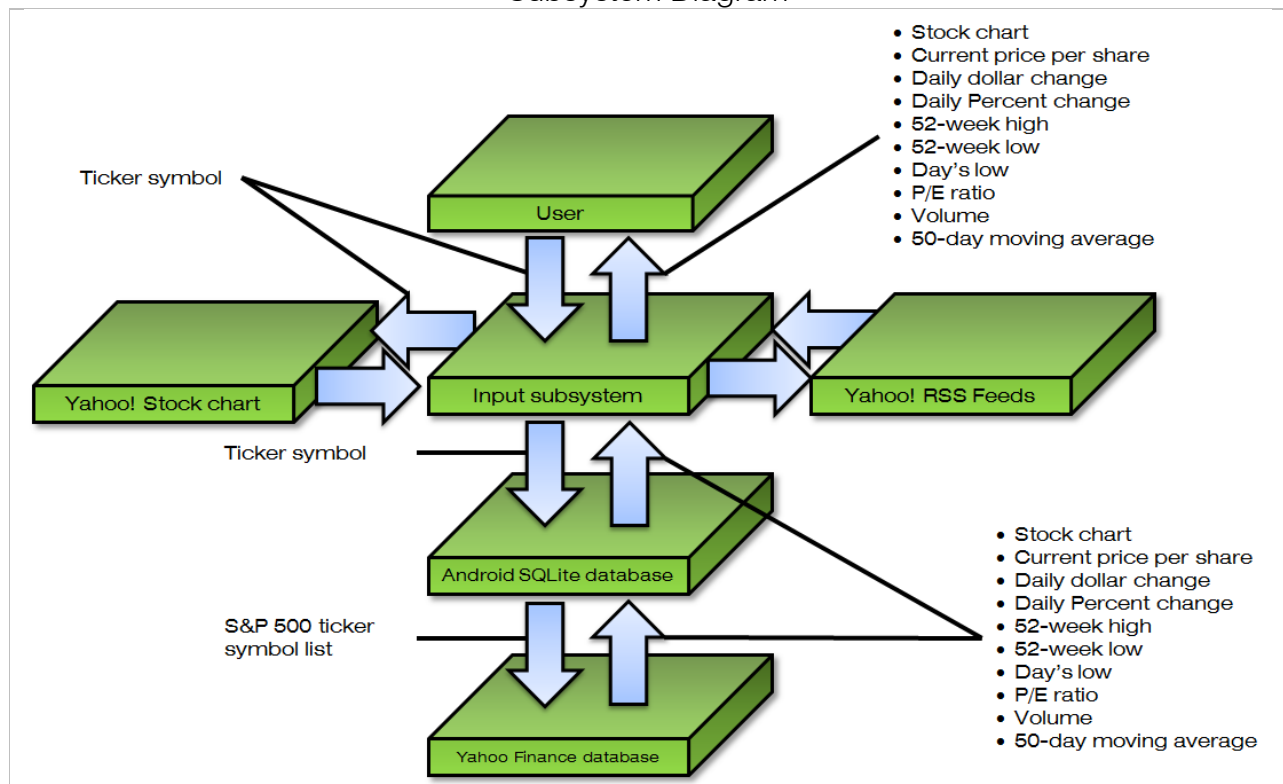
6. Subsystems

The figures below show the interactions of the subsystems:





Subsystem Diagram





7. System Risk Identification and Mitigation

The application is mostly dependent upon the functioning of external resources which are beyond the risk mitigation scope of this project

The system may be slow in responding and/or updating the application database. This could be due to diminished cellular network connectivity caused by service provider technical issues or device location in relation to cellular towers. This could also be attributed to technical issues with Yahoo! Finance. The application's preexisting design feature of utilizing an Android SQLite database provides some risk mitigation by allowing the user to use the application with the latest updates. It may be possible for the user to allow the application to automatically update the database periodically throughout the day.

8. Possible Design Enhancements

- **Reference list of ticker symbols and company names:** Add an Activity that lists the ticker symbols and their associated company names that currently belong to the S&P 500.
- **Database expansion:** Expanding the database to include stocks not in the S&P 500.
- **Data field expansion:** Allow advanced users to select from a wider variety of fundamental and technical information.
- **Diversify Markets:** Cover commodities and foreign exchange (FOREX) markets.
- **Trade Simulator-** Allow the users to create portfolios of stocks which can be traded in a simulated account to which the user can add funds and track portfolio performance.