Checkers Project Design Document

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Game Functionality:
- Checkers - 8x8 board with two players
- Played on the same device, taking turns
- P1 goes, then P2, etc.
- Users get to choose the Emoji for their custom checkers pieces
- Background image from NASA changes daily to make checkers more fun!
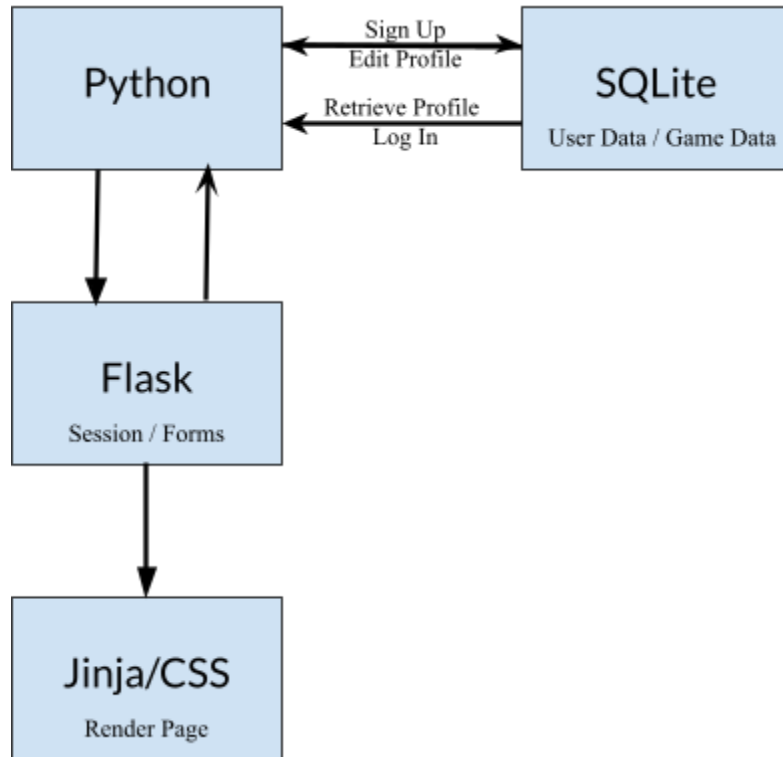- User assigned random profile picture after creating account

File Tree:

```
flask_app
├── __init__.py
├── users.db
├── templates/
│   ├── layout.html
│   ├── index.html
├── static/
│   ├── css/
│   │   ├── style.css
```
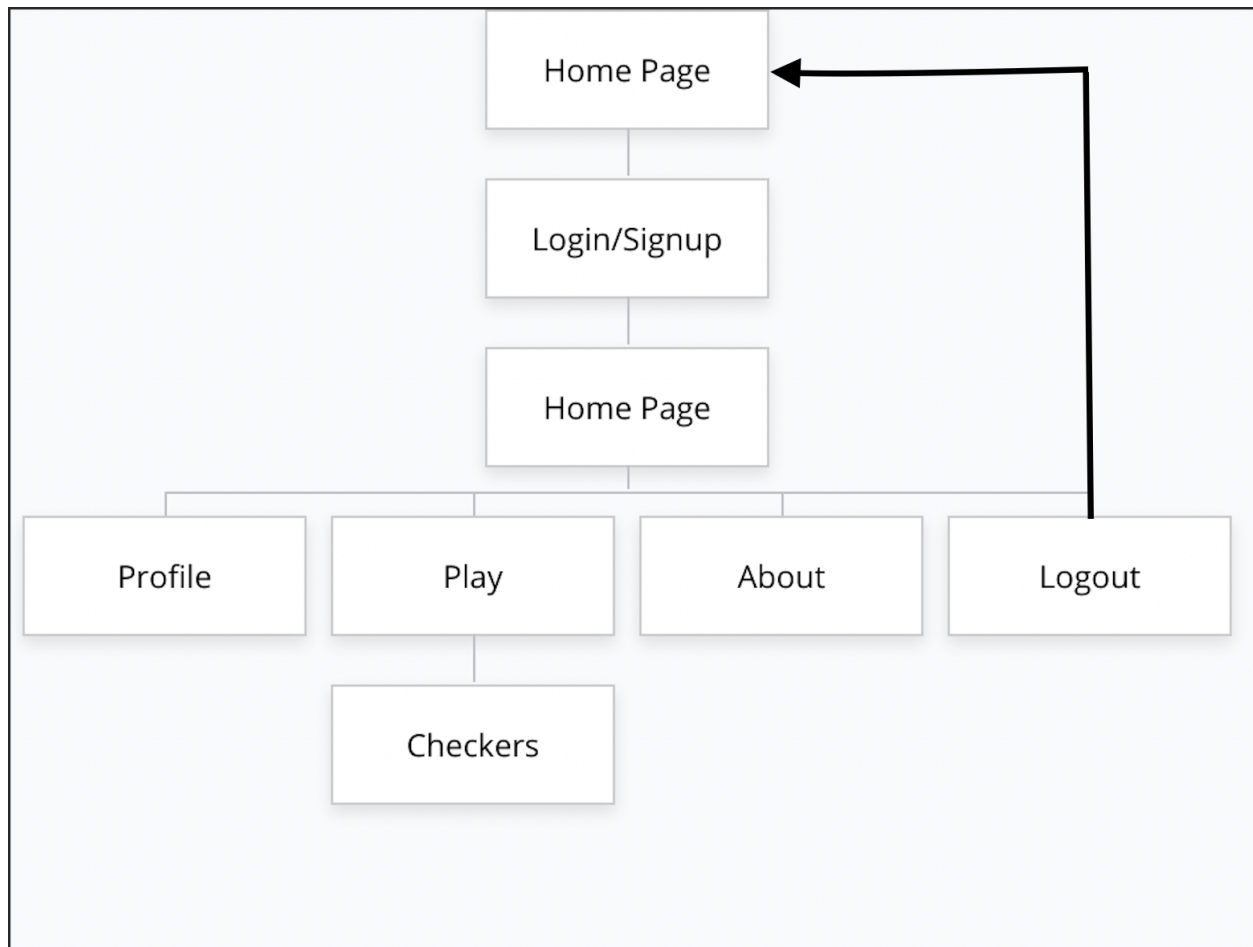
Program Component List:
- Python
  - The python app would be used for the creation of the database itself and for inserting data / pulling data from it.
- SQLite
  - We use SQlite to interact with our database. The commands used in the python app would come from this component.
- Jinja
  - Jinja takes the data from the backend for the website contents, page title, and other bits and puts them where we want in our webpage.
- Flask
  - Flask serves the actual web pages jinja will be rendering (does network stuff).
  - Session allows for the site to allow a logged-in user to play a game of checkers online, against other people. If they are not logged in, then they will have to play against another player, locally.
- CSS
  - Bootstrap to have a coherent theme

      ○   Custom CSS to fine tune certain elements of the front-end
          ■   Create the 8x8 checkerboard

Component Map:

```
┌─────────────┐      Sign Up          ┌─────────────┐
│             │ ◄──── Edit Profile ──►│             │
│   Python    │                       │   SQLite    │
│             │   Retrieve Profile    │             │
│             │ ◄──── Log In ─────────│ User Data / Game Data │
└─────────────┘                       └─────────────┘
      │  ▲
      ▼  │
┌─────────────┐
│   Flask     │
│             │
│Session / Forms│
└─────────────┘
      │
      ▼
┌─────────────┐
│  Jinja/CSS  │
│             │
│ Render Page │
└─────────────┘
```

Front-End Sitemap:

Database Organization
- Tables:
    1. **USERS**

ROWID	Username	Hashed Password	URL to Profile Picture (random dog image)

API's:
- Emoji API - https://github.com/stuy-softdev/notes-and-code/blob/main/api_kb/411_on_Emoji.md
    - Used as the checker pieces
    - Prompt user to choose from a selection of emojis
- APOD - https://github.com/stuy-softdev/notes-and-code/blob/main/api_kb/411_on_APOD.md
    - Used to grab daily image for NASA for site background
- Dog Breeds API - https://github.com/stuy-softdev/notes-and-code/blob/main/api_kb/411_on_DogBreeds.md
    - Used to randomly generate a profile image

Front-End: Bootstrap
- Looks nicer
- More documentation

Member Assignments:
- Cameron: Working on backend stuff and database.
- Kevin: Working to create frontend HTML templates and then CSS for later.
- Han: Project Manager + database.