UNIVERSITY OF SAN FRANCISCO

CHANGE THE WORLD FROM HERE

Slapital

University of San Francisco

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Rahoi.com

Try It Out: http://slapital.herokuapp.com/

Introduction

Acquire is a multiplayer, turn based strategy board game that has a complex set of rules. Each player competes against other players to gain control of companies and finish the game with the most money.

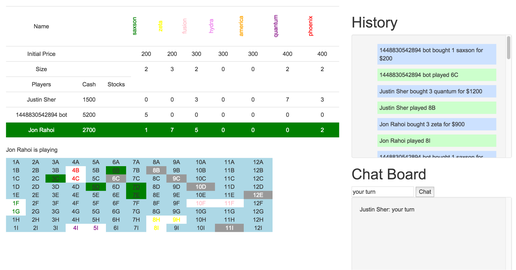
We created a similar online game in the form of a multiplayer web application. Our motivation behind this project is to provide an online board game that anyone from anywhere around the world can join and play against one another. This game will help to keep location separated friends connected.

The Game

The game is played by 3 to 6 players. On a player's turn they, depending on the current state of the game, will have some different options. However these options may have conditions that must be met the following are all the options the player has:

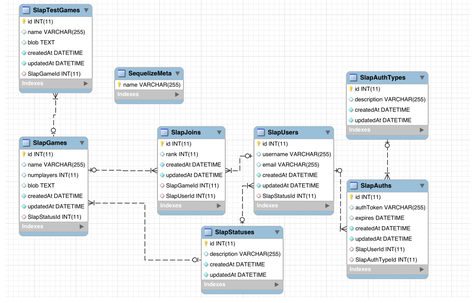
- Play tile
- Start a company:
  - If there are companies to start
  - If they placed a second tile to one already on the board
- Buy stocks
  - If there have been companies started
  - If there are stocks left to buy
  - If they have enough money
- Trade, sell, or keep stocks
  - If they would like to trade their current stocks for a different company's stock
  - If they have the proper ratio of current stocks
- Merge multiple companies
  - If there is a tile played that would connect two or more companies
  - The player of that tile would then decide which company stays alive and which one is taken over
  - This merger will yield bonuses for the majority and minority stockholders
- Draw tiles
- End the game
  - The player can end the game at any time and finish their turn or continue the game
  - Player can end the game under these two conditions:
    - A company grows to size 41 or larger
    - Or there is at least one company on the board, and each company has 11 or more tiles
  - Each player sells all of their current stocks
  - The player has the most money win the game.

User Interface

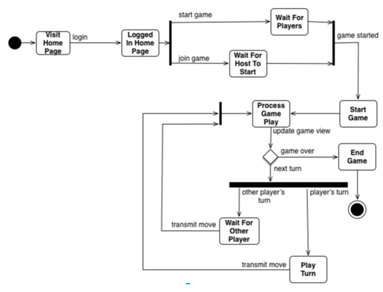


Original Acquire

Database Schema



Activity Diagram



Languages & Tools

We implemented the game using many different web application technologies:

Front-End Development:
- AngularJS
- HTML/CSS and Bootstrap
- Angular

Back-End Development:
- JavaScript
- NodeJS

Database:
- MySQL

Authentication:
- Passport JS

Testing:
- Karma
- Selenium

Deployment:
- Heroku

How We Did It

Our game is an online multiplayer game that uses web sockets to send data from the user's browser to the server in the form of a JSON object. This data tells the server what a player has done within the game. The server, which contains the game logic, is used to verify moves and their consequences. If the play is considered to be valid, the data object is then persisted to the MySQL database and sent to all the other users within the game. This MySQL database is where all the users, games, and chat information are stored. If the play is considered to be invalid the data will not be changed and an error is displayed to the user trying to perform the invalid action.

Testing

Testing for a web based, multiplayer game can be quite complicated. We used several automated testing tools to improve the coverage and speed of our testing. For integration tests, we used Selenium and Chrome Web Driver. For backend tests, we used the Mocha test framework. We also created bots that would play the game automatically against one or more actual players so that we could easily simulate larger multiplayer games.

Contact Us

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References

- Online version http://www.wizards.com/default.asp?x=ah/prod/acquire.
- Native Windows App Only http://www3.telus.net/kensit/NetAcquire/
- Iphone App version https://itunes.apple.com/us/app/e-board/id931626570?mt=8
- Software version http://nolanw.ca/acquire/

- Acquire board game by Avalon Hill