STEPHEN ZHANG

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ROBLOX SIMULATOR GAME - OFF SHIFT STUDIOS

What?

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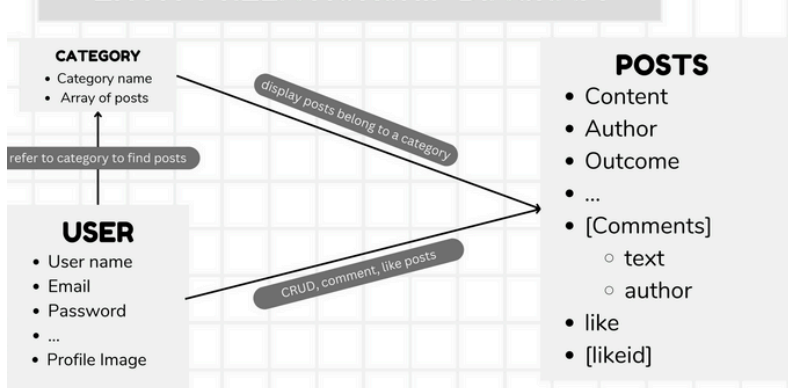- Created 3D models with low polygon counts for performance optimization

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 - JOHNS HOPKINS UNIVERSITY
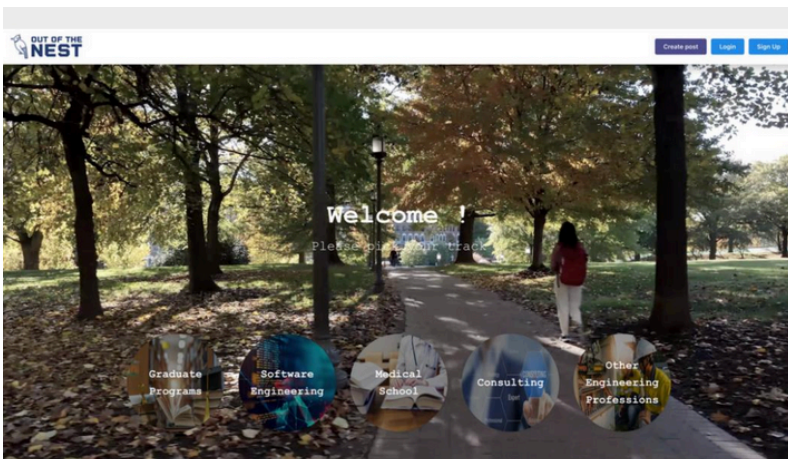

What?

- 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
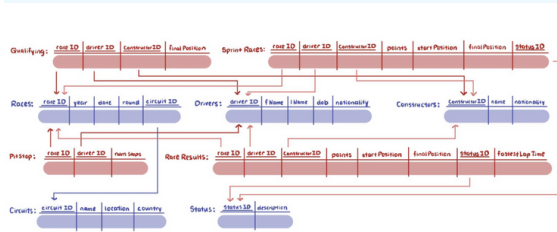
Results

- Achieved **80% test coverage** using **Jest**
- Developed **full-stack** web application using the **MERN-stack** to enable real time Q&A for student collaboration
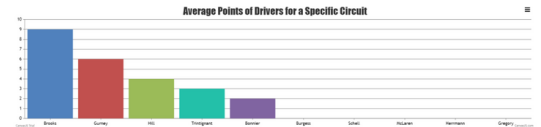
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FORMULA ONE DATABASE INQUIRY - JOHNS HOPKINS UNIVERSITY

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 - JOHNS HOPKINS UNIVERSITY

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 - JOHNS HOPKINS UNIVERSITY

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