

Pokémon Team Generator

Non-Interactive Game Analyzer

Team:

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Theme:

In this project, we explored the theme, “AI as Analyst” or “AI as Advisor” which analyzes data of each Pokémon from the game and gives the players suggestion of how to create a good Pokémon team. The result team generated by this program will not only be good in the battle but also match the player’s preferences of their favorite Pokémon in mind.

Overview:

This program is part analyzer, part planner. The Pokémon team generator acts as an AI advisor and an AI analyst that provides suggestions on good Pokémon teams with a good synergy and diversity so that the players can enjoy the game more with a powerful combination of Pokémon.

For players who want to play Pokémon but have not yet experienced the world of Pokémon, they will probably be overwhelmed by the many different Pokémon and not know what Pokémon to catch and train. This AI Pokémon advisor/analyst is designed to be an assistant that can provide insight and suggestions for the Pokémon world. Instead of spending a lot of time doing research on Pokémon and planning out what to do in the game rather than playing the game itself, our Pokémon advisor/analyst can give suggestions by randomizing a viable Pokémon team that is still effective by taking into account Pokémon types, stats and style of play. At the same time, the player can learn about each Pokémon on the generated team by reading the analysis of their stats and type weaknesses provided on the side.

For veteran Pokémon players, they can find very useful suggestions by asking our advisor/analyst for help. These experienced enthusiasts may already have a few Pokémon candidates in mind, or want to face a challenge by having a really weak Pokémon on the team. Our understanding advisor/analyst will take the player’s preferences into account and generate the remaining Pokémon spaces. In addition, the user can also ask for help to analyze the team that he/she already built since the generator will show all the stats and type weaknesses of each Pokémon.

Novelty:

Looking at other Pokémon generators online, we only found two general results: a Pokémon team builder that gives you stats on a Pokémon team that you already made, and a randomized Pokémon team generator that doesn’t do any analyzing.

What we aimed for when designing this program was analyzing Pokémon synergy to create a good Pokémon team that works well together. If the player wants a few Pokémon on their team, the program will fill in the blanks.

The algorithm implemented in this system should be easily adaptable to generate teams/decks/parties in other games. Pokémon is just a simpler game to showcase its ability. The algorithm should be easily adaptable to other games such as League of Legends, Yu-Gi-Oh, or Final Fantasy. This way, the program can be useful in other cases too.

Value:

For beginners who want to explore the world of Pokémon or some other RPGs, this AI advisor/analyst helps them start, learn, and enjoy the game as fast as possible. In addition, for those who like to plan everything out in RPGs beforehand can save time by using this program.

On the game designer's side, this could be used to check balancing in a game and see if a character is underused or easily replaceable while another character is always needed for a good team. Furthermore, this could also be used to plan out new ideas or concepts based on the generated results.

Technology:

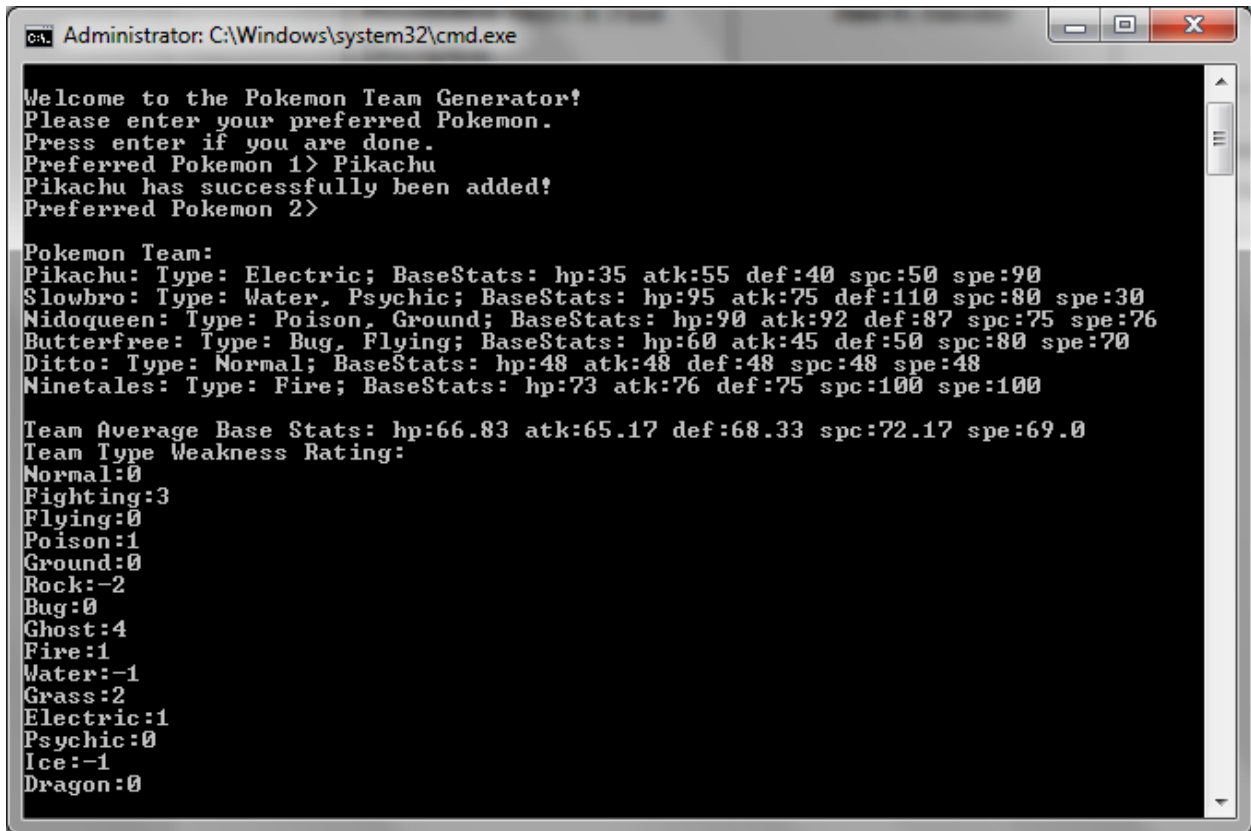
We realized that we haven't used Java since CMPS 12B, so we decided to use it for this project. The main way we interact with the program is through console commands. The data was stored in separate JSON files that were interpreted in the Java program and translated into data structures.

The primary algorithm we used was a sort of tree search. After deciding on the first Pokémon, the algorithm looks at branches for the next Pokémon and picks at random those that work. The analysis just comes from adding together numbers of individual Pokémon.

Breakdown: We did pair-programming on pretty much everything.

Tasks	Need to be finished by	Finished???
Proposal Decision: Decide which project to do from four different proposals	June 3, Wednesday	DONE
Make JSON data file that includes indexNum, species, types, baseStats, evos, prevo, and evoLevel of each Pokémon from Generation I.	June 5, Friday	DONE
JSON Interpreter & Data Structures	June 6, Saturday	DONE
Output Format & Algorithms	June 7, Sunday	DONE
Algorithms (cont.)	June 8, Monday	DONE
User Preference Feature, Presentation Slides & Final Description	June 9, Tuesday	DONE! :D

Momentos:



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Administrator: C:\Windows\system32\cmd.exe

Welcome to the Pokemon Team Generator!
Please enter your preferred Pokemon.
Press enter if you are done.
Preferred Pokemon 1> Pikachu
Pikachu has successfully been added!
Preferred Pokemon 2>

Pokemon Team:
Pikachu: Type: Electric; BaseStats: hp:35 atk:55 def:40 spc:50 spe:90
Slowbro: Type: Water, Psychic; BaseStats: hp:95 atk:75 def:110 spc:80 spe:30
Nidoqueen: Type: Poison, Ground; BaseStats: hp:90 atk:92 def:87 spc:75 spe:76
Butterfree: Type: Bug, Flying; BaseStats: hp:60 atk:45 def:50 spc:80 spe:70
Ditto: Type: Normal; BaseStats: hp:48 atk:48 def:48 spc:48 spe:48
Ninetales: Type: Fire; BaseStats: hp:73 atk:76 def:75 spc:100 spe:100

Team Average Base Stats: hp:66.83 atk:65.17 def:68.33 spc:72.17 spe:69.0
Team Type Weakness Rating:
Normal:0
Fighting:3
Flying:0
Poison:1
Ground:0
Rock:-2
Bug:0
Ghost:4
Fire:1
Water:-1
Grass:2
Electric:1
Psychic:0
Ice:-1
Dragon:0
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Console output of program. First part asks for preferred Pokémon (press enter with no input to finish), second part give you Pokémon team with individual stats, and last part gives you team stats with type weakness ratings.