



## Digital Trading Application

# Sports Ex

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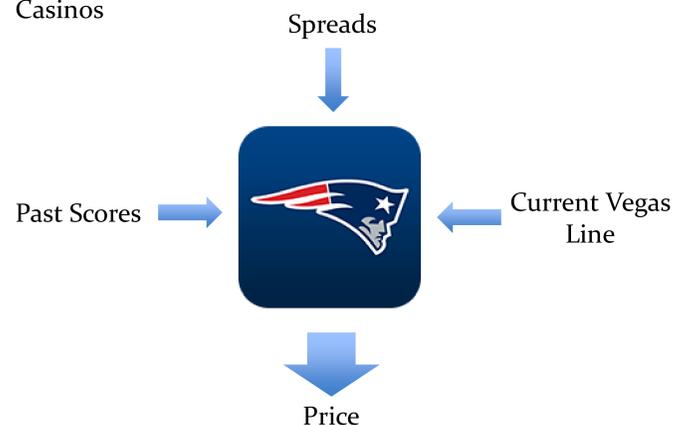
### Abstract

SportsEx is an advanced fantasy sports ios application that cleverly integrates predictive sports modeling into a stock market structure. Sports teams each have unique "tickers" and are traded like stocks inside the quantitative realm of the game. Prices are calculated from a unique algorithm that takes into account both historical scores along with future odds from headline Las Vegas casinos. Following the basic financial mantra "Buy Low, Sell High," the goal for each player is to buy teams during swings of bad luck and sell them at their peak performances. Easy to follow navigation controls guide the user through the matrix of possible bets, and colored prices indicate a stocks value at a glance. Maximizing your portfolio is the name of the game; but be careful, because it is very easy to lose it all!

### How is it different?

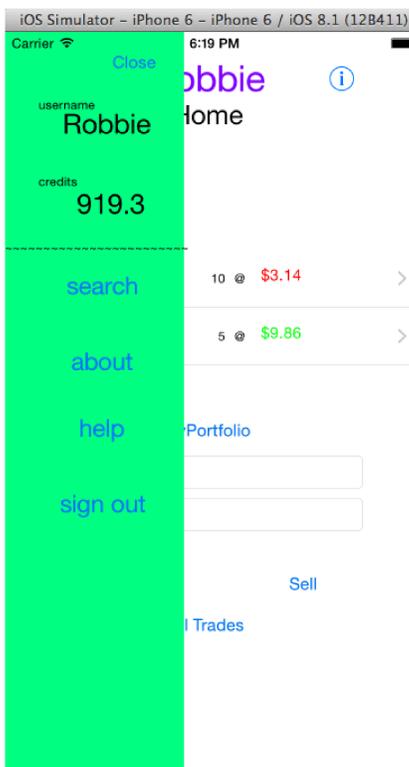
Traditionally the sport of Fantasy Football has centered around the control of individual players and their weekly performance. Players are given points based on various achievements made during each week's game, and your team's points are an aggregation of your players. SportsEx cuts the players out of the equation entirely.

The SportsEx unique pricing algorithm uses an innovative derivation spun-off from the Discounted Cash Flow valuation technique used in financial modeling. It takes into account both past performance and future predicted spreads from leading Las Vegas Casinos



### Home Page

Navigation Bar with User information, MyPortfolio, Quick "Buy/Sell"

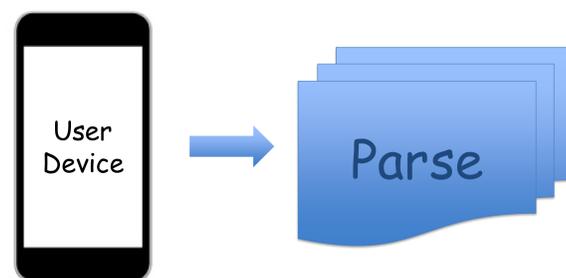


#### Important Features:

- Navigation Bar with username and credits remaining
- Search
- About
- Help
- Sign Out
- Shares @ Price for each Team
- My Portfolio quick link with color coded prices
- Quick buy/sell
- All Trades

**Home Screen.** The above picture show the home Screen of the application. It contains a search bar, buttons for quick "buy" and quick "sell" and the users personal portfolio information. Buttons to Logout and the About page are located at the top.

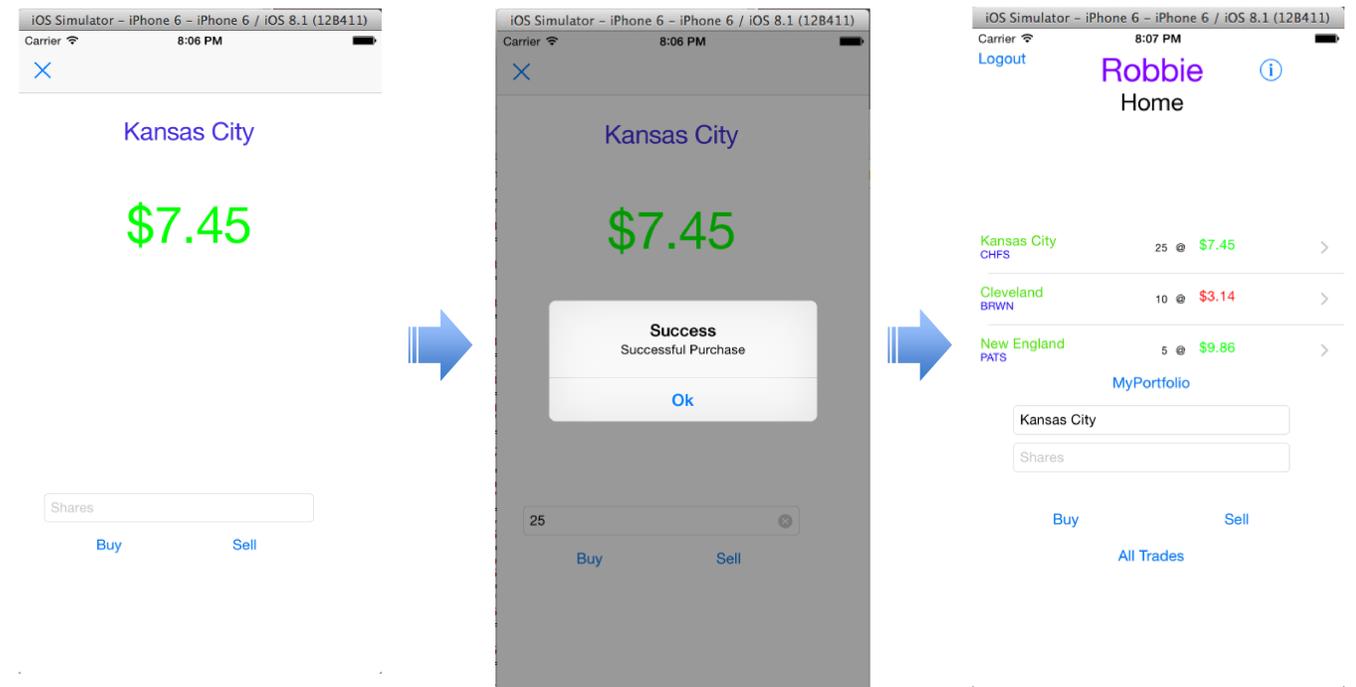
### Transaction Flow



**Transaction Flow.** The above picture depicts the transfer of shares from the back end database *Parse* to the users device. Each share that is purchased is stored in Parse, along with the users credits, portfolio, and list of transactions.

### Example Transfer

Example of a stock purchase and the success notification. Once a user buys or sells a Team's stock, the users credits will be drawn down accordingly



### Example Derivation

Below is a sample derivation of the New England Patriots following week 3 of the regular season.

| Wk | (Rst) | Team     | score (spread) |
|----|-------|----------|----------------|
| 1. | (W)   | Steelers | 28-21 (-7)     |
| 2. | (W)   | Bills    | 40-32 (+1)     |
| 3. | (W)   | Jaguars  | 51-17 (-14)    |
| 4. |       | @Cowboys | (-8.5)         |

Price today:

$$\frac{[(28-21)-7]+[(40-32)+1]+[(51-17)-14]+(-8.5)}{4} = \$5.12$$

*Derived value definition:* Patriots will outperform the spread by 5.12 pts. Calculations are not public.

At the start of each game, spreads are reset to 0 to reflect the live scoring of the game.

Therefore, using the same derivation technique, at the very start of the game, the Patriots price will jump to \$6.87. The (-8.5) changes to [0-0] and the same derivation follows to get the new price.

The above diagram depicts a single purchase of 25 shares of the Kansas City Chiefs through the App. The user first navigates to the Team Detail Page, where the team's current score is colored green because of the strength of the Chiefs' performance last season. Next, the user inputs "25" into the shares text box, and clicks "Buy." A simple toast notifies the user that the command has reached the database securely. Back on the Home page, the table has been updated with the new shares.

### Future Work

I hope to extend the SportsEx design and valuation technique to accommodate other sports. Where the NFL can be viewed as slow, meticulous bond trading, the MLB will be fast equities trading and teach the importance of quick, careful, prop-trading to aspiring investors.

### Tools Used

