Period 9's Team KungFuTea

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Information:

General Description:

KaFooT is a educational game website that derives its inspiration from Kahoot. The user can select the trivia genre from a list of categories that are pre-defined or user-defined. The user gains points based on whether or not the correct answer is selected within a set time period; there is no penalty for answering wrong. The user has the option of reading more about the current question after the answer has been selected if desired.

Game:

When presented with a question, the user has 3 seconds where the answer choices are disabled to read the questions and the answer choices. The answer choices are presented in a random order. After 3 seconds have passed, the answer choices are available to click on. The user gains points based on how quickly they answer the question correctly. There is no penalty for choosing a wrong answer. Once any of the four answer choices are selected, the buttons are then disabled until the selection-phase time period of 7 seconds has passed.

Not Fully Implemented: Throughout this process, there are 15-30 bot "accounts" that play along with you. These select the correct answer 90% of the time. The time that they take to select the answer is randomly generated between 0-7 seconds after the selection-phase is opened. Based on the user-selected bot difficulty, the time the bots take to answer is weighted towards 0-2.99 seconds, 3-5.49 seconds, or 5.50-7 seconds for hard, normal, and easy respectively.

After 5 questions have been presented and answered, the game will end and a leaderboard is shown. The user's points and question category are recorded in the leaderboard.

Account:
The user can create an account with a unique username and a password of choice. The password will be hashed to add some security.
When a user is not signed up, an error is displayed.
When a user has the wrong password, an error is displayed.
When a user registers, their username and hashed password are added to the user database and a userrecord-<USERNAME> table is created (which is why the usernames must be unique).
At the user account page, the user can change their display name and reset their stats.

- Done using a database

User Record:
A user record can be navigated to where the user can check up on their records and categories of those records.
A table is displayed along with the category of the entry, their rank for that entry, and the score they got for that entry.
A user can delete any single entry of their userrecord if desired. (Will have a confirmation box).

- Done using a database

Own Trivia Category:
The user can create their own trivia category if wanted. They will be required to input a category name, 10 questions, and 4 possible "answers" for each question.
For the "answer" inputs, the first one should always be the correct answer (although it the order will be randomly displayed to the user during the actual game phase).

- Done using javascript? (json formatted data).

Databases:

Table	**Values**
users	username TEXT PRIMARY KEY, password TEXT NOT NULL
userstats-<USER>	category TEXT PRIMARY KEY, rank INTEGER, score INTEGER

- username: a user's unique username
- password: a user's password. (encrypted)
- category: category of that "run"
- rank: rank achieved in that "run"
- score: score achieved in that "run"

Maps and Innards:

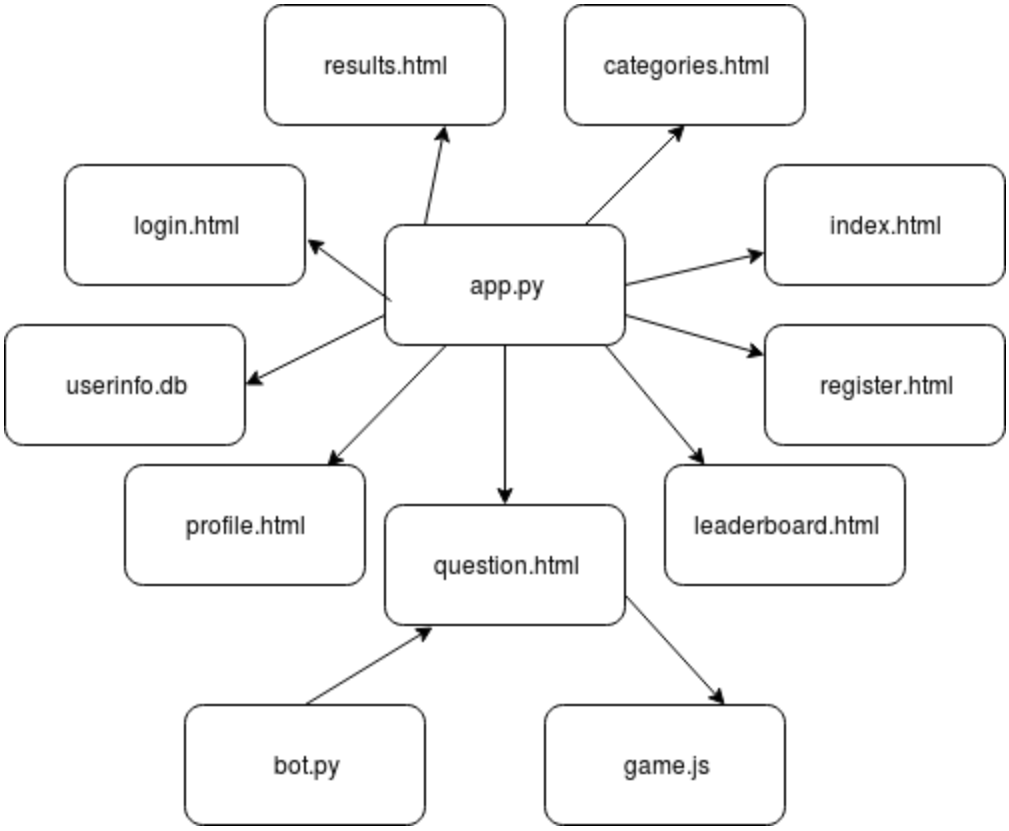
Components:

- Open Trivia DB (API): Pre-defined set of questions / answers
- Wikimedia (API): Learn more about the question
- Sqlite Database: Used to store user information
- Templates:
    - categories.html
        - List of categories of questions you can choose from
    - frame.html
        - Frame for all pages. Contains navbar, footer, and generic css / js.
    - index.html
        - Homepage. Description of website.
    - login.html
        - Login page.
    - profile.html
        - View the user's profile. Contains option to change password.
        - User statistics. List of all "runs" of the game. Contains option to delete an entry in the list.
    - question.html
        - The trivia page. Display questions + answer choices
    - register.html
        - Registration page.
    - results.html
        - Results of the game just played. Contains all users + their score.
    - settings.html
        - Change password form
- Functional Code
    - index.js
        - addCount(): Adds a count to the counter and updates the displayed div.
        - boldCounter(): Returns a bolded text div.
        - body.onkeydown(): Every time you press x or z, add one to the counter.
    - question.js
        - rng(min, max, skew): Generates a random number between min and max with the given skew factor.
        - assign_points(time): Returns how many points to give based on time. Super secret algorithm included.

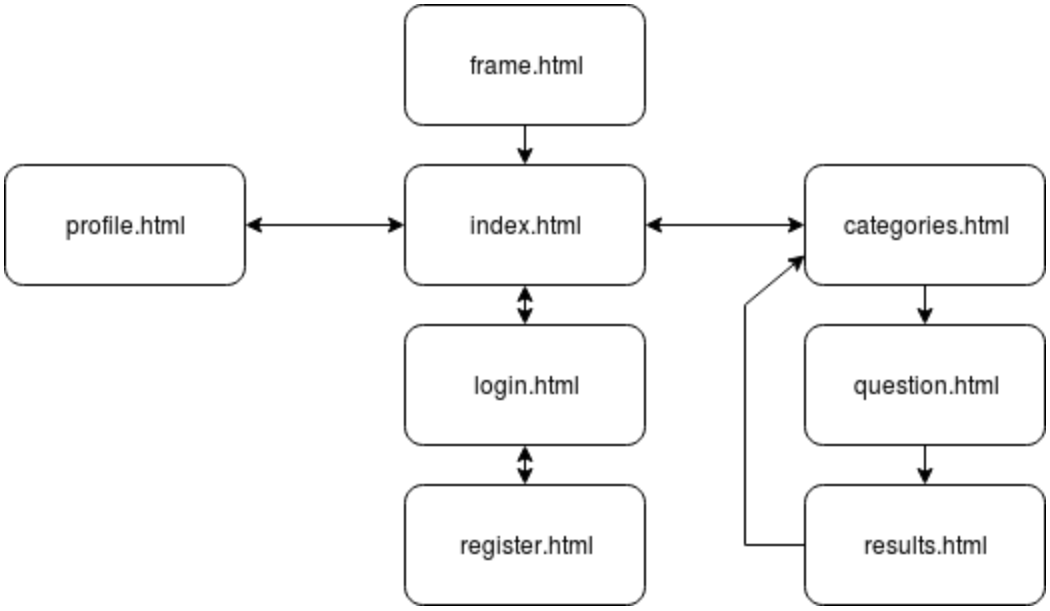
        - q_and_a(ver): If a answer choice is clicked, update the current time variable. If no ver is given, wait for the user to click an answer choice and print stats.
        - disable_answer_buttons(): Disables answer choices
        - enable_answer_buttons(): Enables answer choices
        - time_now(): Returns current time
    - app.py
        - index(): Renders homepage.
        - login(): Renders login page.
        - logout(): Logs the user out.
        - register(): Registers the user (adds to the users database).
        - categories(): Renders the list of categories page.
        - question(): Renders the game page.
        - results(): Renders the game results page.
        - profile(): Renders the user profile page.
    - auth.py
        - encrypt(password): Hashes the entered string password using the sha224 algorithm.
        - new_user(): Adds a user to the users database. Password is encrypted before being stored.
        - verify(): Verifies if the password entered at login is the same as the one in the database.
        - user_exists(): True or false depending on whether or not there exists a password entry for a given username (Returns false if the username exists).
        - logged_in(): Is the user logged in?
        - login(): Log the user in (using session).
        - logout(): Log the user out.
    - database.py: Creates a user database if it doesn't already exist
        - adduser(username, password): Adds the user to the database. Returns True if user is successfully added to the database. Returns False otherwise.
        - empty_db(): Checks if the database is empty. True if empty, False otherwise.
        - get_password(username): Returns the associated password given a username. Returns None if there doesn't exist a password.
        - change_password(username, password): Changes the password of the logged in user.
    - game.py: Game logic + Bot logic
        - assign_points(time): Returns the amount of points to give based on the super secret algorithm.
        - Bot(object): Bot 'object' with:

        - __init__(self, bot_id, difficulty): Initializes the bot with an id and difficulty
        - responses(self): Returns a dictionary of 10 keys+values
        - gen_correct_points(self, difficulty): Generates points based on a skewed time to answer
        - ran_correct(self): Returns True 90% of the time
        - gen_ran_num(self, min, max, skew): Returns a skewed time between min and max
        - total_points(self, question_num): Returns the total points counted to that question. Questions wrong are not counted.
    - gen_bots(difficulty): Generates 20 bots with the given difficulty.
    - to_json(dic): Returns the converted to json dictionary.
- trivia.py
    - call_api(category): Calls the API and gets a relevant question + answer choices.
    - randomize(d): Randomizes the order of the answer choices.
    - correct_answer(d): Returns the correct answer given a set of choices.

Component Map:



Site Map:



Work Allocation:

Person	**Tasks (Highest -> Lowest priority)**
Kyle Lin (PM)	Those things nobody else wants to do, bug fixes, databases, bot logic, Wikimedia API
Tina Chen	Bootstrap, javascript, html
Fabiha Ahmed	Trivia API, app.py