Classification Models For Legendary Pokemon

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Introduction

This is a project that focuses on classifying Non-Legendary Pokemon from Legendary Pokemon. I will explore the data with visualizations and explanations. I will also utilize knn, naive bayes, and xgbtree. These models will attempt to distinguish between these two types of pokemon.

Data Dictionary

The Pokemon dataset was taken from Kaggle. The pokemon included come from Generations 1-6. The dataset includes attributes such as id number, name, Type.1, Type.2, total, HP, Attack, Defense, Sp.Atk, Sp.Def, Speed, Generation, and Legendary. Added features will be discussed in later sections.

Variable Name:	Variable Description:
'id'	Identification number of pokemon
'name'	Name of Pokemon
'Type.1'	Primary property trait of pokemon
'Type.2'	Secondary property trait of pokemon
'total'	Total stats of pokemon
'HP'	Total Health of pokemon
'Attack'	Total Attack of pokemon
'Defense'	Total Defense of pokemon
'Sp.Atk'	Total Special Attack of pokemon
'Sp.Def'	Total Special Defense of pokemon
'Speed'	Total Speed of pokemon
'Generation'	The generation number of pokemon
'Legendary'	A true or false value that defines whether the pokemon is a legendary or not

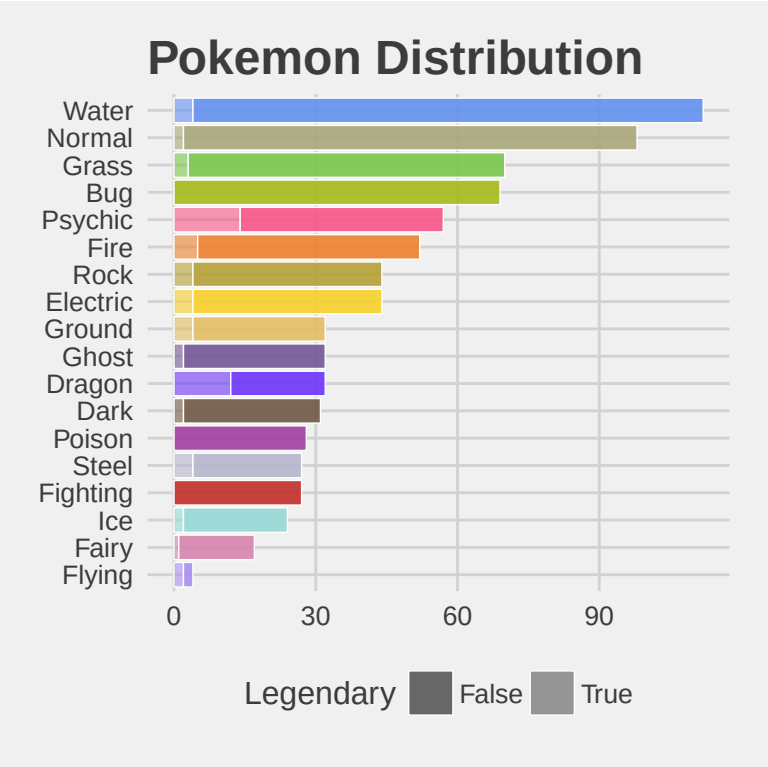
Data Loading and Packages Used

So in order to create to the visualizations and use knn, naive bayes, and xgbtrees, I loaded in all of the packages below as well as the ggplot2 and the xgboost package. I also loaded in my data.

```
library(caret)
library(doSNOW)
library(magrittr)
library(dplyr)
library(ggthemes)
library(fmsb)

pokemon = read.csv("Pokemon.csv", stringsAsFactors = FALSE)
```

Exploratory Analysis with Visualizations



As you can see from the graph above. The Psychic, Dragon, and Flying Types have a higher proportion of legendaries than the other types. So I decided to create three new features that target those three types of pokemon. There is also another feature I created based on the graph below.