

CSC 4996 Senior Project

Wayne State University

AnalystWars.com

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SUMMARY

AnalystWars.com is a social network of amateur analysts competing against Wall Street professionals. In today's financial industry analysts, brokerage firms and investment banks don't have small investors best interest in mind when rating stocks. Therefore, the people have the power to decide stock pricing and should exercise that right. We offer the opportunity to create your own stock ratings on a weekly, monthly and quarterly basis. The top analysts for each stock will be rewarded with gift cards, promotional deals and vacations.

PROJECT OVERVIEW

Novice and professional traders need a place to interpret the consensus of future stock prices that includes precise measurement and volume. Developing the hypothesis around amateur and professional analysts is difficult because we don't understand their exact needs. However, we do know that social sentiment is evolving the investment analysis landscape and tools like StockTwits, Twitter and HedgeChatter have become useful tools for traders.

The problem we are addressing is overall ratings consensus of a stock. The unknown consensus of analyst's opinions and ratings is what we are trying to solve. Traders waste time reviewing analysts upgrades and downgrades using different news sources and websites that are inefficient at delivering a true consensus. Analyst Ratings Network and financial news media like Benzinga provide live ratings, but we think one research firm's opinion will not do justice for cautious investors. None of these websites provide a big picture analysis that aggregates the future of stock prices on one Simple Chart.

Professional analysts attempt to predict stock prices with ratings, however these ratings are often inflated and bias. These analysts also have conflicting interests because of their stake in the equity or current clients interests. Big banks and Wall Street research firms need a place to converge and form one opinion on the stock. Measuring their results and comparing them to amateur analysts will provide a clearer picture of who is the best stock analyst. Driving a better stock analysis experience and being able to see the future stock prices within 60-80% will increase confidence in the market. The key is to avoid bias and allow social consensus create a balance in the investment community.

Therefore, we have a solution to help individuals predict stock prices to avoid the overzealous real time delivery of social sentiment, which often leads to bad investment mistakes. The problem with real time delivery of social sentiment is that we already know individuals are buyers or sellers of the stock when they share their opinion and it is a mistake to jump into an equity because of real time social sentiment. Our mission is to provide a clearer picture of the future for investors by finding undervalued stocks that will appreciate in the future do to sales forecasts, market share growth and earnings estimates via Estimate.com.

WEB PROJECT

PURPOSE: Create a product to attract users, professional analysts and mainly investors. Tactical Capital Investors LLC needed a launchpad for their future ventures. AnalystWars.com is the first key step in the process. The idea was formulated with collaboration of our team, client and associates.

SCOPE:

- Compare professional analyst and user Wall Street stock ratings.
- Create a platform for useful investment analysis.
- Allow investors to navigate personal trades with accuracy.
- Focus on mobility and social consensus.

OBJECTIVES:

- Develop a web app using AnalystWars.com domain including:
 - Responsive design
 - Trending themes and layouts
 - Personalized and secure content
- Allow Users to:
 - Register
 - Create a profile
 - Rate trending Stocks and Exchange Trade Funds
 - Analyze historic Stock trends
 - Access relevant information regarding Stocks and Exchange Trade Funds

GOAL:

To develop a product that helps investors navigate trades with better accuracy and use a social consensus to interpret future stock prices that compare against Wall Street Analysts. We plan to cover only successful companies with outstanding financial balance sheets and diverge away from speculative stocks that so many traders like to make quick profits in. True investors buy into strong companies that have undervalued prices like Warren Buffett and Benjamin Graham. Our mission is to use that philosophy to predict future stock prices in companies with strong fundamentals.

TEAM ORGANIZATION

Use of Agile methodology was required for the build, which allows iterative and incremental software development. Two separate teams were formed to avoid confusion and easier collaboration of ideas. Our client required a functional and presentable website, which would meet the criteria of a minimum viable product. Therefore, our team focused on creating an effective and efficient solution in a very short span of time.

Team Members	Roles	Responsibilities
Pulkit Monga	<ul style="list-style-type: none">• Front End Lead• Communication Lead	<ul style="list-style-type: none">• Development Plan
Jian Deng	<ul style="list-style-type: none">• Front End Support• Design Lead	<ul style="list-style-type: none">• Design Specification
Zachary Vanoast	<ul style="list-style-type: none">• Back End Lead• Database Support	<ul style="list-style-type: none">• Requirement Specification
Nicholas Crooker	<ul style="list-style-type: none">• Back End Support• Testing Lead	<ul style="list-style-type: none">• Testing Plan

PROBLEM RESOLUTION POLICIES

Two separate teams were formed to allow easier collaboration of ideas, and avoid confusion. Our client required a functional and presentable website, which would meet the criteria of a minimum viable product.

RESOLUTION PLAN:

- ACKNOWLEDGE THE MISTAKE
- ANALYZE THE IMPACT
- IMPLEMENT A SOLUTION
- INCREASE DAILY COMMUNICATION

PROJECT PLAN

PROJECT SCHEDULE

AnalystWars.com						
Task Name	Start	Finish	Duration	Status	Assigned To	Comments
	02/27/14	04/17/14	36			
PROJECT SCHEDULE	03/03/14	04/16/14	33			
Iteration 1	03/03/14	03/06/14	4			
1. Initial Framework; Log In; Sign Up	03/03/14	03/04/14	2	Complete	Pulkit	
2. Database Tables	03/04/14	03/04/14	1	Complete	Zach	
3. Registration System	03/04/14	03/06/14	3	Complete	Zach & Nick	
4. Stock Information System	03/05/14	03/06/14	2	Complete	Nick	
First Prototype	03/06/14	03/06/14	1			
Iteration 2	03/17/14	03/21/14	5			
1. User Profile	03/17/14	03/21/14	5	Complete	Pulkit & Zach	
2. Profile Settings	03/17/14	03/21/14	5	Complete	Pulkit & Zach	
3. Stock Information; Stock Chart	03/17/14	03/21/14	5	Complete	Jian & Nick	
4. Analyst Leaderboard	03/17/14	03/21/14	5	Delayed	Jian & Nick	Tentative
5. Design Enhancement	03/22/14	03/24/14	3	Complete	Jian & Pulkit	
6. Homepage	03/22/14	03/25/14	4	Complete	Pulkit	
Second Prototype	03/25/14	03/25/14	1			
Iteration 3	03/26/14	04/11/14	13			
1. Blog; News; Extra Pages	03/26/14	04/04/14	8	Complete	Jian	
2. Hypothesis Video	03/26/14	04/04/14	8	Complete	Pulkit	
3. Social Interaction System	04/01/14	04/06/14	8	Delayed	Zach & Nick	Not Required
4. Testing	04/07/14	04/13/14	5	On Track		
Defect Review/Bugfixing	04/14/14	04/16/14	3			
Final Prototype	04/17/14	04/17/14	1			
	Complete	Delayed	On Track			

CONFIGURATION MANAGEMENT PLAN

- Separate subdomains “namebeta.analystwars.com” on Hostgator are created for each member.
- All subdomains contain the same code.
- Code developed on Hostgator subdomain is pushed to common Github repository.
- Code developed on Hostgator subdomain is copied to other subdomains.
- Modification to the code are made on separate subdomain and pushed to Github.
- Team decides if any further changes are necessary.
- Beta.analystwars.com subdomain is updated after all the features are functional.
- Advantage:
 - Function is tested before its added.
 - Meets time constraints
 - Tracking build and features
 - Faster Progressive Enhancement.

TECHNOLOGIES

- Presentation Tier
 - HTML5/CSS – Responsive design was implemented to satisfy wide range of device compatibility.
 - Javascript – Enhancement of User Interface using javascript was key for the build
 - JQuery – Additional design and navigation functionality
- Logic Tier
 - PHP
- Database Tier

- MySql
- Hostgator
- Web Hosting
 - Hostgator
- Testing
 - Python Selenium Library
- Historic Stock Information Data
 - Yahoo Query Library
- Wall Street Analyst Rating Data
 - XML
- Management and Communication
 - Teamviewer
 - Google Drive
 - Github

REQUIREMENTS SPECIFICATION

PROBLEM DESCRIPTION

Tactical Capital Investors would like to create a website where their users participate in a social stock rating platform, as well as receive professional financial advice. They want to offer their users a “client profile” by assessing multiple key attributes. This profile would include services like suggesting top 10 stocks, etc. They also want to focus on the social aspect, allowing users to rate stocks and offer a comparison of social stock rating to market stock rating. Their outlook is that the common person can estimate stock value just as well, if not better than the big-time financial professionals.

USERS/PERSPECTIVES

The users of this website could be anyone, but the social aspect, among others, should be able to appeal to an untapped demographic – the young investor 18-25. Currently most young people do not do much investing for a number of reasons (time, motivation, financial stability, knowledge, etc.). This platform could help change this trend.

FUNCTIONAL REQUIREMENTS

REQUIRED/DESIRED

- Allows a user to register and log in, with a profile and account settings
- Creates a client profile based on multiple key attributes determined during a survey at time of registration (or later)
- Provide stock suggestions based on the client profile
- Allows the user to rate stocks based on their experience/opinion
 - Rate stock price targets for each month
 - Avoid, Sell Short, Neutral/Hold, or Buy
 - Show comparison to Wall Street Analysis
- Allows the user to follow stocks (currently investing or just following)

NON-FUNCTIONAL REQUIREMENTS

- Layout and services must be clear and easy for the user
- Must be compatible on multiple browsers and browser versions, as well as on mobile
- User credentials must be secure
- Allow for backup of data

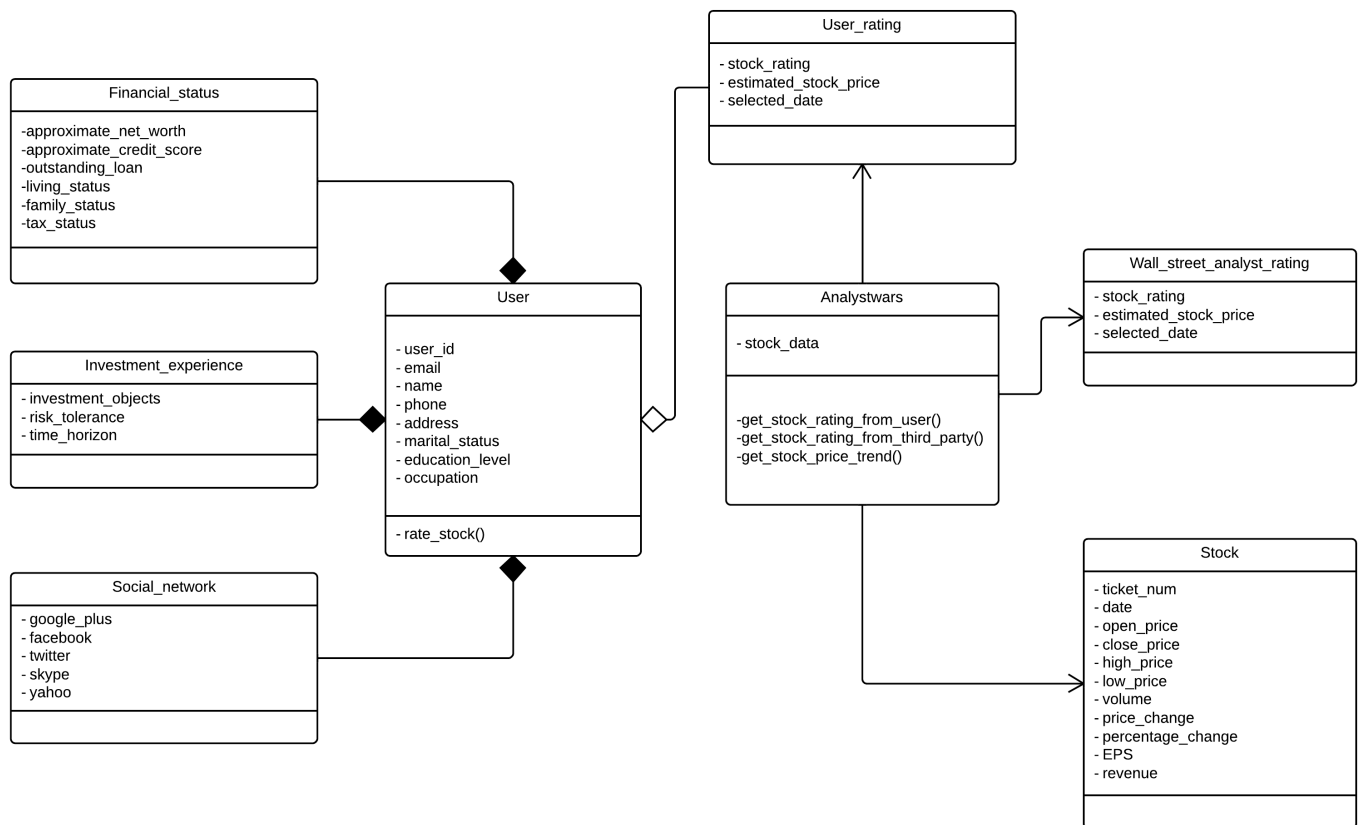
BUSINESS CONSTRAINTS

- Time limitations on our group due to project switch
- Limited budget determined by client
- Some functionality/requirements are unclear
- Lack of SME working directly on the project

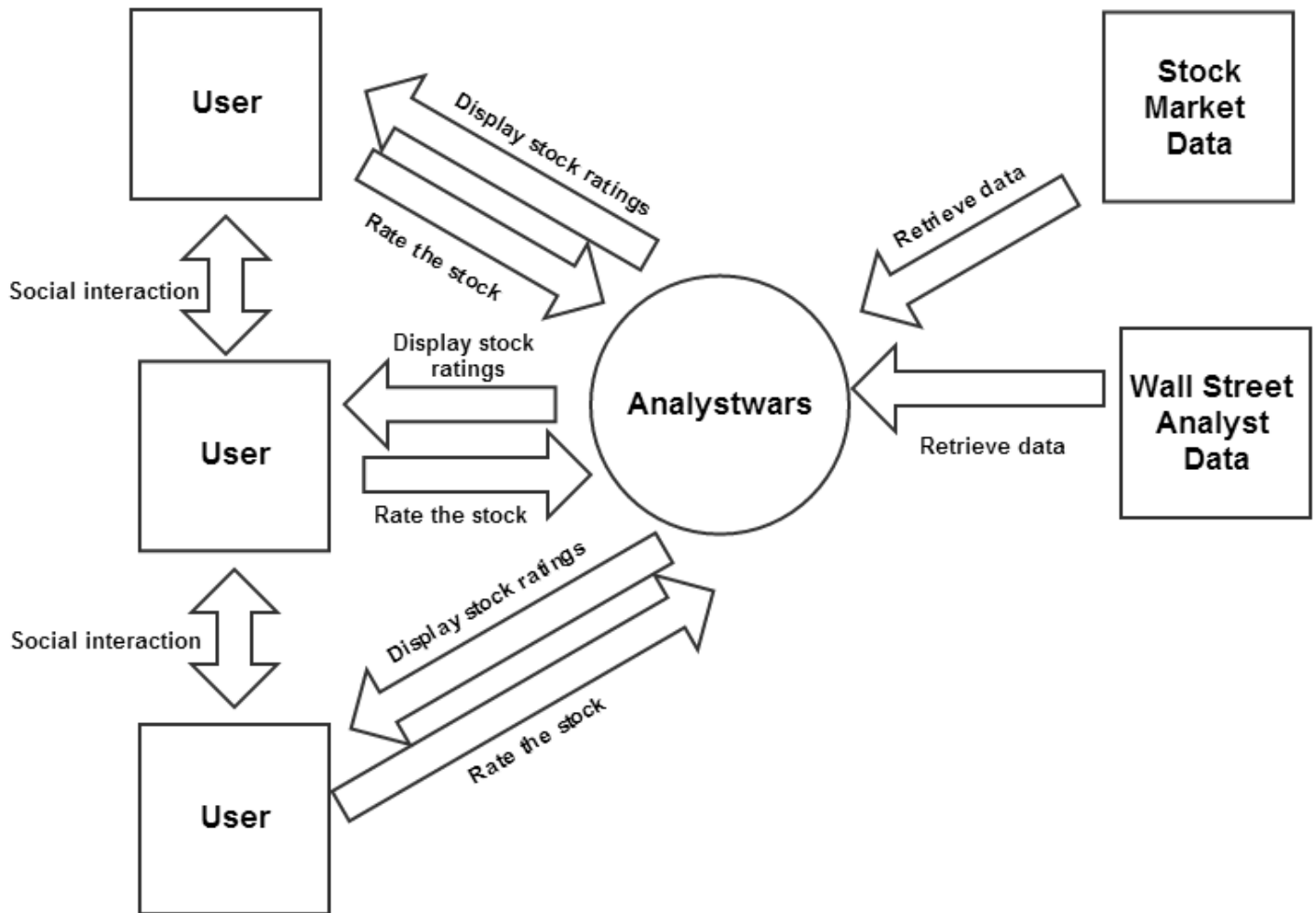
TECHNICAL CONSTRAINTS

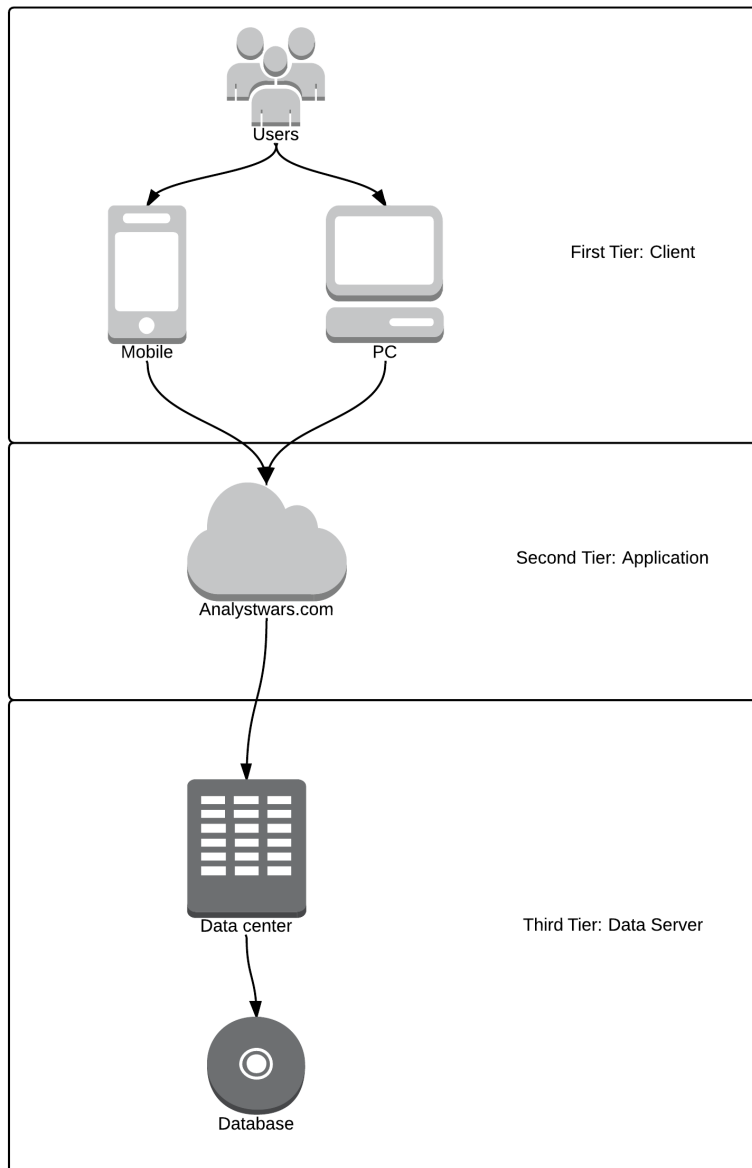
- HostGator functionality
- Dependency on financial website API's (accessing Wall Street ratings or market stock prices)

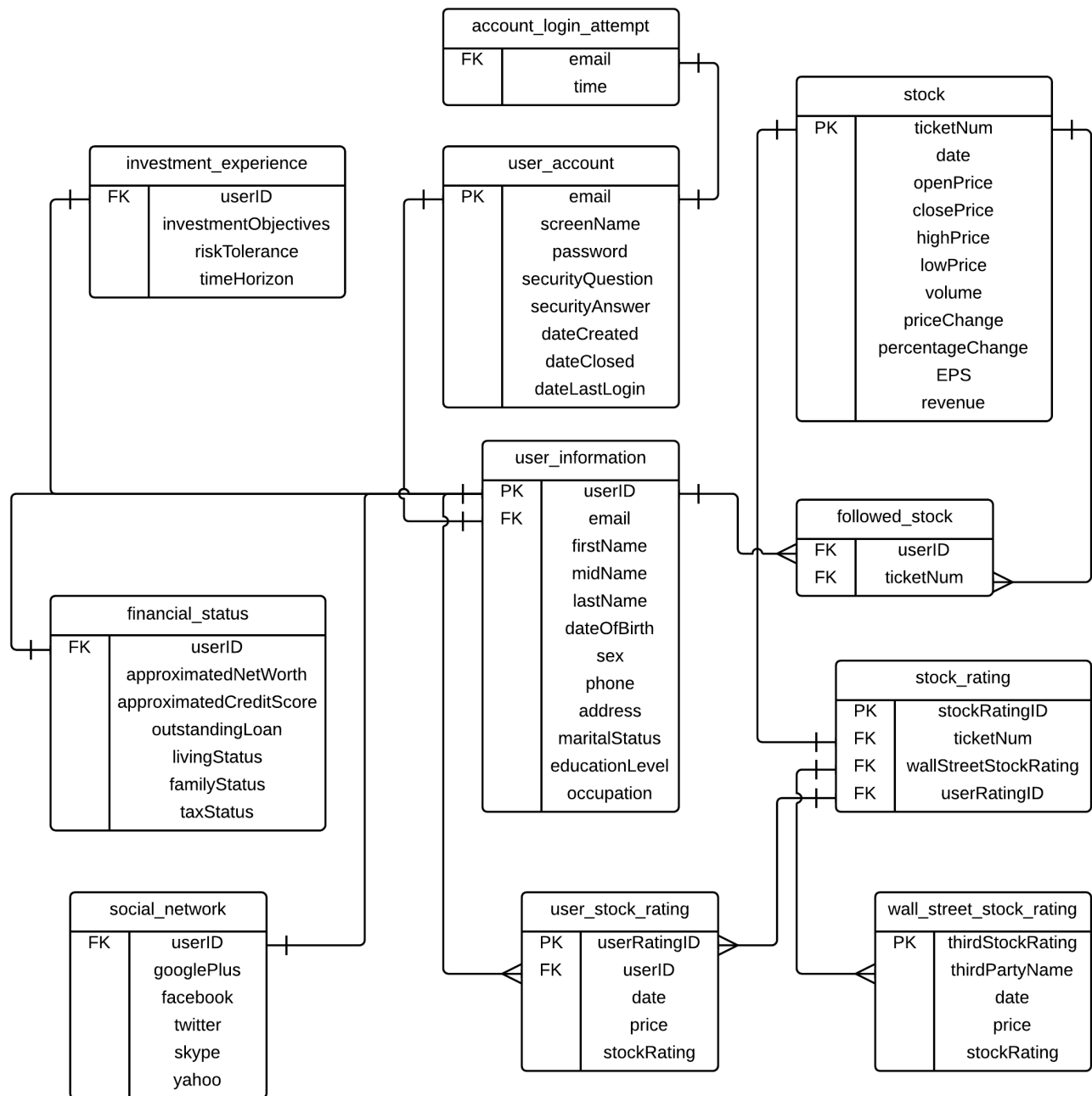
DOMAIN ANALYSIS



SYSTEM CONTEXT







TESTING PLAN

TESTING APPROACH

PASS/FAIL CRITERIA

- Functional Testing
 - Functional testing will be done using automated with the help of python's Selenium 2 library
- Non-Functional Testing
 - Non-Functional testing will be done manually

FUNCTIONAL TESTING

FEATURES TO BE TESTED/NOT TESTED

- Registration
 - Allow for user to register a unique email address
 - Password will have at least 6 characters, 1 number, 1 lowercase letter, 1 uppercase letter
 - Required fields are required
- User Profile
 - Username
 - Age, Email, Location, Education, Bio, Picture, Investment experience, sector/market cap research expertise
- Stock Ratings
 - Buy, Hold, Sell, and Enter stock price estimate per week/month/quarter
 - Performance tracking
 - Average percent over/under estimates, Number of stocks rated, open ratings, closed ratings, W-Ls
 - Reward system for accurate ratings

NON-FUNCTIONAL TESTING

- Layout and services must be clear and easy for the user
- Must be compatible on multiple browsers/versions as well as mobile devices
- User credentials must be secure (not stored as plain-text on database)
- Data backup

INTEGRATION TESTING

- Testing pieces of the system together
- Register an account and fill out user profile. Profile will be displayed on user account

- Accurately estimate stock. User rating increases and reward points given
- Inaccurately estimate stock. User rating decreases and no points are given.

SYSTEM TESTING

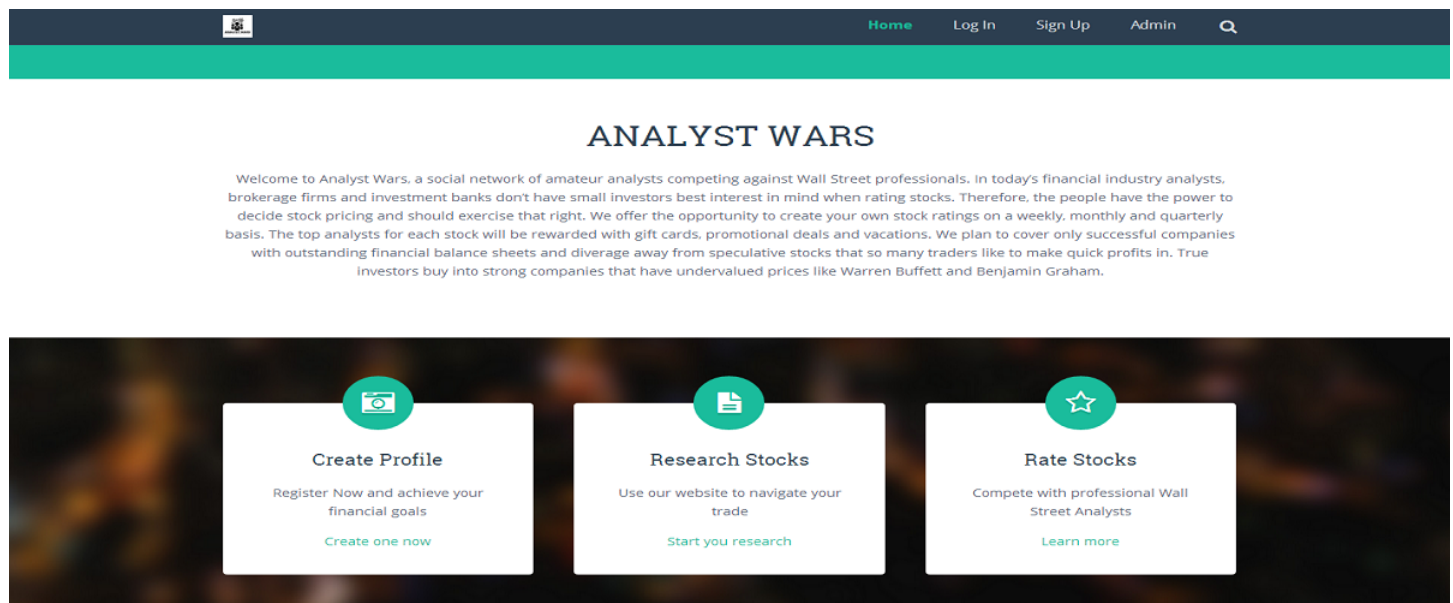
- Testing the system as a whole

USER ACCEPTANCE TESTING

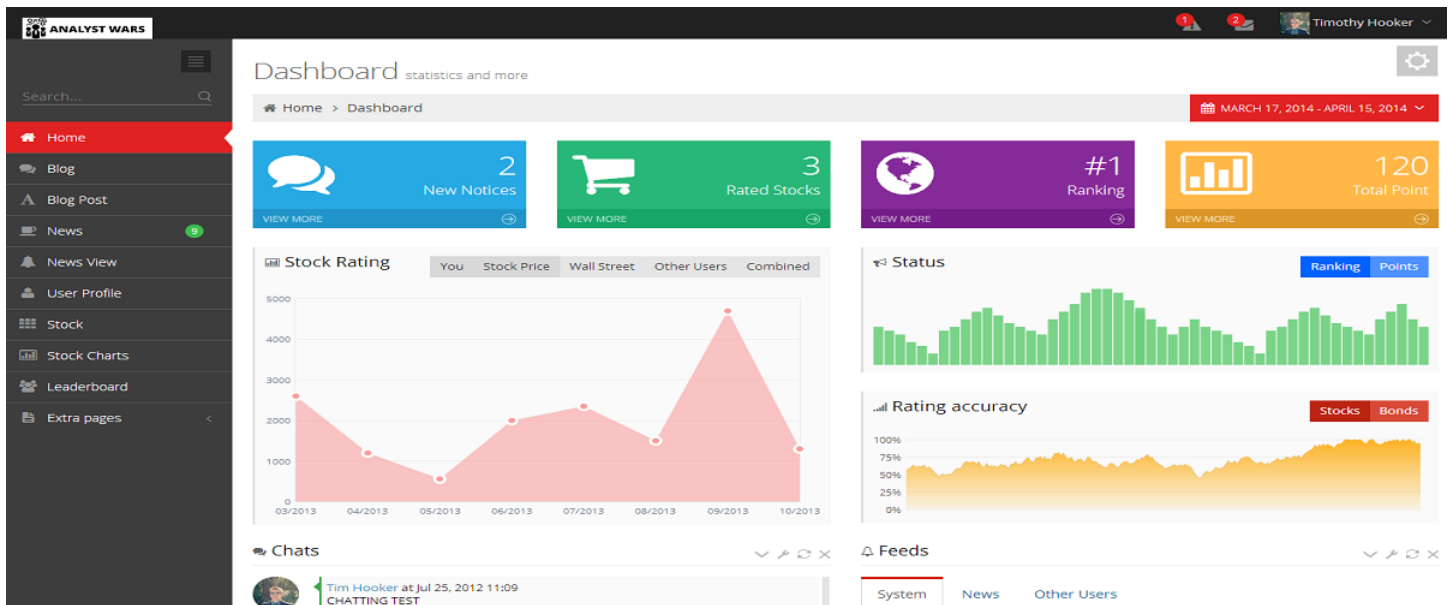
- User acceptance testing will be done once the main features are developed.
 - To show that the system can be support day to day use
- Register an account, fill out user profile, rate/estimate stocks, accurately rating stocks will positively impact a user's rating, inaccurately rating stocks will negatively impact a user's rating. When a user is accurate in their stock estimates, they will be rewarded with points which can be used at the store.

USER/ADMIN MANUALS

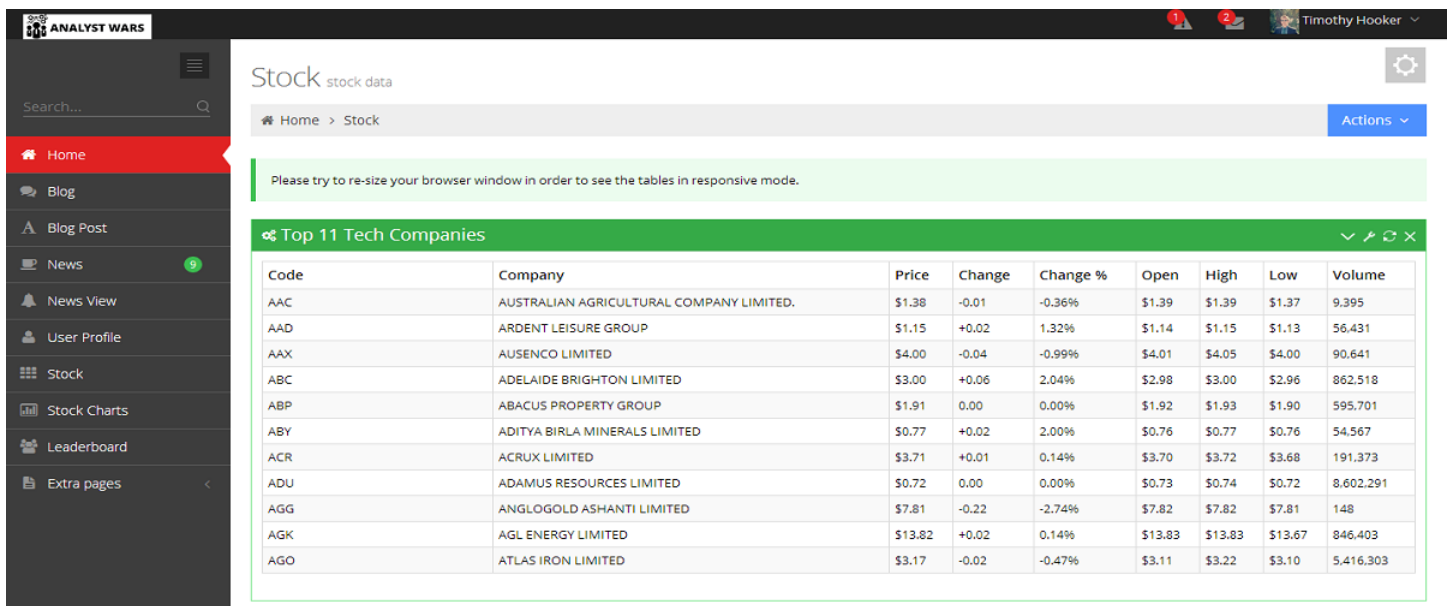
1. Homepage



2. User Dashboard



3. Stock Page



4. User Profile & Settings

The screenshot shows the 'User Profile' page for 'Tim Hooker' on the 'Analyst Wars' platform. The page layout includes a dark sidebar on the left with navigation links like Home, Blog, News, and User Profile. The main content area has tabs for Overview, Account, Stock Rating, and Help. Under the Overview tab, there is a profile picture of Tim Hooker, his bio (WSU senior student, Founder of AnalystWars), and a 'Ratings' section with a count of 2. To the right, a 'Rating Summary' table shows leaderboard ranking (1), points (120), and other stats. Below this, a 'Followed Stocks' table lists AAPL, AMZN, GOOG, and BAC with their current prices and ratings.

Stock Symbol	Company	Today Price	View
AAPL	Apple Inc.	\$539.78 Rated	View
AMZN	Amazon.com, Inc	\$343.41 Rated	View
GOOG	Google	\$1131.97 Rated	View
BAC	Bank of America Corporation	\$17.78 Not Rated	View

FINAL REPORT

CHALLENGES

- Stock portfolio requirements switched to analyst stock rating
- Minor issues with hosting delayed development and modifications to the code
- Multiple changes with requirements of the project

TEAM EVALUATION

Zach Vanoast – 25%

Backend work: database creation, database interaction (PHP functions), secure registration and login system (password salts, encryption), automated stock data collection, stock chart
Other: Requirement Specifications documentation, presentations, poster

Nick Crooker – 24%

Backend work: dynamically view and update profile, stock data search and insert into database (yahoo api), registration system
wrote automated scripts for testing the features and documentation

Pulkit Monga – 26%

Point of Contact, class webpage, final presentation, class presentations & notes, DevPlan deliverables, User Interface frontend development (Homepage, About, Log In, Registration form, Profile and Settings), design enhancement, Google drive maintenance (client, team and class documents), documentation compilation and final presentation poster.

Jian Deng – 25%

User Interface Components, Website layout, Stock page, leaderboard page, Blog page, News page, Color scheme / theme , Placeholder webpages, Design specification deliverables (DB design, GUI design, diagrams), Design enhancement