Team Members: Mohraiel Matta, Erika Ledesma, Justin Ha Faculty Advisors: Markus Eger

CPP VR LAB: CYBERSECURITY TRAINING (DATA SCIENCE TEAM)

Introduction

A virtual reality simulation where the players are encouraged to study cybersecurity related questions by playing a game inspired by wave-based shooters.

Purpose

This game is created with the purpose of educating more users about cybersecurity to prevent more cases of scams and phishing.

Software/Hardware

unity

CalPoly Pomona
College of Science
Computer Science Department

Process

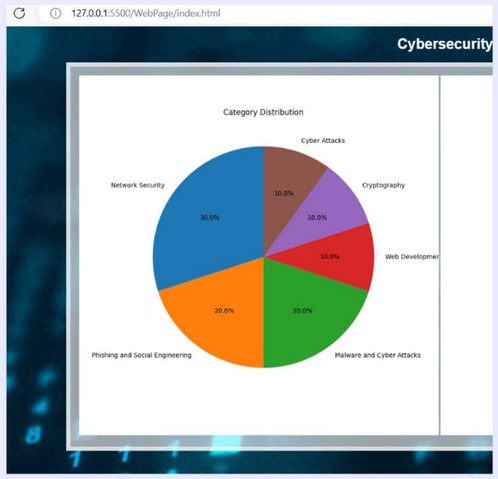
Every wave prompts the player with a question that may give them various upgrades if answered correctly.

Important data is collected each time a question is answered:

- **Duration:** amount of time taken for player to answer in seconds
- **Correctness:** evaluate if player has correctly or incorrectly answered a question
- **Cybersecurity Category:** specific category associated to the question asked to the player

Each question is logged under a unique user in a JSON file:

- JSON file was then used to analyze the data through graphs and place a recommender system for which topics of cybersecurity the player should study more



Google Research

This work was performed as part of the Google-funded exploreCSR program

DEVELOPMENT

Generating Cybersecurity Questions -> Analyzing the data to render onto a web page where the user can access their player data such as their strongest and weakest topics.


```
{
  "question": "Which of these is NOT a type of cybersecurity attack?",
  "options": ["Tailgating", "Headgating", "Spoofing", "Footgating"],
  "correctAnswer": 1,
  "category": "Malware and Cyber Attacks"
},
{
  "question": "Which cybersecurity attack involves overwhelming a system
  "options": ["DDoS attack", "Phishing attack", "Man-in-the-middle attac
  "correctAnswer": 0,
  "category": "Malware and Cyber Attacks"
},
```


Future Implementation

- Prediction
  - Predict how well player will do on specific cybersecurity question based off of demographic survey that they filled out
- Use Unity to send HTTP request to Flask API and integrate the recommender system in flask server
- Call OpenAI's API to generate cybersecurity questions based on the recommender system

Risks of the Internet

- Stolen personal info due to phishing schemes such as:
  - Clicking on a suspicious email link
  - Answering hacked social media accounts
  - Weak passwords capable of being guessable
  - Data breaches from numerous websites that have your information