Computer Science Education Game

MIDTERM PROJECT REPORT
Team GJC

https://github.com/JakenW/Computer-Science-Education-Game/tree/main/Midterm%20Presentation

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PROJECT DESCRIPTION

- Computer Science Instructor

- NPC interactions to solve logical puzzles while answering CS questions.

- CS lecture after level completion

OBJECTIVES

1. Several Locations

2. Total of Five Days (Levels)

3. Encourage Computer Science Education

4. An Outlet to Practice CS knowledge

5. Resource for studying Computer Science

PROBLEMS TO SOLVE

- Boundaries/Map Collision

- Map/Location Change

- Password Field and Functionality

- Handling error when creating account with

   pre-existing name

- Implementing canvas page into overall
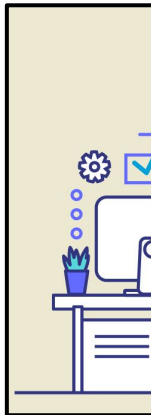
   webpage

MORE PROBLEMS TO SOLVE

- Recreate puzzles table in database

- Implement nonogram puzzle functionality

- Transition from Open World to Puzzle Interface

- NPC to User Interaction

- In-Game Dialogue (from Database)
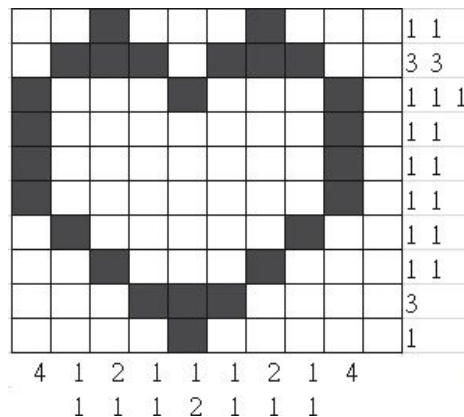
BACKGROUND & PROJECT PLAN

- Individual MERN projects: Video game information App;

  Todo app

- Prior Flask Projects: Seivom App; Photo App

- Helped facilitate original functionality

- Useful references for understanding languages

- Difficult to implement in this project

- Originally planned for 1 level to be playable by Midterm
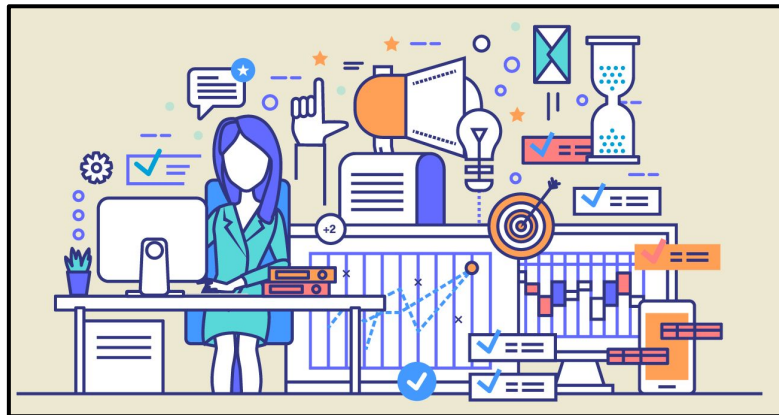
TECHNICAL DESCRIPTION

Development Stack:

- Mongo (Backend), Express (Backend), React (Frontend), Node (Frontend/Backend), HTML (Frontend), CSS (Frontend), JavaScript (Frontend)

Platform/Tools:

- Visual Studio Code (JavaScript, HTML, CSS)
- MongoDB Atlas
- Tiled

MORE ON TECHNICAL DESCRIPTION

Basic Functionality:

- Move Around Environment
- Traverse Rooms
- Interact with Objects/NPCs
- Play Puzzles
- Retrieve and Answer Questions
- Clear Levels
- In-Game Dialogue
- Store Player Data

Expected Features:

- Upload Question Sets
- Multiple Save Files
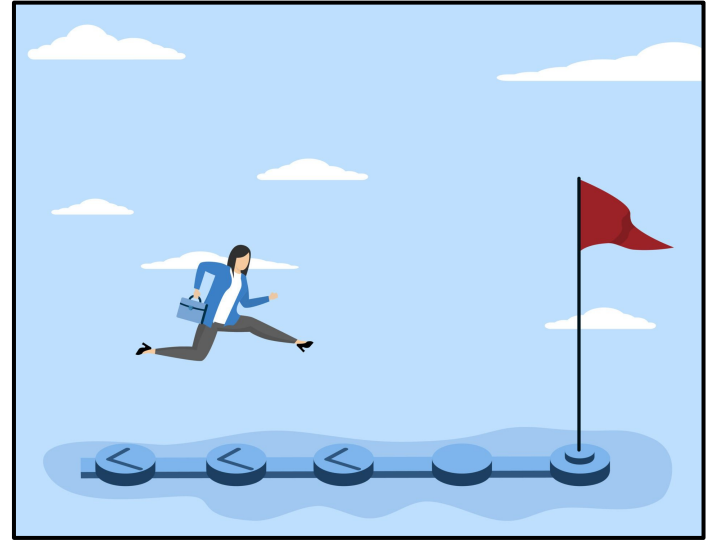- Question Difficulty Selection

ACCOMPLISHED WORK

- Open-world Environment

- Player Movement

- Website for the game

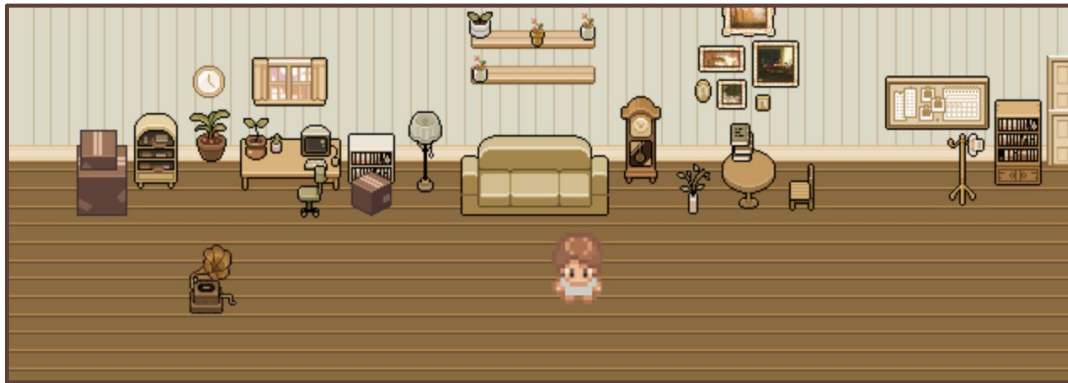- User Account Creation

- Question Creation

MORE ABOUT ACCOMPLISHED WORK

- 7 Component Files (Front End Functionality)

- 1 Server File with 2 Route Files (Back End Functionality)

- 2 Database Tables (Users and Questions)

- 3 PNGs of Game Backgrounds

- Some aspects of the code are not fully fleshed out

- Basic functionality exists

STATUS

Create New User

Username

Register

Create New Question

Question

Correct Answer to Question

Possible Answer 1

Possible Answer 2

Possible Answer 3

Possible Answer 4

Create Question

EFFORT

| Group Member	Roles	Hours Spent
Jaken Whipp	● Creating db tables ● Connect frontend and backend ● Create functionality	10.5 hours
Christina Kong	● Frontend/Website Designer ● Game Art/Assets	7 hours
Grayson Swift	● Game Environment Designer	8 hours

Group Meetings

Weekly/Daily Tasks

Github/Group Server

METHODOLOGY

- Rapid development… but why?
  - Flexible and quick approach
  - Better risk management/control
  - Good Client and Business involvement
  - Effectively adapts to change
- Facilitated the Flask to MERN swap
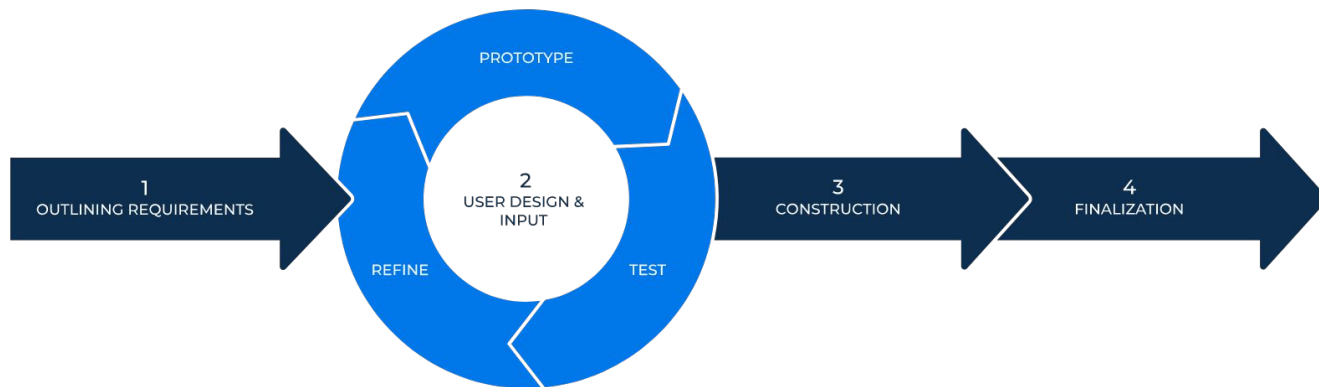
LESSONS LEARNED

- ● Flask alongside Canvas is Complicated
  - ○ Difficulties accessing images within script file when using Flask
  - ○ Flask is rigid with accessing files (src = "{{url_for('static', filename='name')}}")
  - ○ Troubleshooting image file locations through Flask proved difficult
  - ○ Influenced swap from Flask to MERN

Username

JakenW

Password

...

Confirm Password

...

Username

JakenW

Password

...

LOGIN COMPLETE   LOGIN FAILED. PLEASE TRY AGAIN.

HOME   TRY AGAIN

THE PASSWORDS DID NOT MATCH/ACCOUNT ALREADY EXISTS. PLEASE REGISTER AGAIN.

TRY AGAIN

2	admin	teamGJC
3	test	123
4	JakenW	123

MORE LESSONS LEARNED

- Working Independently Can be Confusing

- Tasks conducted by others can be difficult to understand and operate on without context.

- Use of different languages for differing aspects contributed to confusion due to inexperience with languages.

- Using the same sources and tutorials can help grow comprehension.

MORE LESSONS LEARNED

- Combining Aspects can be Challenging
- The way of handling things within dependencies is different than expected
- Contributes to longer time spend troubleshooting merging pieces
- Figuring out how different dependencies interact prior to solidifying their use should help decrease this issue

EXPECTED FORTHCOMING ACTIVITIES

Group Member	Activities	Deadlines
Jaken Whipp	- Implementation of puzzles - Account verification - DB data to Frontend	Everything by May 1st Combine Aspects by May 11th
Grayson Swift	- Establish final game map - Create transitions between scenes - Bug test character interaction	Want to get all the map done by by the first week of May Transitions should be done by beginning of April Bug testing will be intermittent
Christina Kong	- In-game Dialogue - Character Portraits - Background Art - Finalizing the Game's Website	In-Game Dialogue - By April 24th Character Portraits/Background Art - By May 1st Finalizing the Game's Website - By May 11th
The Team	Script for CS Lessons	April 24th