**Design Documentation – Paper, Rock, Scissors: Showdown**
Software Engineering

Paper, Rock, Scissors: Showdown is a web app that allows users to play the classic game against a collection of twelve villains. Each villain plays with a different strategy, so users can check the Stats page to determine which throws might be most appropriate for each villain.

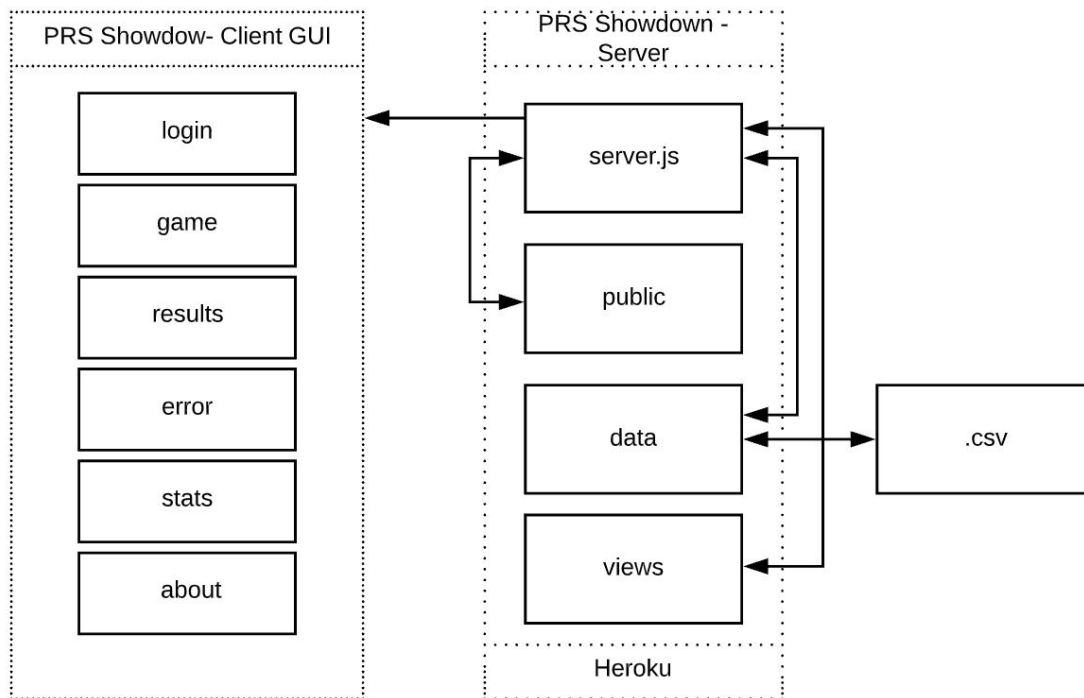# 1 Architectural Design

## 1.1 Overview

Our system design is the standard client-server architecture common in web apps. It consists of several high-level components:

- **Client**: Any HTML5-compliant web browser
- **Server**: Heroku
- **Database:** Node fs -> .csv tables
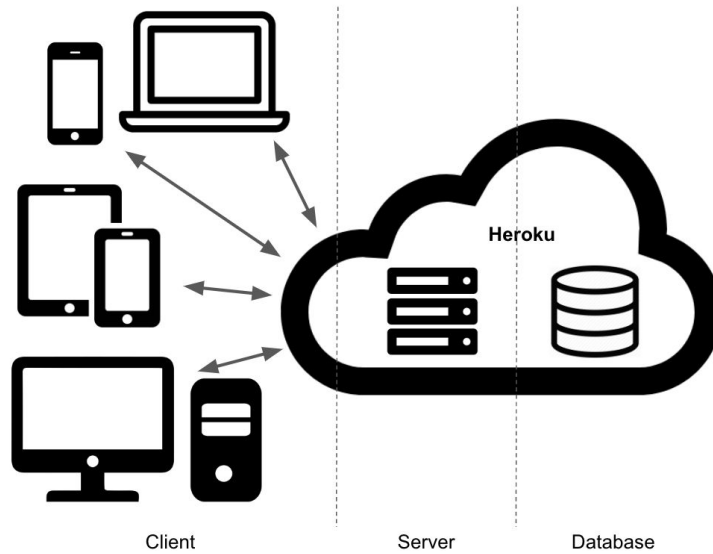


# 2 Low Level Design

## 2.1 Component Diagram

## 2.2 Data Diagram

### 2.2.1 `villains.csv`

```
name,paper,rock,scissors,paper_strategy,rock_strategy,scissors_strategy,wins,tied,losses
Bones,0,1,0,0.33,0.33,0.33,1,2,3
Comic Hans,5,0,0,0.9,0.01,0.09,3,6,4
Gato,11,15,14,0.33,0.33,0.33,0,14,11
Harry,0,0,0,0.33,0.33,0.33,10,2,1
Manny,0,0,0,0.33,0.33,0.33,0,0,0
Mickey,0,0,0,0.33,0.33,0.33,0,0,0
Mr. Modern,0,0,0,0.33,0.33,0.33,0,0,0
Pixie,0,0,0,0.33,0.33,0.33,0,0,0
Regal,0,0,0,0.1,0.45,0.45,0,0,0
Spock,0,0,1,0.2,0.2,0.6,10001,0,0
The Boss,0,0,0,0.1,0.8,0.1,0,0,0
The Magician,0,0,0,0.33,0.33,0.33,0,0,0
```

### 2.2.2 `users.csv`

```
name,password,paper,rock,scissors,paper_strategy,rock_strategy,scissors_strategy,wins,tied,losses
david,Redacted,5,3,25,1,1,1,1993,8,3
mario,1234,1,1,1,1,1,1,10,0,8
luigi,green_machine,1,1,1,1,1,1,9,2,6
toad,i<3nyc,1,1,1,1,1,1,8,8,0
peach,xoxoxo,1,1,1,1,1,1,7,5,1
```

### 2.2.3 `game_results.json`

```
{ name: 'david',
  weapon: 'scissors',
  villain: 'Gato',
  vallianroll: 2,
  winner: 0,
  userindex: 0,
  villainindex: 0,
  allusers:
   [ { name: 'david',
       password: 'davi',
       paper: '5',
       rock: '3',
       scissors: 26,
       paper_strategy: '1',
       rock_strategy: '1',
       scissors_strategy: '1',
       wins: '1993',
       tied: '8',
       losses: '3' },
     { name: 'mario',
       password: '1234',
       paper: '1',
       rock: '1',
       scissors: '1',
       paper_strategy: '1',
       rock_strategy: '1',
       scissors_strategy: '1',
       wins: '10',
       tied: '0',
       losses: '8' },
     { name: 'luigi',
       password: 'green_machine',
       paper: '1',
       rock: '1',
```

       scissors: '1',
       paper_strategy: '1',
       rock_strategy: '1',
       scissors_strategy: '1',
       wins: '9',
       tied: '2',
       losses: '6' },
     { name: 'toad',
       password: 'i<3nyc',
       paper: '1',
       rock: '1',
       scissors: '1',
       paper_strategy: '1',
       rock_strategy: '1',
       scissors_strategy: '1',
       wins: '8',
       tied: '8',
       losses: '0' },
     { name: 'peach',
       password: 'xoxoxo',
       paper: '1',
       rock: '1',
       scissors: '1',
       paper_strategy: '1',
       rock_strategy: '1',
       scissors_strategy: '1',
       wins: '7',
       tied: '5',
       losses: '1' },
     { name: '',
       password: '',
       paper: '',
       rock: '',
       scissors: '',
       paper_strategy: '',
       rock_strategy: '',
       scissors_strategy: '',
       wins: '',
       tied: '',
       losses: '' } ],
  allvillains:
   [ { name: 'Bones',
       paper: '0',
       rock: '1',
       scissors: '0',
       paper_strategy: '0.33',
       rock_strategy: '0.33',
       scissors_strategy: '0.33',
       wins: '1',
       tied: '2',
       losses: '3' },
     { name: 'Comic Hans',
       paper: '5',
       rock: '0',
       scissors: '0',
       paper_strategy: '0.9',
       rock_strategy: '0.01',
       scissors_strategy: '0.09',
       wins: '3',
       tied: '6',
       losses: '4' },
     { name: 'Gato',
       paper: '12',
       rock: 16,
       scissors: '14',
       paper_strategy: '0.33',
       rock_strategy: '0.33',
       scissors_strategy: '0.33',
       wins: '0',
       tied: '14',
       losses: '11' },
     { name: 'Harry',
       paper: '0',
       rock: '0',
       scissors: '0',
       paper_strategy: '0.33',
       rock_strategy: '0.33',
       scissors_strategy: '0.33',
       wins: '10',
       tied: '2',
       losses: '1' },
     { name: 'Manny',
       paper: '0',
       rock: '0',
       scissors: '0',
       paper_strategy: '0.33',
       rock_strategy: '0.33',
       scissors_strategy: '0.33',
       wins: '0',

```
      tied: '0',
      losses: '0' },
  { name: 'Mickey',
    paper: '0',
    rock: '0',
    scissors: '0',
    paper_strategy: '0.33',
    rock_strategy: '0.33',
    scissors_strategy: '0.33',
    wins: '0',
    tied: '0',
    losses: '0' },
  { name: 'Mr. Modern',
    paper: '0',
    rock: '0',
    scissors: '0',
    paper_strategy: '0.33',
    rock_strategy: '0.33',
    scissors_strategy: '0.33',
    wins: '0',
    tied: '0',
    losses: '0' },
  { name: 'Pixie',
    paper: '0',
    rock: '0',
    scissors: '0',
    paper_strategy: '0.33',
    rock_strategy: '0.33',
    scissors_strategy: '0.33',
    wins: '0',
    tied: '0',
    losses: '0' },
  { name: 'Regal',
    paper: '0',
    rock: '0',
    scissors: '0',
    paper_strategy: '0.1',
    rock_strategy: '0.45',
    scissors_strategy: '0.45',
    wins: '0',
    tied: '0',
    losses: '0' },
  { name: 'Spock',
    paper: '0',
    rock: '0',
    scissors: '1',
    paper_strategy: '0.2',
    rock_strategy: '0.2',
    scissors_strategy: '0.6',
    wins: '10001',
    tied: '0',
    losses: '0' },
  { name: 'The Boss',
    paper: '0',
    rock: '0',
    scissors: '0',
    paper_strategy: '0.1',
    rock_strategy: '0.8',
    scissors_strategy: '0.1',
    wins: '0',
    tied: '0',
    losses: '0' },
  { name: 'The Magician',
    paper: '0',
    rock: '0',
    scissors: '0',
    paper_strategy: '0.33',
    rock_strategy: '0.33',
    scissors_strategy: '0.33',
    wins: '0',
    tied: '0',
    losses: '0' },
  { name: '',
    paper: '',
    rock: '',
    scissors: '',
    paper_strategy: '',
    rock_strategy: '',
    scissors_strategy: '',
    wins: '',
    tied: '',
    losses: '' } ],
```

# 3 User Interface Design

## 3.1 Wireframe
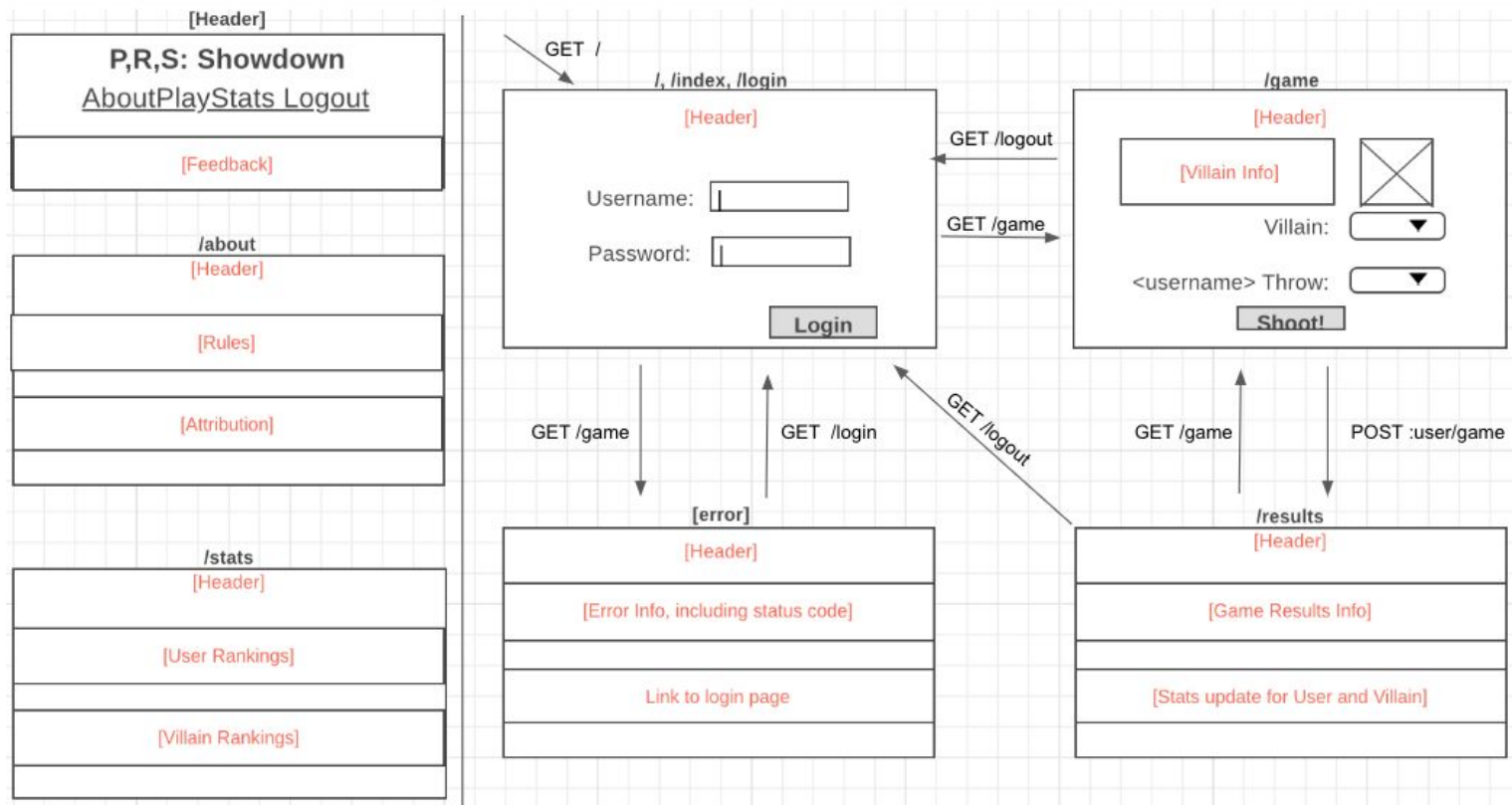
# 4 Routing Tables

## 4.1 server.js

| HTTP ACTION | Route | Body | Result |
|---|---|---|---|
| GET | /, /logout, /login | n/a | login.ejs |
| GET | /stats | n/a | stats.ejs |
| GET | /about | n/a | about.ejs |
| GET | /game | n/a | game.ejs, error.ejs |
| POST | :user/game | game_results.json | results.ejs |

# 5 Project Management

## 5.1 Group Member Tasks

<span style="color:red">David Does everything except for the code from the example which was done by Mr. Ghode</span>

## 5.1 Development Timeline

| | 12/13 | 12/15 | 1/10 | 1/15 | 1/20 | 1/24 | 1/25 |
|---|---|---|---|---|---|---|---|
| Routing | Done | Done | | | | | |
| Stats Page | | | Done | Done | | | |
| Game Logic | | | | Done | | | |
| Images | | | | | Done | | |
| Results Page | | | | | | Done | |
| Testing | | | | | | | Done |
| Comments | | | | | | | Done |
| | | | | | | | |
| | | | | | | | |