

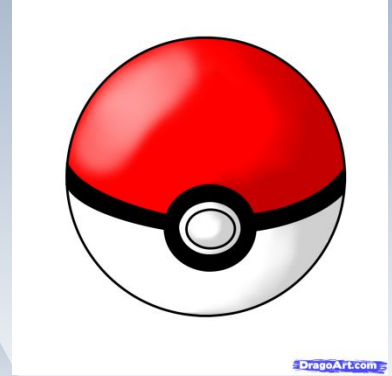


Predicting Combat Power (CP) for Unreleased Pokémon

David Ortiz DSI4 May 26, 2017

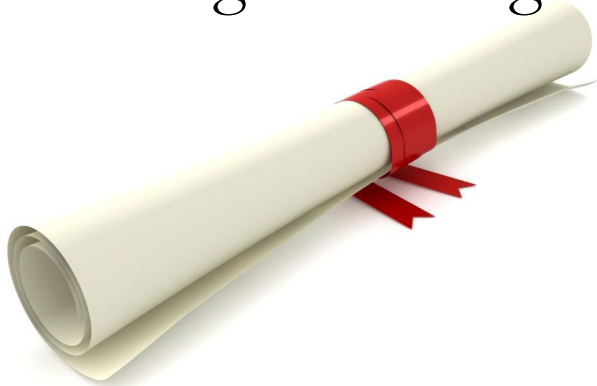
Agenda

- Background
- Problem statement
- Exploratory Data Analysis (EDA)
- Predictions
- Conclusion



Fun Facts

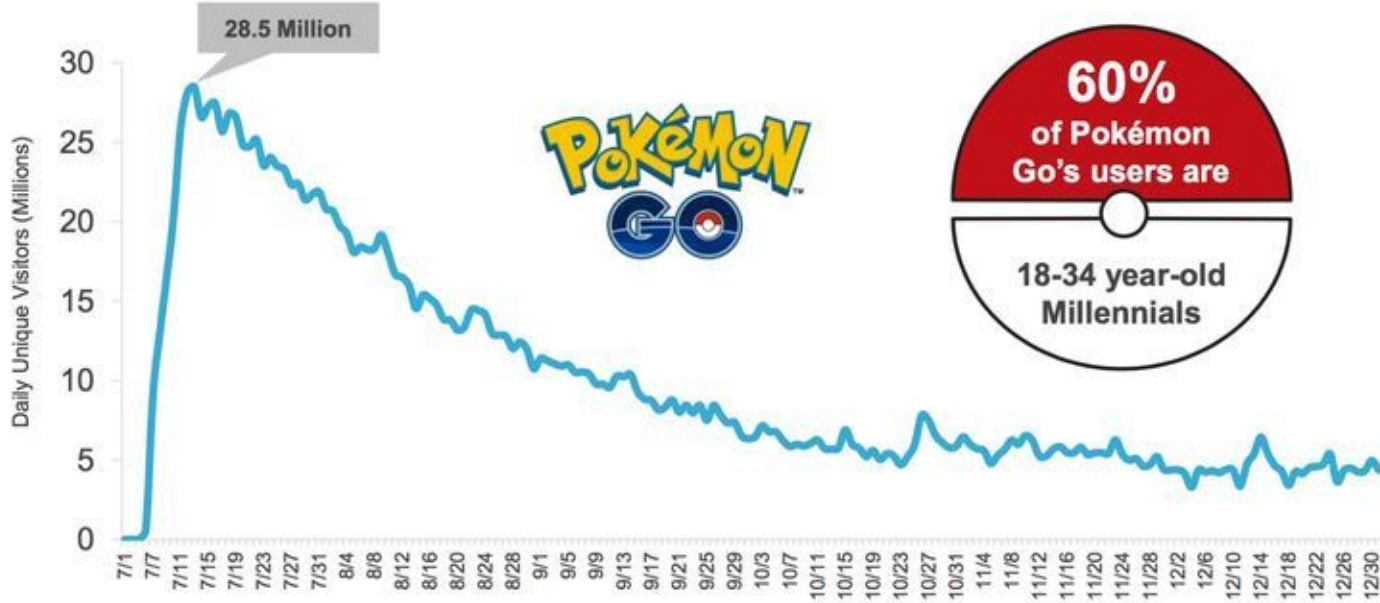
- Released on July 6, 2016
- About 650 million app downloads
- About 1 billion in revenue as of 1/31/17
- Largest demographic: Men 21-27 (7/26/16)



Pokémon GO was a mobile app phenomenon that quickly surged to attract a huge audience but has since come back down to earth

Pokémon GO: Daily Unique Visitor Trend

Source: comScore Custom Analytics, U.S., Age 18+, Jul 2016 – Dec 2016

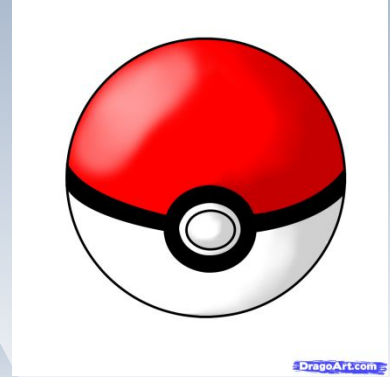


INSIGHT

Pokémon GO – a location-based augmented reality game – launched on July 6th, and in just a matter of days it was consistently capturing more than 20 million daily users. It peaked at 28.5 million daily users on July 13th and, though eventually tailing off, provided an important glimpse into the potential of augmented reality to engage users.

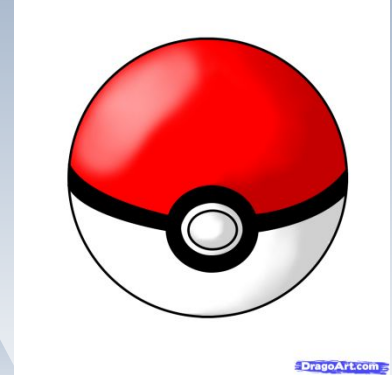
Problem Statement

- Pokémon GO is a widely played game and players “gotta catch’em all” in order to be the best. One aspect of the game is battling other players at gyms and the strength of a Pokémon is determined based on the combat power (CP). The higher the CP the better the Pokémon. Only two generations have been released to date and I want to predict the CP of future Pokémon.

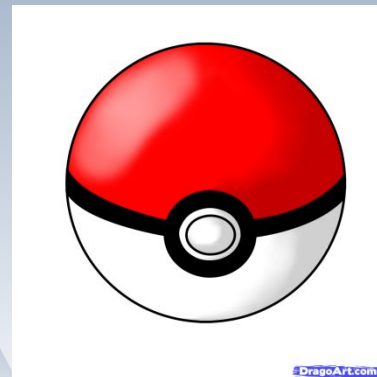


EDA: Datasets

- Data was made available on the kaggle website by Alberto and Aaron.
- Two datasets:
 - List of all Pokémon and their stats based on the video game.
 - List of all currently released Pokémon and their stats based on the Pokémon GO app.

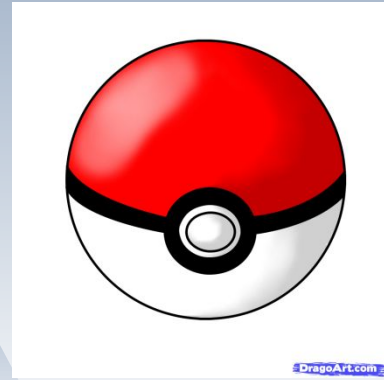
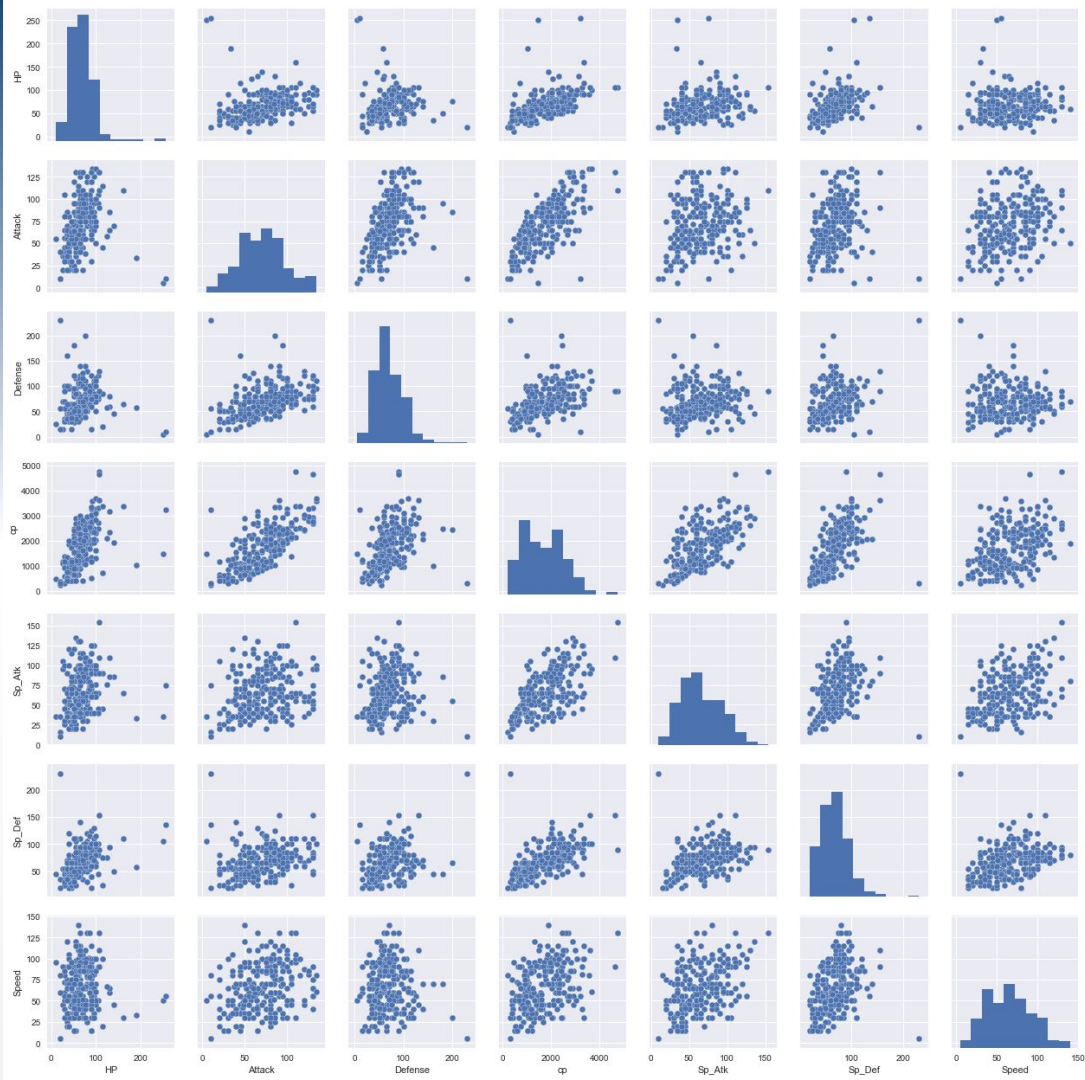


EDA: Datasets

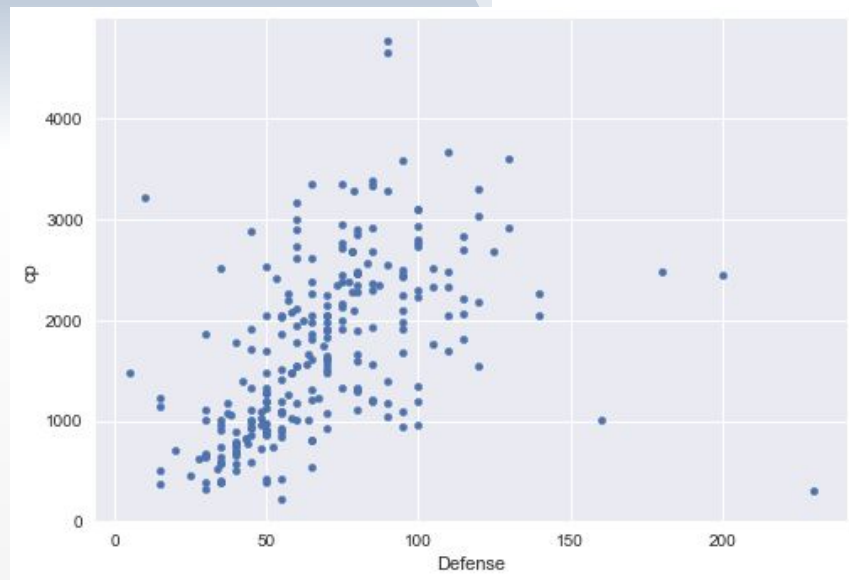
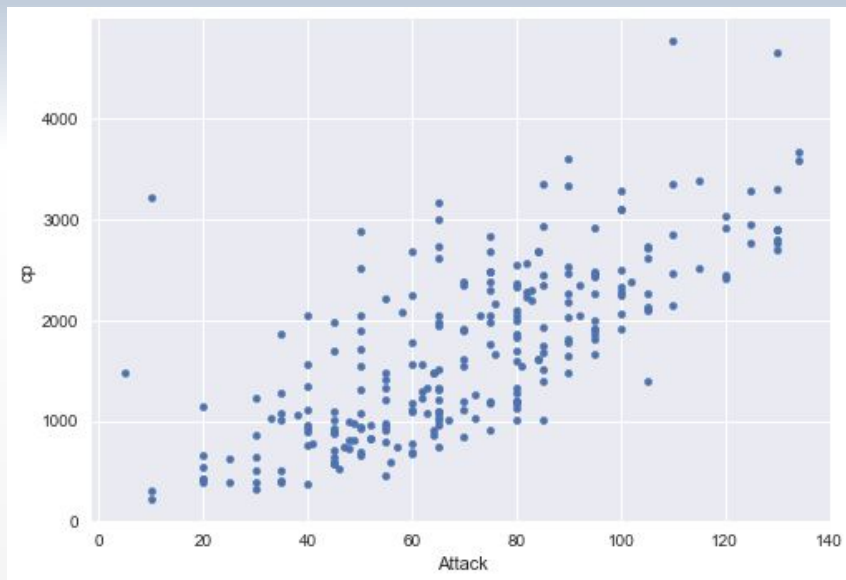


id	name	attack	defense	health	cp
1	Bulbasaur	118	118	90	981

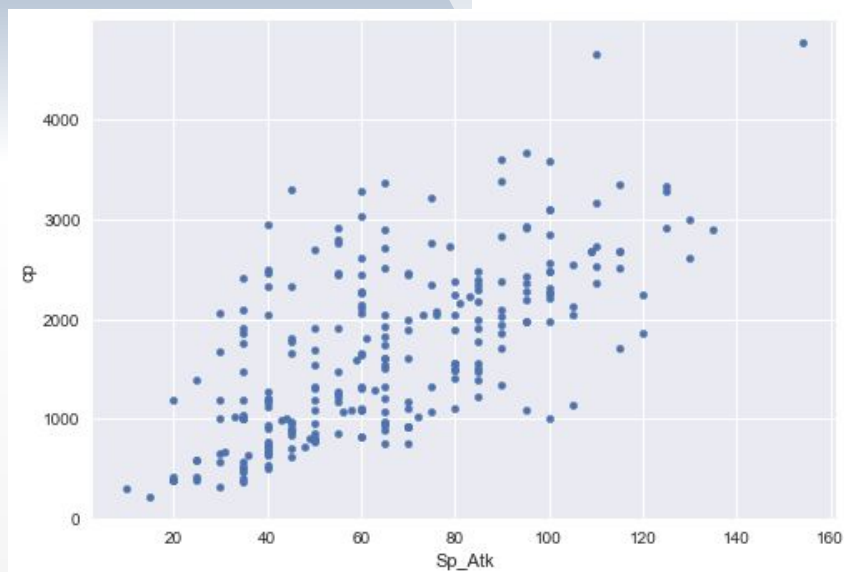
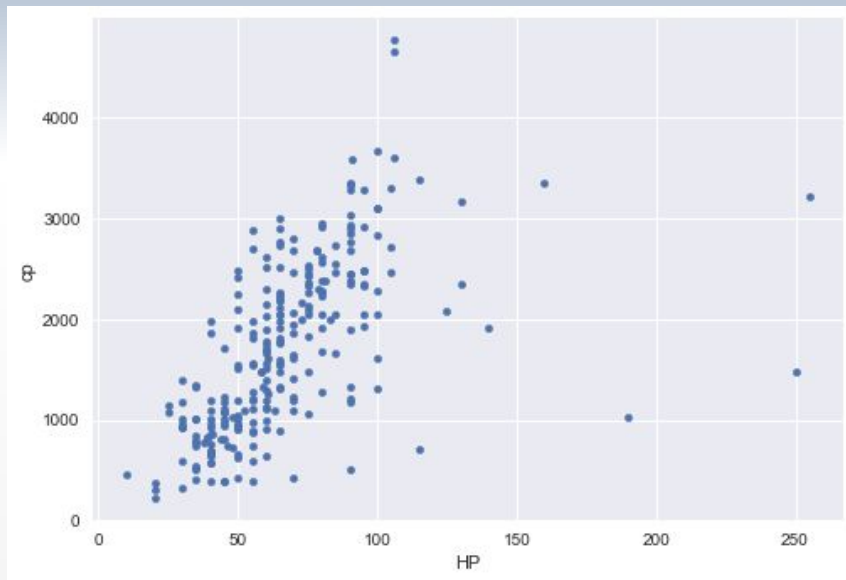
#	Name	Type 1	Type 2	Total	HP	Attack	Defense	Sp. Atk	Sp. Def	Speed	Generation	Legendary
1	Bulbasaur	Grass	Poison	318	45	49	49	65	65	45	1	False



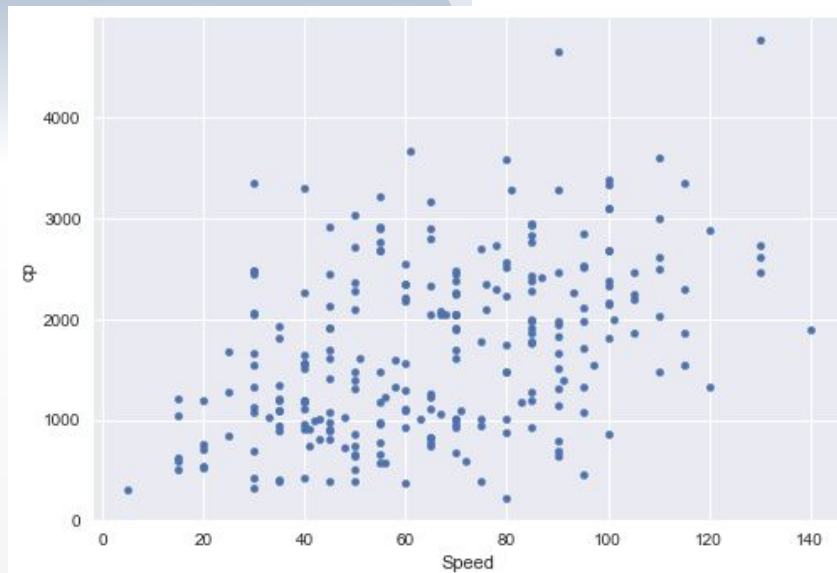
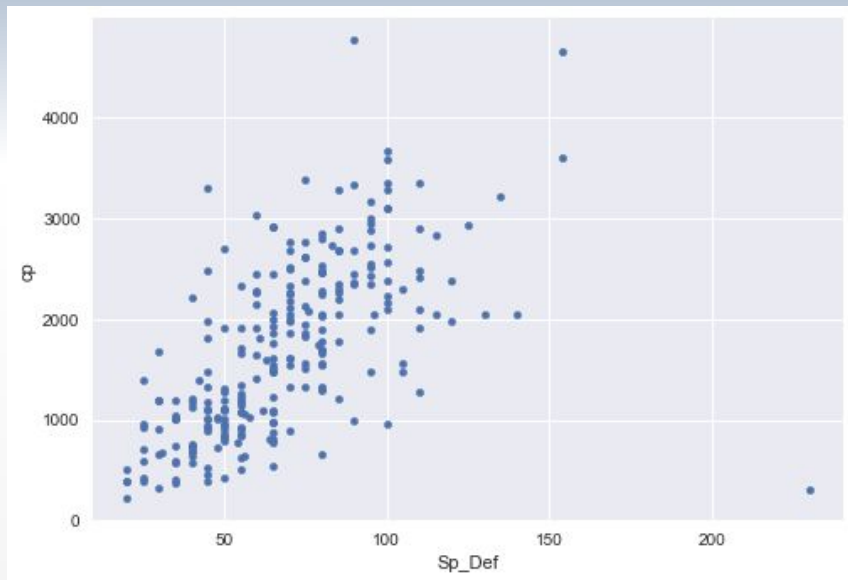
EDA: Scatter Plots!!!



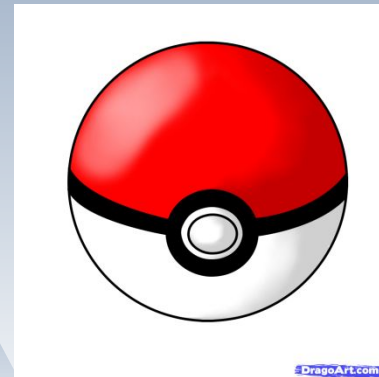
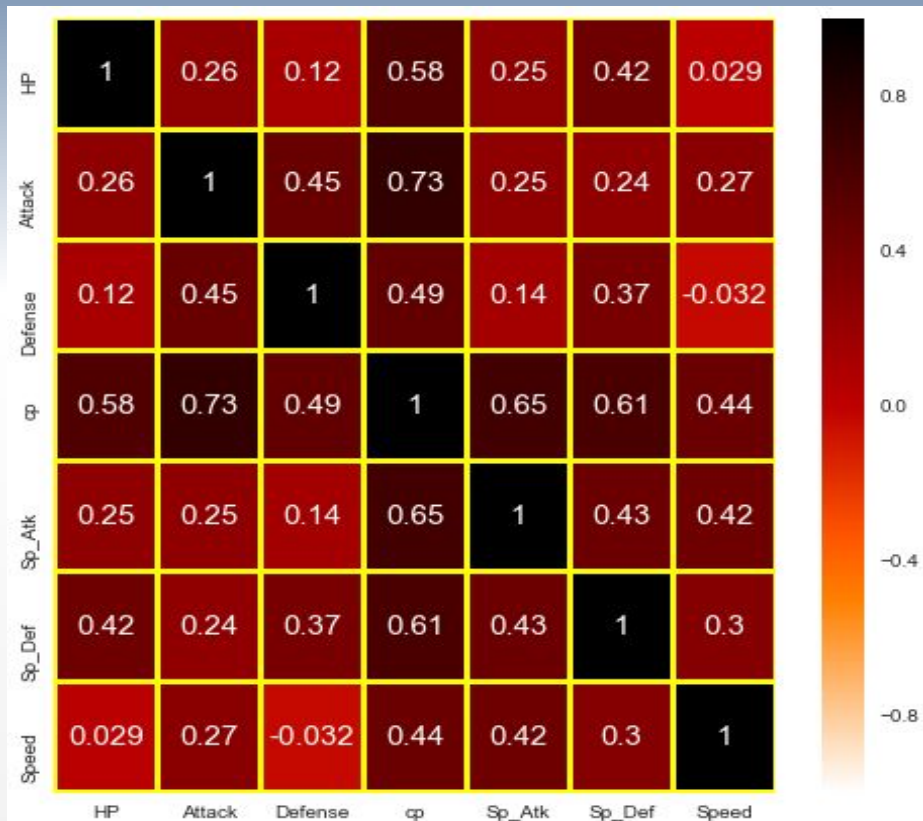
EDA: More Plots!!!



EDA: Even More!!!

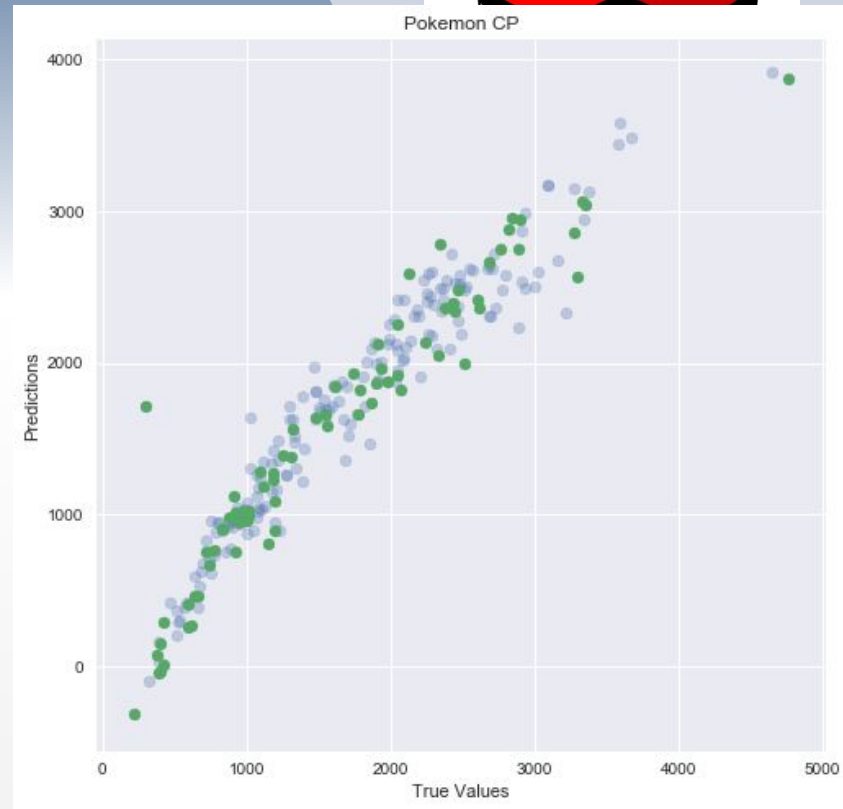
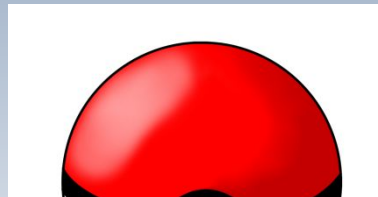


EDA: Correlation

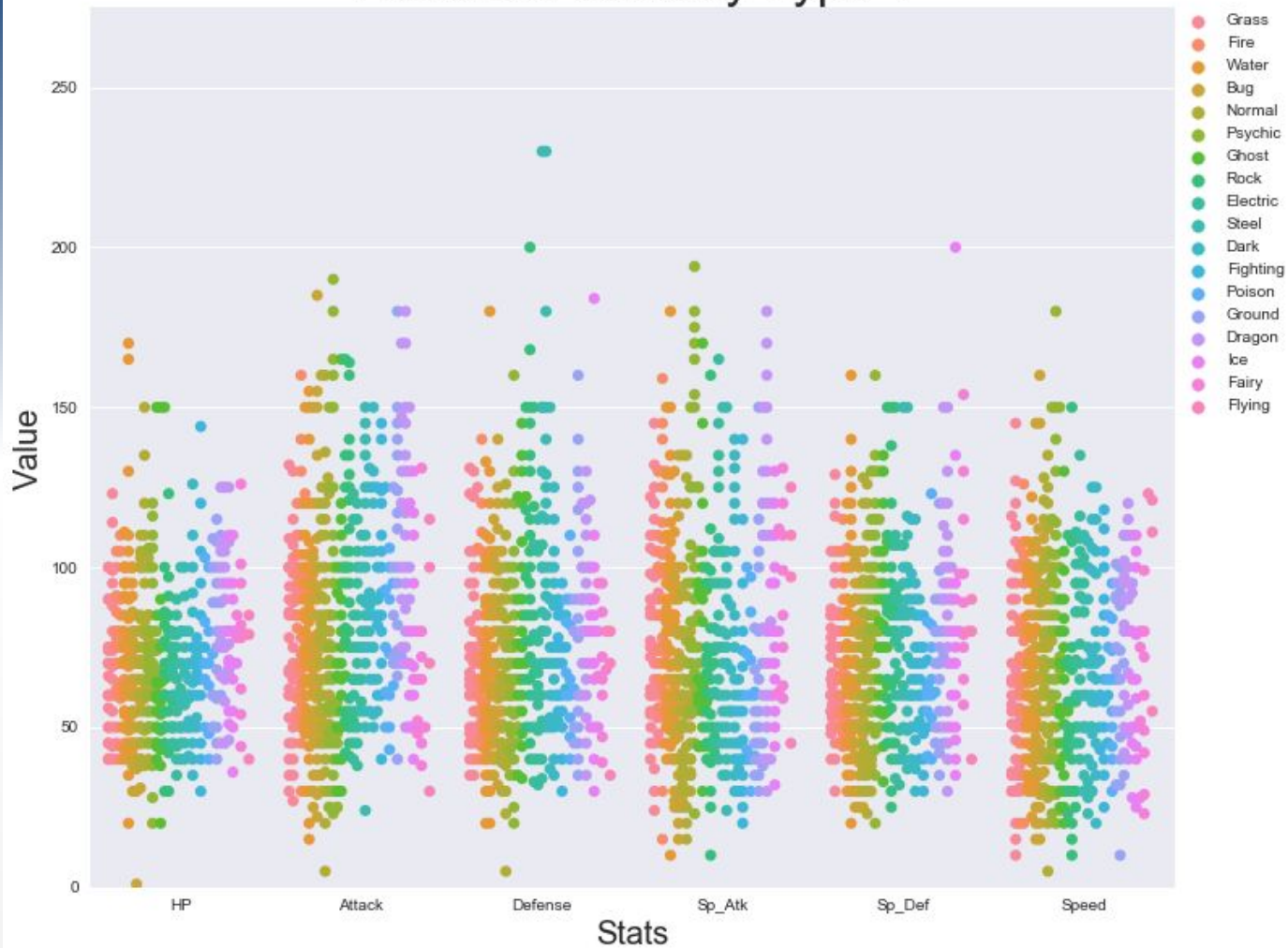


Making Predictions

- Created a linear regression model
- Cross-validated by 6 folds
- Cross-Predicted Accuracy: 0.922557898215
- Score: 0.898425089731



Pokemon Stats by Type 1



DragoArt.com

Pokemon CP by Type 1



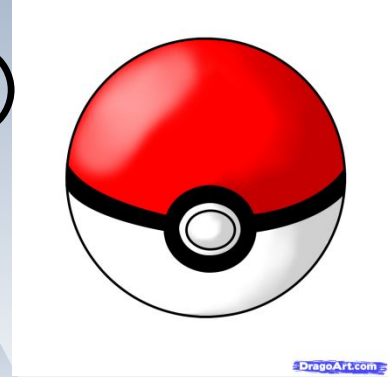
DragoArt.com

Conclusion: Worst! ☹️



DragoArt.com

Conclusion: Best!!!!



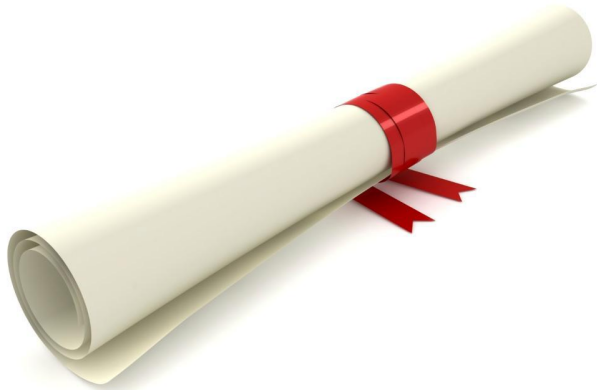
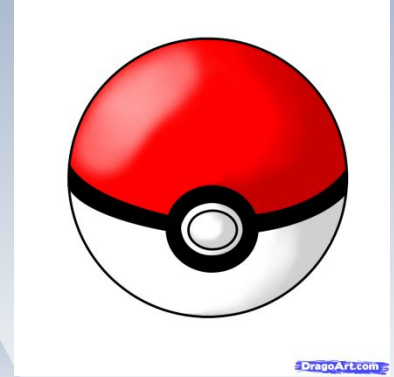
Further Analysis

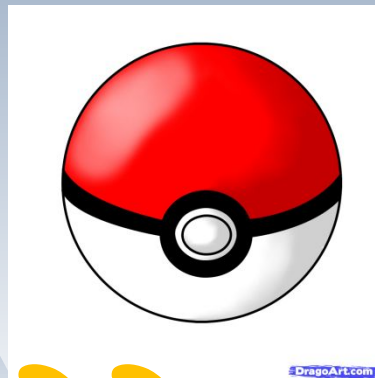
- Create a simulation that battles Pokémon



References

- <http://expandedramblings.com/index.php/pokemon-go-statistics/>





Questions?????