

ROBLOX SIMULATOR GAME - OFF SHIFT STUDIOS



What?

- Developed and optimized core gameplay mechanics for a Roblox simulator game
- Created 3D models with low polygon counts for performance optimization

How?

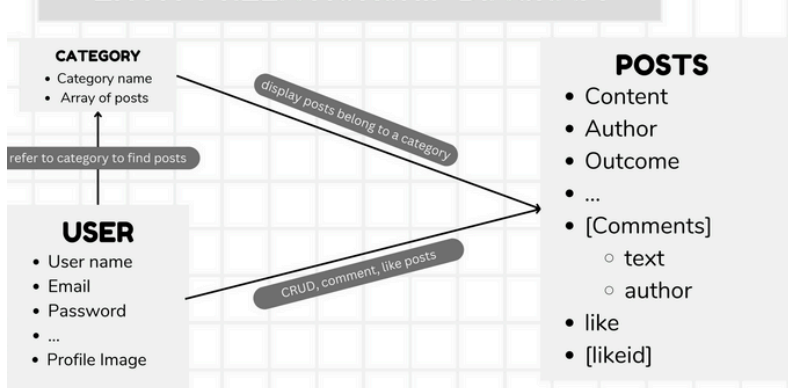
- Used **Lua** and Roblox DataStore to program key gameplay mechanics
- Designed 3D models using **Blender**

Results

- Created a community of **40+ active players** and **500+ times played**
- Programmed Lua scripts to create a quest and obstacle course system
- Improved **game responsiveness and loading speed by 20%**

STUDENT HELP FORUM APPLICATION - JHU SWE COURSE

ENTITY RELATIONSHIP DIAGRAM



What?

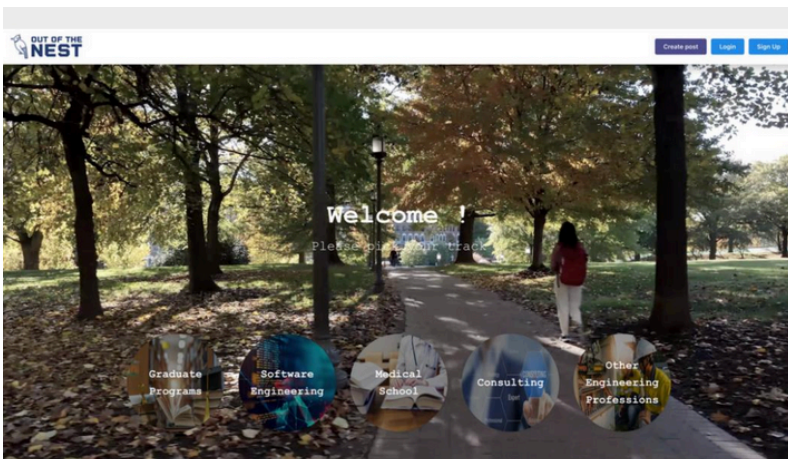
- Designed different object relationships and fields for **front-end and back-end components**
- Developed **CI/CD** pipelines with automated testing

How?

- Worked with **GitHub** and deployment with Vercel
- Used **entity relationship and UML diagrams** to plan ahead before programming

Results

- Achieved **80% test coverage** using **Jest**
- Developed **full-stack** web application using the **MERN-stack** to enable real time Q&A for student collaboration

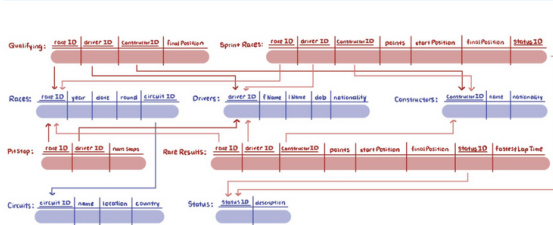


STEPHEN ZHANG

COMPUTER SCIENCE AT JOHNS HOPKINS UNIVERSITY

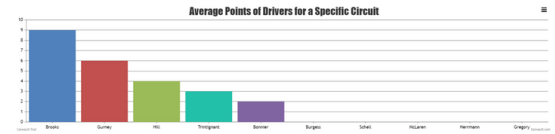
stephenzhang5@gmail.com
linkedin.com/in/stephmzhang
(929) 391-9804

FORMULA ONE DATABASE INQUIRY - JHU DATABASES COURSE



```
CREATE OR REPLACE VIEW AccidentsView AS
SELECT A.name, A.location, A.accidents, COUNT(R.circuitID) AS numRaces
FROM (
  SELECT C.circuitID, C.name, C.location, COUNT(C.circuitID) AS accidents
  FROM Circuits AS C, Races AS R, RaceResults AS RR
  WHERE C.circuitID = R.circuitID AND
        R.raceID = RR.raceID AND
        (RR.statusID = 3 OR RR.statusID = 4)
  GROUP BY C.circuitID
) AS A, Races AS R
WHERE A.circuitID = R.circuitID
GROUP BY R.circuitID;

CREATE OR REPLACE VIEW RaceWinnersView AS
SELECT RR.raceID, RR.driverID, R.circuitID
FROM Races AS R, RaceResults AS RR
WHERE R.raceID = RR.raceID AND
      RR.finalPosition = 1;
```



What?

- Structured a relational model with **8 primary keys** and **13 foreign keys** to efficiently query results
- Created visual representations in tables and graphs for query results

How?

- Used **SQL and PHP** to show query results in tables and graphs
- Refactored complex JOIN statements and minimized nested subqueries

Results

- Improved retrieval speed by **50% for 40,000+ records**
- Allowed users to visualize query results for **20+ interactive tables and charts**

XSS EMAIL SCANNER CHROME EXTENSION - JHU WEB SECURITY COURSE

Test2

Kurama <michaelenay02@gmail.com>
to me
[google.com/\" onmouseover=alert\(1\) //](https://www.google.com/\)

```
let embeddedLinks = link.match(/<\/script>.*src=.*\"/i);
if (embeddedLinks) {
  for (let i = 1; i < embeddedLinks.length; i++) {
    if (checkLink(embeddedLinks[i] + "\"")) {
      return true;
    }
  }
}
return false;
```

Test2 inbox x

Kurama <michaelenay02@gmail.com>
to me
Malicious link detected: [google.com/\" onmouseover=alert\(1\) //](https://www.google.com/\)

What?

- Developed a **Chrome extension** to detect XSS threats in emails

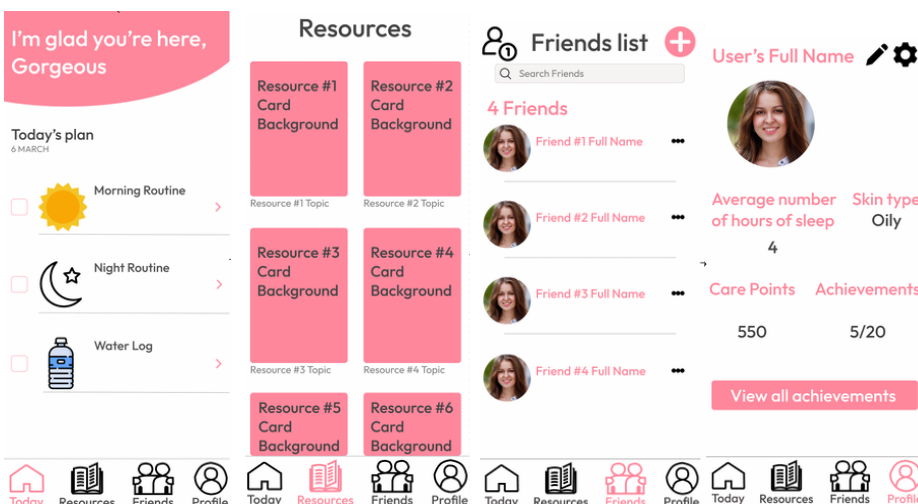
How?

- Used a **6,000-entry XSS payload database** to detect malicious links
- Coded in **JavaScript, HTML, and CSS**

Results

- Warns user of potential malicious links when opening emails

SKINCARE MOBILE APPLICATION - JHU MOBILE APPLICATIONS COURSE



What?

- Used **Java and Firebase** to develop a skincare mobile app for users to create healthy habits

How?

- Implemented **cloud computing solutions for secure data storage** and user authentication
- Designed app layout and color schema using **Figma with 30+ pages**

Results

- Created a **Java** based mobile app with an intuitive layout and securely stores user data through **Firebase**