Hicago

by hicago - Pd 9
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Website Purpose:
We plan on creating our own version of the popular online game Pokemon showdown. The API we plan on using is PokeAPI. The user will choose a team of 6 Pokemon to face off against an infinite number of bots until the user loses. We will implement a turn-based system.

Tasks:
- Displaying a functional teambuilder:
    - Allow user to create/edit their teams
- Implement Pokemon's moves and their effects
- Implement Pokemon's abilities and their effects
- Allow user to battle using built team
    - Checks to see if team is valid before initiating simulation; else display an error message

APIs:
PokeAPI (Documentation)

Features
Teambuilder
- List all previously built teams
- 6 Form Panels (for each Pokemon in a team of 6)
    - Input list for Pokemon
    - Select list for inputted Pokemon's associated abilities
    - Input list for inputted Pokemon's associated moves
    - Display inputted move's description
    - Radio list for gender selection
    - Input counter for happiness (min 0, max 255)
    - Stat Panel: input EV counter for each of 6 stats (HP, Atk, Def, SpAtk, SpDef, Speed) (min 0, max 252; total for all stats 508)
    - Display base stats and calculated (real) stats, and total remaining EV points

Battle Simulator:
- Checks to see if the user's selected team is valid before initiating the battle (does the total EV spread amount to 508 or less? is each Pokemon on the team valid (up to Generation 5)? are the Pokemons' movesets valid?)
- Turn-based combat
- Move selection phase:
    - The user click desired move from moveset or different Pokemon to switch into from team
    - Simple bot that selects its turn based on some sort of "preference factor" calculated from things like type effectiveness, move power, etc.
- Moves + Abilities: implemented effects (if any)
- Display appropriate sprites and functional health bars (and other related info)
- Display appropriate movesets for current Pokemon and their PP
- Save states of Pokemon when switching out/fainting
- Player wins if all of the opponent's team has fainted

(Direct user interactions on the site)
- ❖ Login/Registration: Each user will need to make an account/log in to access site
- ❖ Team Building: The user can build their own desired team from a stored list of Pokemon, associated movesets, and associated abilities. The user can also edit saved teams.
- ❖ Battle: The user can battle bot trainers. The players select their move each turn until the entirety of one player's team has fainted.
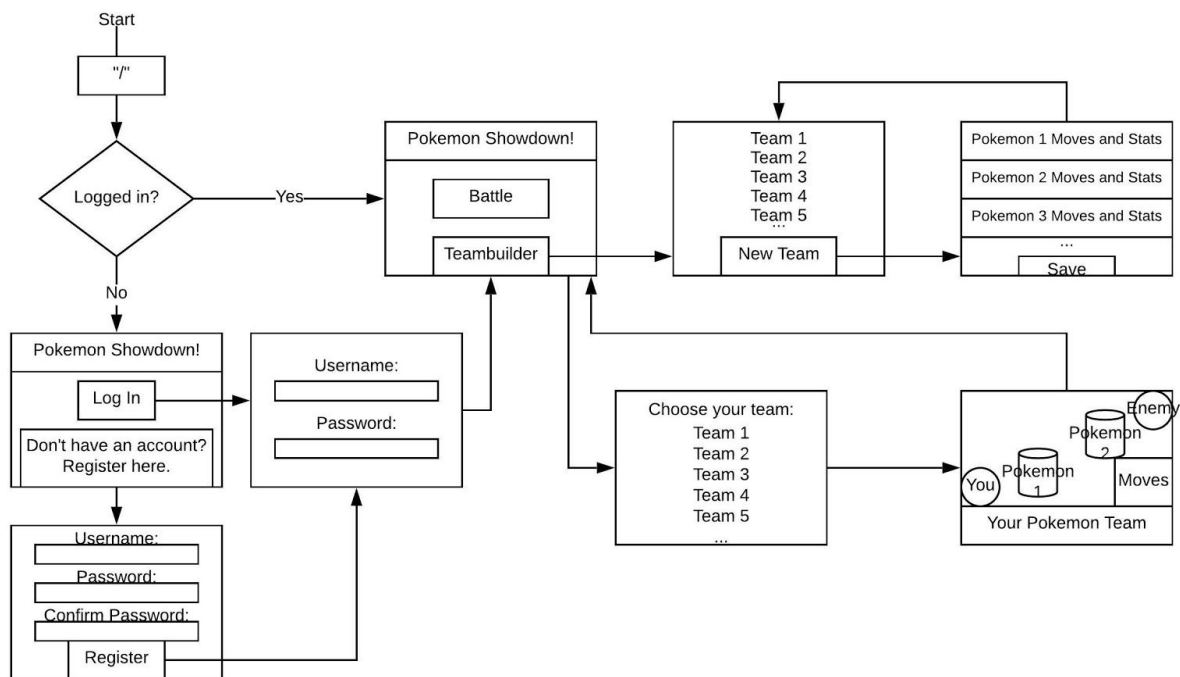
Site Pages:
Parent page that contains navbar - buttons vary depending on login status/page
- ➢ Login Page
    - ○ Credentials fields - checks username and password exists/matches
        - ■ Redirects back to the home page
    - ○ Register button - links to the registration page
- ➢ Registration Page
    - ○ Credentials fields - asks for username and matching passwords
        - ■ Redirects back to login page
- ➢ Home Page
    - ○ Large jumbotron heading
    - ○ Teambuilder
        - ■ Redirects to teams page
    - ○ Battle
        - ■ Allow user to select team(s) to battle with
        - ■ Checks to see if selected team is valid
            - ● If true, redirect to battle page
            - ● If false, redirect to home page and display an error message
- ➢ Teams Page
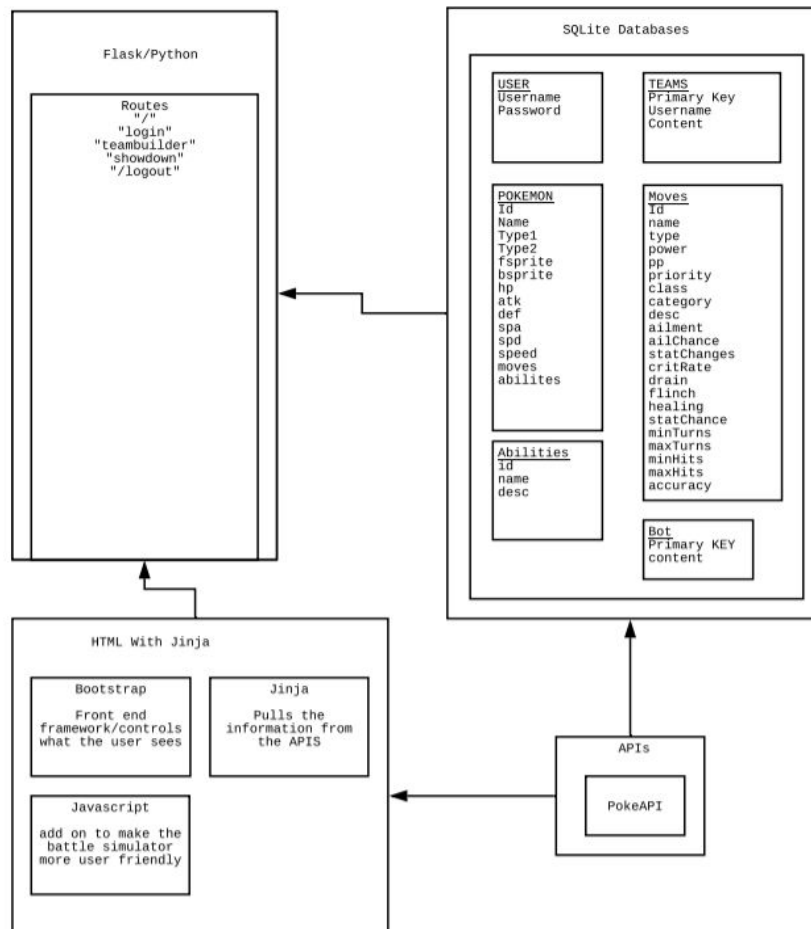   - ○ Lists all the teams created by the user

- - - Selecting one of these will redirect you to the teambuilder page with appropriately filled in fields to allow for editing
    - Create a new team
      - Redirects to teambuilder page with empty fields
- Teambuilder Page
  - Pokemon input
    - Display autocomplete results based on user input from datalist of the names of all Pokemon stored in the database
  - Ability select
    - Display chosen Pokemon's associated abilities
    - Set to first ability by default; clicking on it allows the user to change to an alternate ability (if that Pokemon has one)
  - Moveset input
    - 4 input fields
      - Display autocomplete results based on user input from datalist of the names of all selected Pokemon's moves stored in the database
  - Gender radio input
    - Male/Female option for each Pokemon
  - Happiness input
    - Counter set to 255 by default determining happiness value of the Pokemon [0 (lowest) - 255 (highest)]
  - Stats
    - Displays the selected Pokemon's base stats, as well as calculated real stats that update based on user EV inputs
    - EV Inputs
      - Slider/Counter for each of the different stats (HP, Atk, Def, SpAtk, SpDef, Speed) all having a scale of 0-252
      - Total amount of EV points the user can add to a Pokemon is 508 (Ex. 252 Atk, 252 Speed, 4 HP = 508)
- Battle Page
  - Displays the Pokemon battle
    - Displays the user's current Pokemon's back sprite, health, status, gender, name, etc.
    - Display's opponent's current Pokemon's front sprite, health, status, gender, name, etc.
    - Button Inputs
      - Displays the 4 moves (name and PP) of the current Pokemon and clicking on one will submit that move as its turn (JS)
      - Displays the players' teams and clicking on one of the members will submit switching into that Pokemon as its turn (JS)
      - The turn will process after inputs are made and update the displays (JS)

- ■ Saves the states of the Pokemon during the battle
- ➢ Logout Page (backend work: logs out the user and redirects to root)
- ➢ Add Team (backend work: adds a built team to user's Teams and redirects to teams page)

Site Map

Start

"/"

Logged in? — Yes →

Pokemon Showdown!

Battle

Teambuilder

No

Pokemon Showdown!

Log In

Don't have an account? Register here.

Username:

Password:

Username:

Password:

Confirm Password:

Register

Team 1
Team 2
Team 3
Team 4
Team 5
...

New Team

Pokemon 1 Moves and Stats

Pokemon 2 Moves and Stats

Pokemon 3 Moves and Stats

...

Save

Choose your team:
Team 1
Team 2
Team 3
Team 4
Team 5
...

Enemy Pokemon 2

You Pokemon 1

Moves

Your Pokemon Team

Component Map

Flask/Python

Routes
"/"
"login"
"teambuilder"
"showdown"
"/logout"

SQLite Databases

USER
Username
Password

TEAMS
Primary Key
Username
Content

POKEMON
Id
Name
Type1
Type2
fsprite
bsprite
hp
atk
def
spa
spd
speed
moves
abilites

Moves
Id
name
type
power
pp
priority
class
category
desc
ailment
ailChance
statChanges
critRate
drain
flinch
healing
statChance
minTurns
maxTurns
minHits
maxHits
accuracy

Abilities
Id
name
desc

Bot
Primary KEY
content

HTML With Jinja

Bootstrap

Front end
framework/controls
what the user sees

Jinja

Pulls the
information from
the APIS

Javascript

add on to make the
battle simulator
more user friendly

APIs

PokeAPI

#3: Database Layout Diagram

USER

username TEXT	password TEXT
cchu	p
PokeLover67	pikachu

TEAMS

PRIMARY KEY	username TEXT	content BLOB
0	cchu	OG SQUAD ((team name)) Pikachu (M) Ability: Static Happiness: 245 EVs: 16 HP / 128 Atk / 4 Def / 128 SpA / 4 SpD / 228 Spe - Thunderbolt - Quick Attack - Iron Tail - Electro Ball … Charizard (F) Ability: Blaze Happiness: 254 EVs: 4 HP / 252 Atk / 252 Spe - Flamethrower - Thunder Punch - Earthquake - Dragon Dance

BOT TEAMS

PRIMARY KEY	content BLOB
0	Pikachu Ability: Static - Thunderbolt - Quick Attack - Iron Tail - Electro Ball
1	Charizard Ability: Blaze - Flamethrower - Thunder Punch - Earthquake - Dragon Dance

POKEMON

id INTEGER	name TEXT	type1 TEXT	type2 TEXT	fsprite BLOB	bsprite BLOB	hp INTEGER
1	Bulbasaur	Grass	Poison	https://raw.githubusercontent.com/PokeAPI/sprites/master/sprites/pokemon/1.png	https://raw.githubusercontent.com/PokeAPI/sprites/master/sprites/pokemon/back/1.png	45

atk INTEGER	def INTEGER	spa INTEGER	spd INTEGER	speed INTEGER	moves TEXT	abilities TEXT
49	49	65	65	45	Razor-wind,swords-dance, … ,confide	chlorophyll,overgrow

MOVES

id INTEGER	name TEXT	type TEXT	power INTEGER	pp INTEGER	priority INTEGER	class TEXT
85	Thunderbolt	electric	90	15	0	special

category TEXT	desc TEXT	ailment TEXT	ailChance INTEGER	statChanges TEXT	critRate INTEGER	drain INTEGER
damage+ailment	Has a $effect_chance% chance to paralyze the target.	paralysis	10	{null}	0	0

flinch INTEGER	healing INTEGER	statChance INTEGER	minTurns INTEGER	maxTurns INTEGER	minHits INTEGER	maxHits INTEGER	accuracy INTEGER
0	0	0	{null}	{null}	{null}	{null}	100

ABILITIES

id INTEGER	name TEXT	desc TEXT
1	stench	Has a 10% chance of making target Pokémon flinch with each hit.

Minimum Viable Product
- Full implementation of API
- Working teambuilder that allows for saving and editing
- Working battle simulator that allows the user to play against a bot

Extra Features
- Local Versus
- Leaderboard
- Items
- Natures
- IVs
- Shinies
- Hidden Power Types

Work Division
- Brandon Chen:
  - Front end design and ability implementations, database handling
- Kenneth Chin (PM)
  - Front end design and move implementations
- Calvin Chu
  - Teambuilder, battle simulator, bot behavior, database handling