

King Pong

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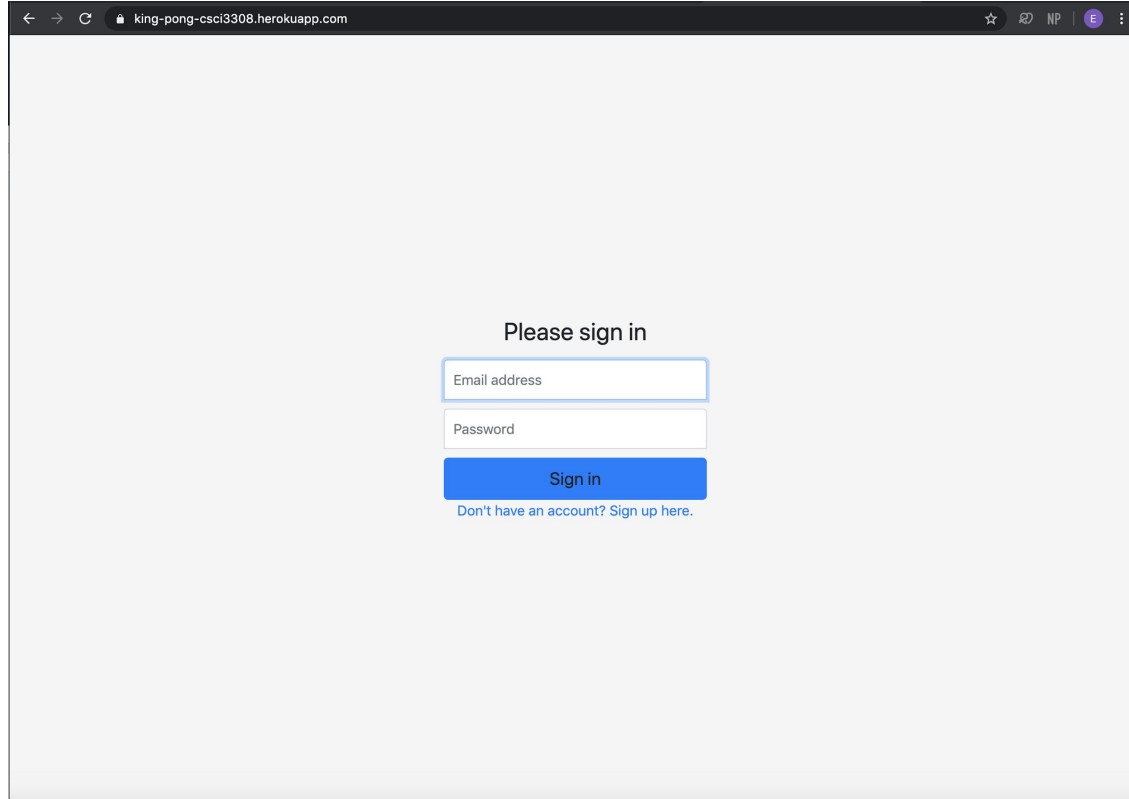
Game Overview: Synchronized Multiplayer



Game Overview: Synchronized Score Keeping



Game Overview: Saved User Info



king-pong-csci3308.herokuapp.com

Please sign in

Email address

Password

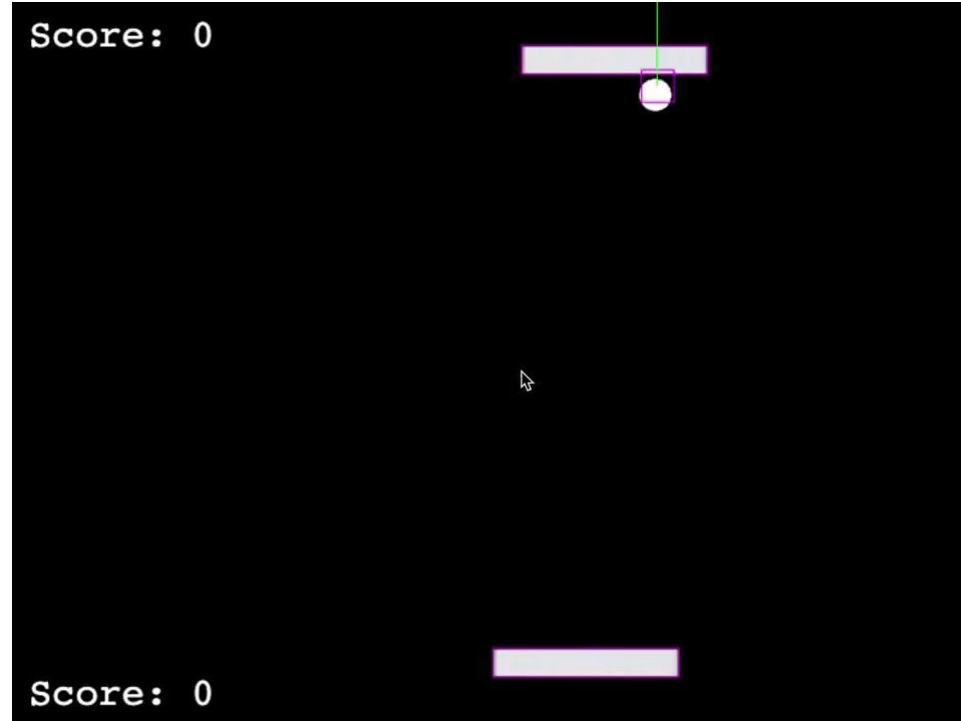
Sign in

Don't have an account? [Sign up here.](#)

Game Overview: Global Scoreboard

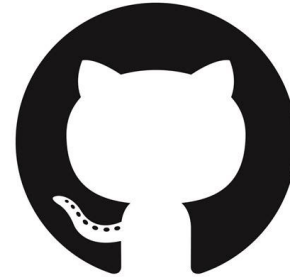
RANK	SCORE	NAME
1	69	TESTER2
2	28	BILLYBOBJOE
3	27	ASDF
4	25	TESTERWOW
5	12	TESTER

Game Overview: Paddle/Ball Interaction



Project Management

- Redbooth for project tracking with a Gantt Chart
 - Inconsistent view between creator and other team members
 - 2.5/5 for usefulness
- Google Drive
 - Helpful in organizing and planning team objectives
 - 5/5 for usefulness
- Github for version control
 - Helpful for group programming and version control
 - 5/5 for usefulness
- Iterative methodology
 - Develop feature
 - Meet on Zoom to discuss
 - Iterate
 - Were able to test as we developed
 - Worked pretty well 5/5

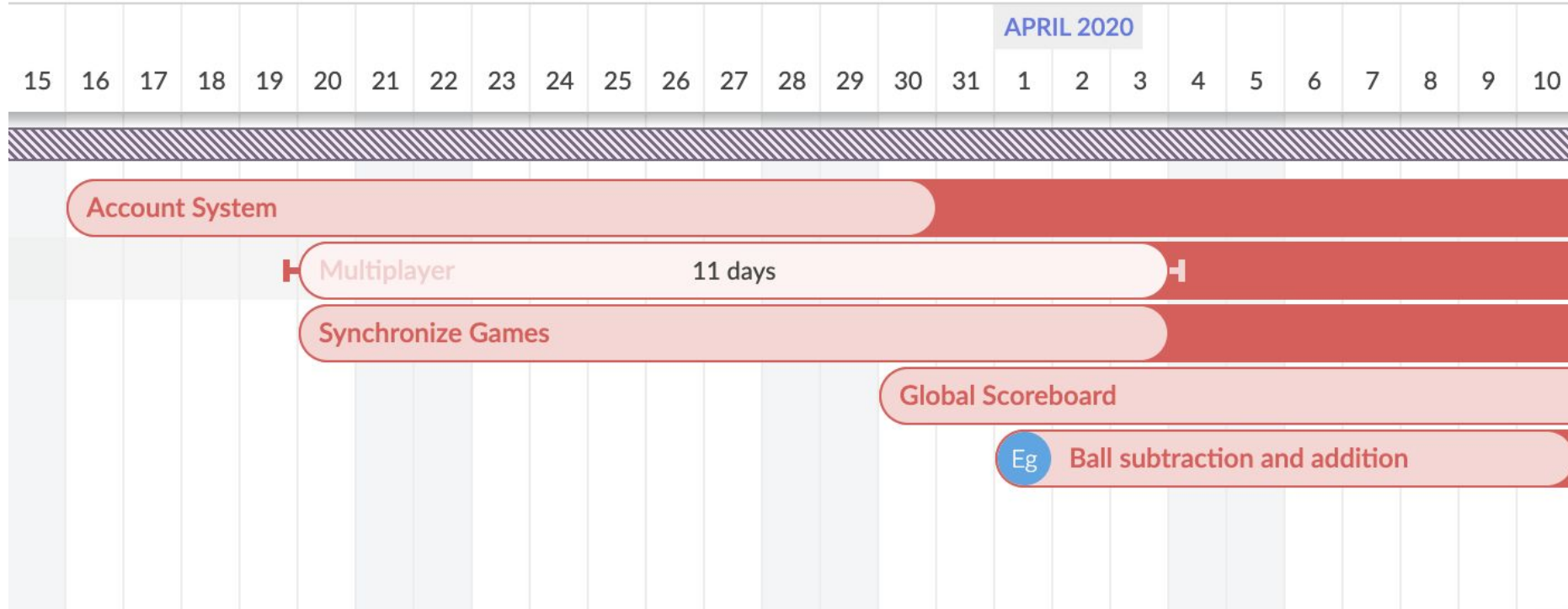


Project Management Cont.

- Slack
 - Good to direct message entire team
 - Helped us coordinate when to meet
 - 5/5 for usefulness
- Zoom
 - Used for meetings
 - Good for comparing work through screen share
 - 5/5 for usefulness



A portion of the RedBooth-Gantt Chart



Features to Complete Assignments:

Revised List of Features:

- Paddle interaction via keyboard input -COMPLETE
This serves as the user's actual interaction with the game.
- Ball interaction with user (including world boundaries and physics of collisions) -COMPLETE
This is the main game piece that is automated and provides the actual challenge of the game.
- Auto restart based on ball crossing paddle boundaries -COMPLETE
This keeps the game running automatically when a ball goes out of bounds signifying a lost/won point.
- Score count and display -COMPLETE
This shows to the player how well they are doing in the game.
- Login Page -COMPLETE
Allows for the user to create a profile and log in such that their data is associated with their account.
- Node.js local server -COMPLETE
Serves as the integration layer between the front end and back end.
- Paddle and ball image -COMPLETE
Actually displays the game pieces to the user.

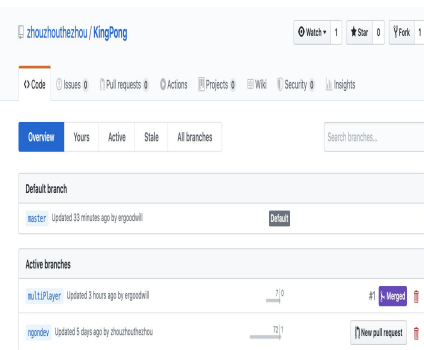
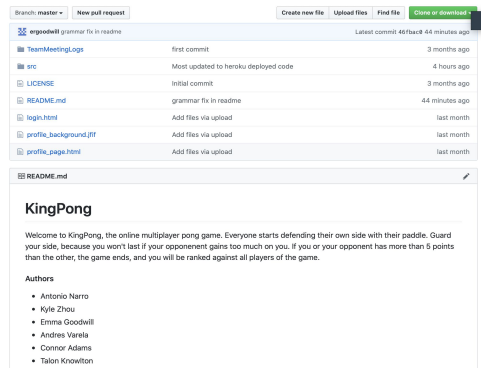
Expected Tools

Project Tracker: Google Docs & Redbooth

VCS Repository: GitHub

Database: MongoDB

Testing: Manually driven



Expected Tools Continued

Deployment Environment: Heroku



Client-Side Physics Engine: Phaser.io

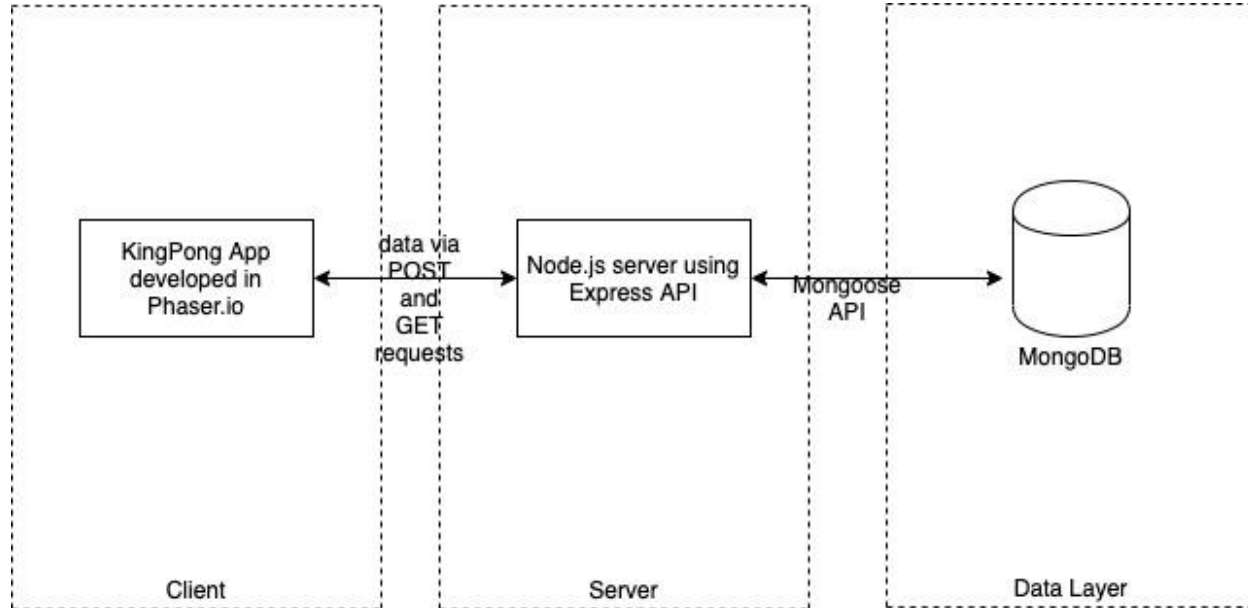


Server Side/Framework: Node.js and Websocket.io (Websocket.io for synchronizing events)



Server to Database API: Mongoose

Architecture Diagram



Challenges

- Finding Tools
 - Many tools not taught in class
 - Looking for and learning tools took time
- Phaser.io
 - Digging through docs/ Learning the game engine
 - Getting the physics engine to behave
- Server integration
 - Ball desync issue
 - Server-side holds master copy of ball (limited use of physics engine)
- COVID 19
 - Self explanatory

Challenges Continued

- Deployment Environment:
 - App behavior was different
 - Needed to fine tune previously coded literal values
- Overlap Function:
 - Phaser.io's "overlap" collision event was slow to trigger on Heroku
 - Other safeguards had to be added

Resources, Tutorials, References, etc.

- <https://phasertutorials.com/how-to-create-a-phaser-3-mmorpg-part-1/>
- <https://phasertutorials.com/creating-a-phaser-3-leaderboard-with-user-authentication-using-node-js-express-mongodb-part-1/>
- <https://stackoverflow.com/questions/42159175/connecting-heroku-app-to-atlas-mongodb-cloud-service>
- <https://www.youtube.com/watch?v=imR9LIbG3pU>
- <https://stackoverflow.com/questions/596467/how-do-i-convert-a-float-number-to-a-whole-number-in-javascript>
- <https://www.freecodecamp.org/forum/t/node-app-on-heroku-getting-application-error/170632>
- <https://www.youtube.com/watch?v=N42pkl-allQ>
- <https://stackoverflow.com/questions/15486687/websockets-nodejs-is-it-possible-to-broadcast-a-message-to-all-connected-client>
- <https://photonstorm.github.io/phaser3-docs/Phaser.Time.TimerEvent.html>
- <https://phasertutorials.com/creating-a-simple-multiplayer-game-in-phaser-3-with-an-authoritative-server-part-3/>
- <https://phaser.io/tutorials/making-your-first-phaser-3-game/>
- <https://phaser.io/docs/2.4.4/Phaser.Physics.Arcade.Body.html#newVelocity>
- <https://phaser.discourse.group/t/help-my-text-doesnt-show-up/1336>
- <https://snowbillr.github.io/blog/2018-07-03-buttons-in-phaser-3/>

Resources, Tutorials, References, etc.

- <https://docs.atlas.mongodb.com/security-whitelist/>
- <https://thecodebarbarian.com/how-find-works-in-mongoose>
- https://mongoosejs.com/docs/api.html#model_Model.find
- <https://socket.io/docs/emit-cheatsheet/>
- <https://www.joshmorony.com/phaser-fundamentals-handling-collisions/>
- <https://medium.com/@qingweilim/how-do-multiplayer-games-sync-their-state-part-1-ab72d6a54043>
- <https://kb.objectrocket.com/mongo-db/mongoose-findone-with-multiple-conditions-935>
- <https://www.curtismlarson.com/blog/2016/05/11/mongoose-mongodb-exclude-select-fields/>
- <https://photonstorm.github.io/phaser3-docs/Phaser.Time.Clock.html>
- <https://docs.mongodb.com/manual/reference/method/db.collection.find/>
- <https://stackoverflow.com/questions/6095530/maximum-call-stack-size-exceeded-error>
- <https://phaser.io/examples/v2/time/custom-timer>
- <https://mongoosejs.com/docs/tutorials/findoneandupdate.html>
- <https://github.com/Automattic/mongoose/issues/7392>
- https://www.tutorialspoint.com/nodejs/nodejs_response_object.htm
- <https://github.com/Automattic/mongoose/issues/688>

Resources, Tutorials, References, etc.

- <https://www.html5gamedevs.com/topic/20931-uncaught-typeerror-cannot-set-property-text-of-undefined/>
- <https://stackoverflow.com/questions/41318354/mongodb-failed-to-connect-to-server-on-first-connect/48449732>

And Generally:

- <https://phaser.io/>
- <https://medium.com/>