University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 1

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your email address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

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Project description:
The domain of our project is video game character and inventory management.

The main focus of the project will be describing video game characters called Pokémon through their in-game statistics, types, moves, abilities, and evolution chains. Each Pokémon can only evolve from one Pokémon but can evolve to multiple different Pokémon. For example, a Pokémon called Gloom evolves from Oddish but can evolve to Vileplume or Bellossom. Alternatively, some Pokémon can have no evolutions at all. Pokémon will need to meet certain conditions before they can evolve; these conditions are captured in the Evolution Requirement entity.

Our database will differentiate between two categories of Pokémon, Wild Pokémon and Trainer Pokémon. Wild Pokémon can be found in routes and regions, while Trainer Pokémon will be associated with Trainers and their collections. Trainers are video game characters that own collections of Pokémon and items that can be used on the Pokémon. Please refer to the comments section below for further details on each entity.

Database specifications:
The database will allow users to search for Pokémon based on stats, name, Types, Abilities, and Moves, as well as locate Wild Pokémon by Routes, Regions, terrain, weather, and time of day. It also supports queries on Type, Move, and Ability by their names to analyze battle effectiveness and queries on Route and Region by their names also to explore the Pokemon world.

For those interested in trading or battling, the system enables searching for Trainers who own specific Trainer Pokémon or Items based on Region, their Collection of Trainer Pokemon or item list, making it easier to find trade partners or opponents. Additionally, our database models the evolution chain for each Pokemon so users can also navigate this chain to find descendants or ancestors of each Pokemon and find specific evolution requirements to know how to get to each part of the chain.

Comments: Entity Explanations

- Pokemon
    - Contains attributes (Attack, Defence, Speed, Special Attack, Special Defense) related to the specific pokemon's base statistics.
    - They are identified by their pokedex id.
    - Total = Attack + Defence + Speed + Special Attack + Special Defense
    - Pokemon are one of two specific kinds via an ISA relationship
        - Wild Pokemon
            - These are normal versions of pokemon, they are out in the wild and can be caught by a trainer.
            - Their spawn rates, time, weather as well as their route determine where you might find them.

        - Trainer Pokemon
            - These are unique versions of pokemon, they were caught and are trained by some trainer.
            - They have attributes like level, experience, name, height, and weight.
- Trainer
    - A trainer is a person who has a trainer_id. They have a name, rank, items, place where they live, and possibly some collections.
- Collection
    - A collection is a set of trainer pokemon owned by a trainer. It has a name, category (the collections may be used for fighting, or for personal pets), and an id.
    - This is a weak identity, meaning that a collection cannot exist without being owned by some trainer.
- Item
    - An item is identified by its name. It has a category, like healing item, battle item, or a stone, and an effect. An item in the healing category may have the effect: raise one Pokemon's HP by 10 points, apply candy to level up.
    - Item is related to Trainer to show who can trade the item. They are not mapped onto routes because the other way to obtain them is through doing quest (game only) or finding hidden items, which are hidden and random.
- Region
    - A region is a large area of land.
    - It is identified by its name.
    - It has a climate attribute that describes the weather in the region.
    - Examples of themes: ethics, sports, genetics, ecology, history, etc.
- Route
    - Connections between regions.
    - Identified by its name.
    - Terrain type and difficulty level indicate what route looks like and the usual level of pokemons spawned.
    - Terrain type example: cave, field, etc.
- Evolution Requirement
    - This is a Pokemon to Pokemon relationship defining how and when a pokemon evolves.
    - If a Pokemon can continue to evolve, when it reaches the specified threshold, it will evolve to a new pokemon. The method explains how evolution occurs, and the name identifies it.
- Type
    - Each Pokemon is a single-type or dual-type.
    - Each type has a certain weakness, resistance, and name.
    - Weakness is the type that it is weak against, so it will receive double damage or 25% more when attacked from that type.

    - Resistance is the type that it is resistant to, so it will receive half damage or 0 as it is immune when attacked from that type.
    - For now, Pokedex will only show types for which you want to use this pokemon for matchup or don't want to use this pokemon.
- Move
    - Pokemons can have a number of moves.
    - They are identified by their name.
    - They have categories (physical, special, status), effects, and the scale of those effects.
- Ability
    - Similar to Moves, Pokemon can have a number of abilities.
    - They are identified by their name and have an effect and the scale of their effect.

AI acknowledgement:
We used ChatGPT to ask about possible topic ideas. This is the original prompt:
Blacklist – Some project topics that you may not use are:
● *Employees and departments (projects, managers, employees) –textbook example*
● *A bookstore or library (used in previous semesters)*
● *Car rental service (used in some previous semesters)*
● *MP3 storage (used in some previous semesters)*
● *A school setting (students, instructors, departments, courses, etc.) – We're going to use this as a case study in various parts of the course.*
● *Banking (accounts, customers) – another common example*
● *Airlines (flights, planes, passengers, destinations) – another common example used by many textbooks*
● *Retail sales (customers, products, orders, line orders) – another common example.*
● *Hospital or medical clinic – again, common*
● *User management (e.g., gym membership management/tracking activities in a gym) – again, common*
● *Sports league – again, common*
● *Job board – again, common*
● *Event management – again, common*
● *Any other examples presented in the course*
These are the blacklisted projects for my database project, what should I choose for my topic that isn't one of these

None of the results were particularly helpful except for one that mentioned movies and TV, which inspired our first idea, Netflix. This would involve entities like Profile, Movies, Watchlists, and so on. When we brought this idea to our instructor, he told us that it was too close to blacklisted topics. So, we scrapped the idea. Nam attended office hours to get suggestions, and he then came up with an idea to create a Pokedex but more advanced. We expanded on the idea with entities such as Trainers, Regions, and Routes, which are not included in a normal Pokedex.

Pokedex
ER diagram