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SoftDev1 pd9
P #01 — ArRESTed Development
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Rick and Morty's Minigame Madness by Team qafee

Project Objective:

The overall goal of the project is to create a fun and addictive game for users to play while increasing their stats and building a collection of characters from the television show Rick and Morty. We will be using *Bootstrap* as our front-end framework.

List of Required Program Components:

- Dashboard Page
  - After the user has successfully logged in, the user will be redirected to the dashboard page where they will have the ability to see their statistics and play the different minigames.
- Minigames Pages
  - See design document page 2 - Minigames
- Character Collection Page
  - Will display all the characters the user has collected over the course of playing the game.
- User Accounts
  - Most of this will come from our previous project but we will enhance it to better fit this project. For example, upon registration, the user will be able to choose their starter character.

Optional Components:

- Allow user to change to other characters from their collection
- Achievements for each minigame
- More minigames

Database Tables:

1. Users Database: Contains users' username, password, gold, stats, and information about their current character

userID	username	password	exp	strength	intelligence	luck	gold	charID	charName	charImg
0	QAFee	coffee	42	72	95	49	125	1	Rick Sanchez	<link to image>
1	coughE	QAFee	1	1	2	1	10	2	Morty Smith	<link to image>

2. Characters Database: Contains all characters users have collected

userID	charID	charName	charImg
0	1	Rick Sanchez	<link to image>
0	362	Traflorkian	<link to image>
1	2	Morty Smith	<link to image>
1	361	Toxic Rick	<link to image>

Minigames (and their respective APIs):

- Intelligence Trivia: Trivia quiz to increase **intelligence stat** (Open Trivia API)
    - Players fill out a form containing multiple-choice questions and answers, and press the submit button at the bottom of the page. The user's **intelligence**, **gold**, and **exp** change in the database based on their score.
- Strength Arena: Battle other characters to increase **strength stat** (SuperHero API)
    - Superheroes are coming from other dimensions, and they want to train with you to get stronger. You fight them in the best way possible: rock-paper-scissors. The player can click on a rock, paper, or scissors, and if the player wins they gain strength. The user's **strength**, **gold**, and **exp** change in the database based on the result of the battle.
- Lucky Lotto: Slot machine to get a new character and increase **luck stat**; requires gold to play (Rick and Morty API)
    - Players click a button, which takes 10 gold and generates 3 random numbers from an interval of 1 to 10..
        - If the numbers generated are all the same the player wins. A randomly chosen character from the Rick and Morty API will be displayed. The player can choose to either switch to this new character, or take 50 gold instead. If the player chooses to switch characters, the corresponding **charID**, **charName** and **charImg** belonging to the current user gets changed, and a new entry gets added to the characters database. The user's **luck**, **gold**, and **exp** change in the database.
        - If the numbers are different, a message will show the player that they lost.

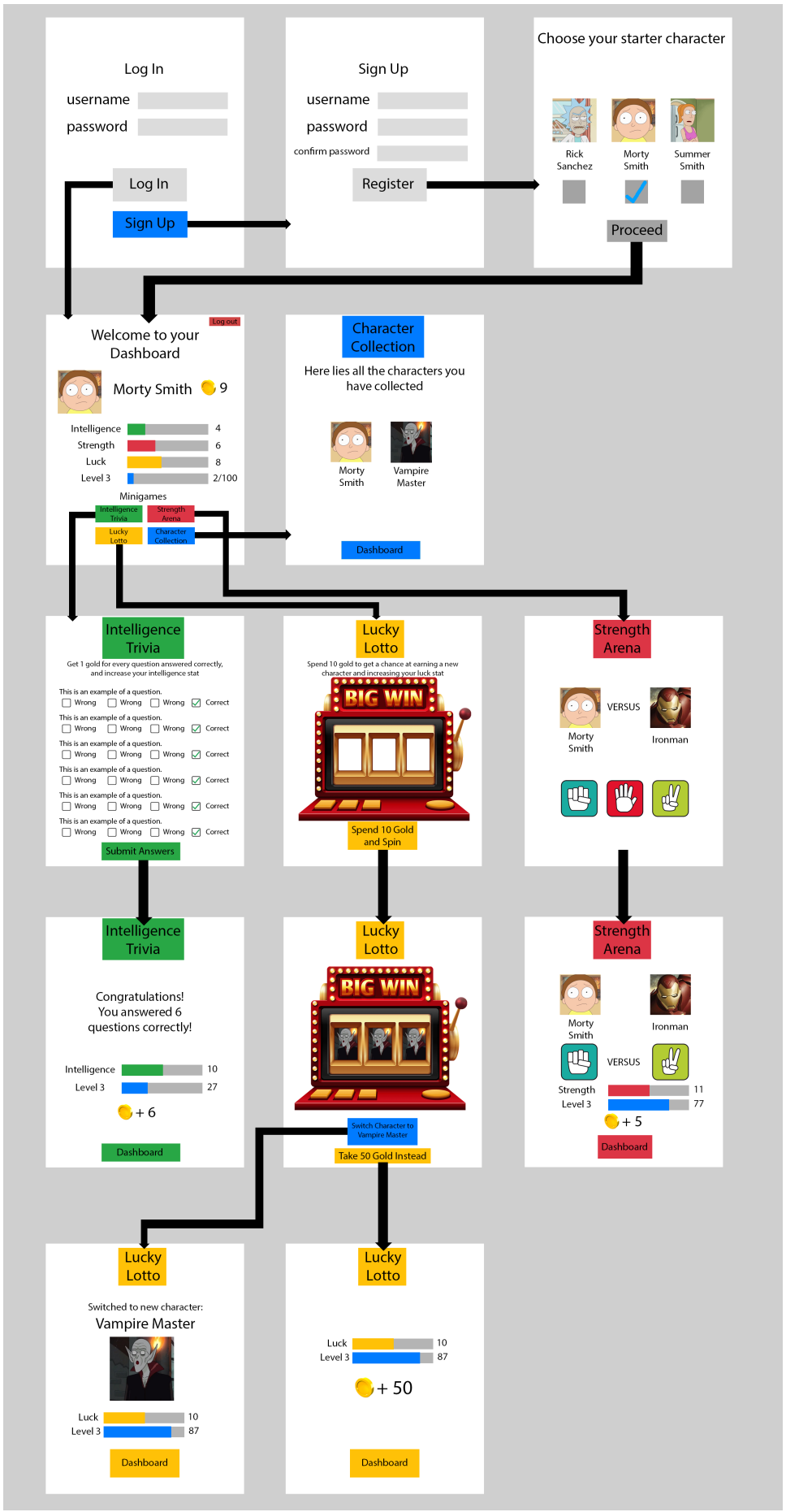
Levels/Experience:

- All minigames provide experience which can cause the character to level up.
- Reaching certain level intervals (every 10 levels or so) allows players to choose a character of a higher tier. (tiers are each page of the API's response, so 20 characters per tier, next tier starts at next page)
- Levels are stored as increments of 100, or experience. So level 1 is from 1-100 experience, level 2 is from 101-200 experience, level 3 is from 201-300 experience, etc. This allows the dashboard to show granular progression for each level, so if the character is level 3 they will be able to see how many more points they need to reach level 4

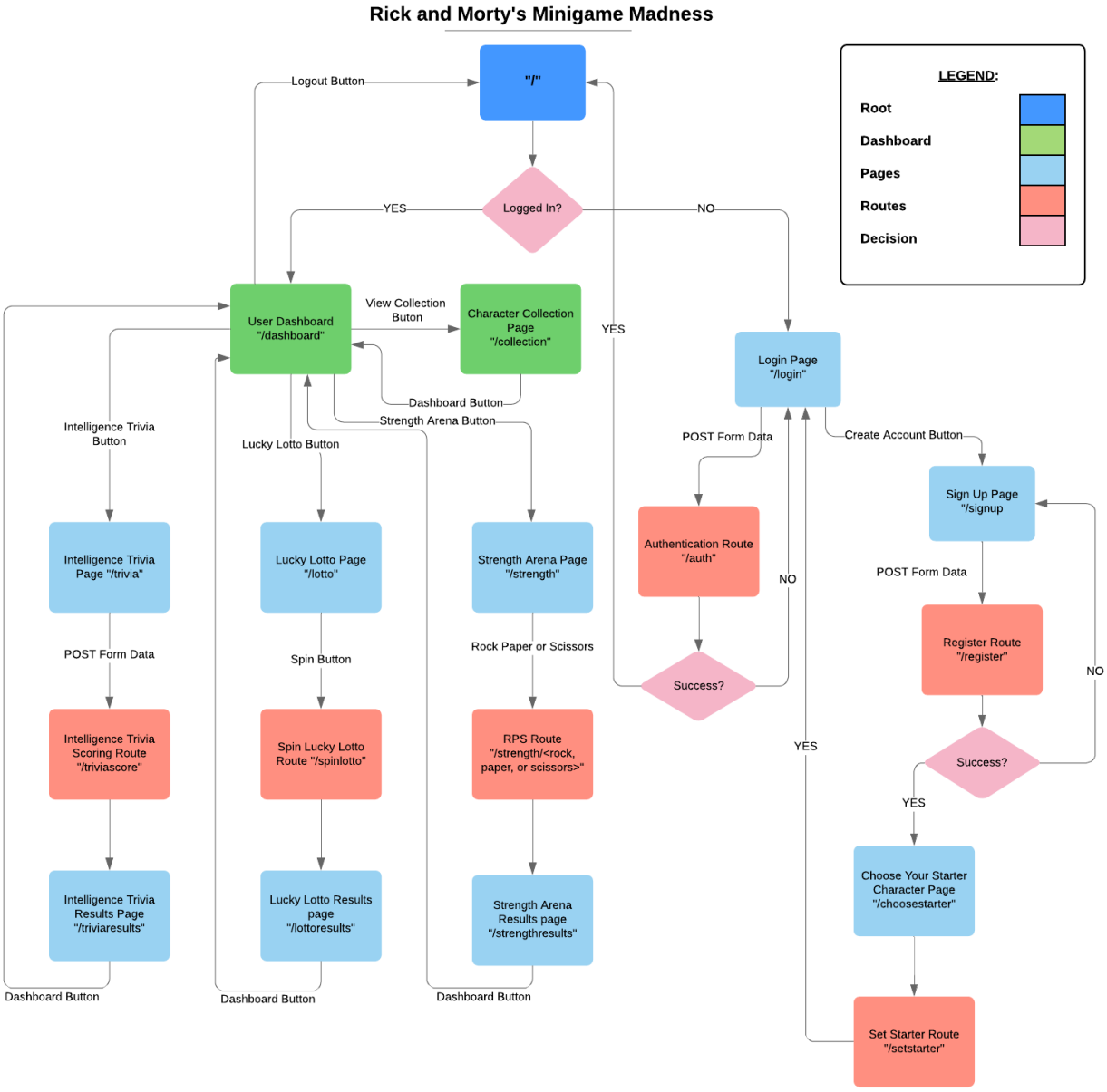
List of APIs:

1) Rick and Morty API
    a) *Quota:* 10,000 requests/day
    b) *Entry includes:* name, location, image
1) Open Trivia API
    c) *Quota:* 50 questions in one call
    d) *Entry includes:* category, difficulty, type, question, answer (correct & wrong)
2) SuperHero API
    a) *Quota:* None to be found
    b) *Entry includes:* name, aliases, power stats, image

Component Map:



Site Map:


Rick and Morty's Minigame Madness
"/"
Logout Button
Logged In?
YES
NO
LEGEND:
Root
Dashboard
Pages
Routes
Decision
User Dashboard "/dashboard"
View Collection Buton
Character Collection Page "/collection"
Dashboard Button
Strength Arena Button
Lucky Lotto Button
Intelligence Trivia Button
Intelligence Trivia Page "/trivia"
POST Form Data
Intelligence Trivia Scoring Route "/triviascore"
Intelligence Trivia Results Page "/triviaresults"
Dashboard Button
Lucky Lotto Page "/lotto"
Spin Button
Spin Lucky Lotto Route "/spinlotto"
Lucky Lotto Results page "/lottoresults"
Dashboard Button
Strength Arena Page "/strength"
Rock Paper or Scissors
RPS Route "/strength/<rock, paper, or scissors>"
Strength Arena Results page "/strengthresults"
Dashboard Button
YES
Login Page "/login"
POST Form Data
Authentication Route "/auth"
Success?
NO
YES
Create Account Button
Sign Up Page "/signup"
POST Form Data
Register Route "/register"
Success?
NO
YES
Choose Your Starter Character Page "/choosestarter"
Set Starter Route "/setstarter"

Roles:

> Kevin Cai (KC):Project Manager, Director of Authentication

> Tammy Chen (TC): Intelligence Trivia Agent

> Kazi Jamal (KJ): Lucky Lotto Manager

> Taejoon Kim (TK): Strength Arena Builder

I. Minimum Viable Product
   A. Authentication: (KC) Manage creating new users, and authenticating users when they want to log in.
      1. We will take the login system we wrote for the last project and enhance it to work with the functionality of this project (such as choosing a starter character upon registration).
   B. Dashboard: (KC) Will display the user's statistics and the minigames on the dashboard page
   C. Intelligence Trivia: (TC) Will be using Open Trivia API to increase the intelligence statistics of the user
   D. Lucky Lotto: (KJ) Will create a slot machine to get a new character (Rick and Morty API) and increase luck stat; requires gold to play
   E. Strength Arena: (TK) Will create a rock-paper-scissors simulator to enact a strength arena; will update user stats if succeeded

II. Extra Features
   A. Allow user to change to other characters from their collection
   B. Achievements for each minigame
      1. After the user has surpassed a certain threshold in the minigame, they will receive an achievement associated with the minigame.
      2. These achievements will be displayed on the dashboard page.
   C. More minigames
      1. Card Game using Deck of Cards API