DATA SCIENCE ASSIGNMENT 1

```
import pandas as pd
           data = pd.read_csv("pokemon.csv")
 In [3]:
           data
                                    Name
                                           Type 1 Type 2 Total HP Attack Defense Sp. Atk Sp. Def Speed
                                                                                                            Generation Legendary
 Out[3]:
             0
                 1
                                 Bulbasaur
                                            Grass
                                                   Poison
                                                           318
                                                                45
                                                                        49
                                                                                 49
                                                                                         65
                                                                                                        45
                                                                                                                            False
                 2
                                                           405 60
                                                                        62
                                                                                 63
                                                                                         80
                                                                                                 80
                                                                                                        60
                                                                                                                            False
             1
                                            Grass
                                                   Poison
                                                                                                                     1
                                   Ivysaur
                  3
                                 Venusaur
                                                                        82
                                                                                                        80
             2
                                            Grass
                                                   Poison
                                                            525 80
                                                                                 83
                                                                                        100
                                                                                                100
                                                                                                                     1
                                                                                                                            False
             3
                    VenusaurMega Venusaur
                                                            625 80
                                                                       100
                                                                                123
                                                                                        122
                                                                                                120
                                                                                                        80
                                                                                                                            False
                                            Grass
                                                   Poison
                               Charmander
                                                                        52
                                                                                 43
                                                                                         60
                                                                                                                     1
             4
                  4
                                              Fire
                                                     NaN
                                                           309
                                                                39
                                                                                                 50
                                                                                                        65
                                                                                                                            False
                                                            600
                                                                                                        50
                                                                                                                     6
           795 719
                                   Diancie
                                             Rock
                                                    Fairy
                                                                50
                                                                       100
                                                                                150
                                                                                        100
                                                                                                150
                                                                                                                             True
           796 719
                        DiancieMega Diancie
                                             Rock
                                                    Fairy
                                                            700 50
                                                                       160
                                                                                110
                                                                                        160
                                                                                                110
                                                                                                       110
                                                                                                                     6
                                                                                                                             True
           797 720
                       HoopaHoopa Confined
                                           Psychic
                                                    Ghost
                                                            600
                                                                80
                                                                       110
                                                                                 60
                                                                                        150
                                                                                                130
                                                                                                        70
                                                                                                                     6
                                                                                                                             True
                      HoopaHoopa Unbound Psychic
           798 720
                                                            680
                                                                80
                                                                       160
                                                                                 60
                                                                                        170
                                                                                                130
                                                                                                        80
                                                     Dark
                                                                                                                             True
           799 721
                                 Volcanion
                                                    Water
                                                           600
                                                                80
                                                                       110
                                                                                120
                                                                                        130
                                                                                                 90
                                                                                                        70
                                                                                                                     6
                                                                                                                             True
          800 rows × 13 columns
 In [4]:
           attack_mean = data["Attack"].mean()
           def set_attack(val):
                if val < attack_mean:</pre>
                     return "Attack Low"
                     return "Attack High"
 In [5]:
           data["Attack_High_Low"] = data["Attack"].apply(set_attack)
 In [6]
           data
                  #
                                           Type 1 Type 2 Total HP Attack Defense Sp. Atk Sp. Def Speed
                                                                                                            Generation Legendary Attack_High_Low
 Out[6]:
                                    Name
             0
                 1
                                 Bulbasaur
                                                           318 45
                                                                        49
                                                                                 49
                                                                                         65
                                                                                                        45
                                                                                                                            False
                                                                                                                                         Attack Low
                                            Grass
                                                   Poison
                                                                                                 65
                                                                                                                     1
                  2
             1
                                   Ivysaur
                                            Grass
                                                   Poison
                                                           405 60
                                                                        62
                                                                                 63
                                                                                         80
                                                                                                 80
                                                                                                        60
                                                                                                                            False
                                                                                                                                         Attack Low
                  3
             2
                                 Venusaur
                                                           525 80
                                                                        82
                                                                                 83
                                                                                        100
                                                                                                100
                                                                                                        80
                                                                                                                     1
                                                                                                                            False
                                                                                                                                         Attack High
                                            Grass
                                                   Poison
             3
                  3
                    VenusaurMega Venusaur
                                            Grass
                                                   Poison
                                                            625 80
                                                                       100
                                                                                123
                                                                                        122
                                                                                                120
                                                                                                        80
                                                                                                                            False
                                                                                                                                         Attack High
             4
                  4
                               Charmander
                                              Fire
                                                     NaN
                                                           309
                                                                39
                                                                        52
                                                                                 43
                                                                                         60
                                                                                                 50
                                                                                                        65
                                                                                                                     1
                                                                                                                            False
                                                                                                                                         Attack Low
           795 719
                                   Diancie
                                             Rock
                                                    Fairy
                                                           600
                                                                50
                                                                       100
                                                                                150
                                                                                        100
                                                                                                150
                                                                                                        50
                                                                                                                     6
                                                                                                                             True
                                                                                                                                         Attack High
           796 719
                        DiancieMega Diancie
                                                                                                                     6
                                             Rock
                                                    Fairy
                                                            700
                                                                50
                                                                       160
                                                                                110
                                                                                        160
                                                                                                110
                                                                                                        110
                                                                                                                             True
                                                                                                                                         Attack High
           797 720
                       HoopaHoopa Confined
                                                    Ghost
                                                           600 80
                                                                       110
                                                                                 60
                                                                                        150
                                                                                                130
                                                                                                        70
                                                                                                                     6
                                                                                                                             True
                                                                                                                                         Attack High
                                           Psychic
           798 720
                       HoopaHoopa Unbound
                                                     Dark
                                                            680
                                                                80
                                                                       160
                                                                                 60
                                                                                        170
                                                                                                130
                                                                                                        80
                                                                                                                             True
                                                                                                                                         Attack High
           799 721
                                 Volcanion
                                                    Water
                                                           600
                                                                80
                                                                       110
                                                                                120
                                                                                        130
                                                                                                 90
                                                                                                        70
                                                                                                                     6
                                                                                                                             True
                                                                                                                                         Attack High
                                              Fire
          800 rows × 14 columns
          Add two columns High_Low_Speed and High_Low_HP
 In [8]:
           speed_mean = data["Speed"].mean()
           def set_speed(val):
                if val < speed_mean:</pre>
                     return "Low Speed"
                else:
                     return "High Speed"
 In [9]:
           data["Speed_High_Low"] = data["Speed"].apply(set_speed)
In [10]:
           data
                  #
                                                                HP
                                                                    Attack Defense Sp. Atk Sp. Def Speed
                                                                                                            Generation Legendary Attack_High_Low Speed_High_Low
Out[10]:
                                    Name
                                           Type 1
                                                  Type 2 Total
             0
                 1
                                            Grass
                                                                                                        45
                                 Bulbasaur
                                                   Poison
                                                           318
                                                                45
                                                                        49
                                                                                 49
                                                                                         65
                                                                                                 65
                                                                                                                            False
                                                                                                                                         Attack Low
                                                                                                                                                          Low Speed
                                                                                                                     1
                  2
                                                            405
                                                                60
                                                                        62
                                                                                 63
                                                                                         80
                                                                                                 80
                                                                                                        60
                                                                                                                            False
                                                                                                                                         Attack Low
                                                                                                                                                          Low Speed
             1
                                   Ivysaur
                                            Grass
                                                   Poison
                  3
                                                                                                        80
             2
                                            Grass
                                                            525 80
                                                                        82
                                                                                 83
                                                                                        100
                                                                                                100
                                                                                                                                         Attack High
                                                                                                                                                         High Speed
                                 Venusaur
                                                                                                                     1
                                                                                                                            False
                                                   Poison
             3
                     VenusaurMega Venusaur
                                                            625
                                                                80
                                                                       100
                                                                                123
                                                                                        122
                                                                                                120
                                                                                                        80
                                                                                                                            False
                                                                                                                                         Attack High
                                                                                                                                                          High Speed
                                            Grass
                                                   Poison
                                                                        52
             4
                  4
                               Charmander
                                              Fire
                                                     NaN
                                                           309
                                                                39
                                                                                 43
                                                                                         60
                                                                                                 50
                                                                                                        65
                                                                                                                     1
                                                                                                                            False
                                                                                                                                         Attack Low
                                                                                                                                                          Low Speed
            ...
           795 719
                                                    Fairy
                                                           600
                                                                50
                                                                       100
                                                                                150
                                                                                        100
                                                                                                150
                                                                                                        50
                                                                                                                     6
                                                                                                                             True
                                                                                                                                         Attack High
                                                                                                                                                          Low Speed
                                   Diancie
                                             Rock
           796 719
                        DiancieMega Diancie
                                             Rock
                                                    Fairy
                                                            700
                                                                50
                                                                       160
                                                                                110
                                                                                        160
                                                                                                110
                                                                                                        110
                                                                                                                             True
                                                                                                                                         Attack High
                                                                                                                                                         High Speed
                                                                       110
                                                                                                        70
                                                                                                                     6
                                                                                                                                                         High Speed
           797 720
                       HoopaHoopa Confined
                                           Psychic
                                                    Ghost
                                                            600
                                                                80
                                                                                 60
                                                                                        150
                                                                                                130
                                                                                                                             True
                                                                                                                                         Attack High
           798 720
                      HoopaHoopa Unbound
                                          Psychic
                                                     Dark
                                                            680
                                                                80
                                                                       160
                                                                                 60
                                                                                        170
                                                                                                130
                                                                                                        80
                                                                                                                             True
                                                                                                                                         Attack High
                                                                                                                                                         High Speed
           799 721
                                                                       110
                                                                                120
                                                                                        130
                                                                                                        70
                                                                                                                     6
                                                                                                                                                         High Speed
                                 Volcanion
                                                    Water
                                                           600
                                                                80
                                                                                                 90
                                                                                                                             True
                                                                                                                                         Attack High
                                              Fire
          800 rows × 15 columns
In [11]:
           hp_mean = data["HP"].mean()
           def set_hp(val):
                if val < hp_mean:</pre>
                     return "Low HP"
                else:
                     return "High HP"
In [12]:
           data["HP_High_Low"] = data["HP"].apply(set_hp)
In [13]:
           data
                  #
                                           Type 1 Type 2 Total HP Attack
                                                                                                                                  Attack_High_Low Speed_High_Low HP_High_Low
Out[13]:
                                    Name
                                                                           Defense Sp. Atk Sp. Def Speed
                                                                                                            Generation Legendary
                 1
             0
                                 Bulbasaur
                                                   Poison
                                                           318 45
                                                                        49
                                                                                 49
                                                                                         65
                                                                                                 65
                                                                                                        45
                                                                                                                            False
                                                                                                                                         Attack Low
                                                                                                                                                          Low Speed
                                                                                                                                                                          Low HP
                                            Grass
                                                                                                                     1
                  2
             1
                                   Ivysaur
                                            Grass
                                                   Poison
                                                            405 60
                                                                        62
                                                                                 63
                                                                                         80
                                                                                                 80
                                                                                                        60
                                                                                                                     1
                                                                                                                            False
                                                                                                                                         Attack Low
                                                                                                                                                          Low Speed
                                                                                                                                                                          Low HP
                  3
                                                                                                                                                         High Speed
             2
                                 Venusaur
                                            Grass
                                                   Poison
                                                            525
                                                                80
                                                                        82
                                                                                 83
                                                                                        100
                                                                                                100
                                                                                                        80
                                                                                                                     1
                                                                                                                            False
                                                                                                                                         Attack High
                                                                                                                                                                          High HP
                                                                                                                                                          High Speed
             3
                  3
                    VenusaurMega Venusaur
                                            Grass
                                                   Poison
                                                            625
                                                                80
                                                                       100
                                                                                123
                                                                                        122
                                                                                                120
                                                                                                        80
                                                                                                                            False
                                                                                                                                         Attack High
                                                                                                                                                                          High HP
                                                                        52
             4
                  4
                               Charmander
                                              Fire
                                                            309
                                                                39
                                                                                 43
                                                                                         60
                                                                                                 50
                                                                                                        65
                                                                                                                     1
                                                                                                                            False
                                                                                                                                         Attack Low
                                                                                                                                                          Low Speed
                                                                                                                                                                          Low HP
                                                     NaN
           795 719
                                   Diancie
                                             Rock
                                                    Fairy
                                                           600
                                                                50
                                                                       100
                                                                                150
                                                                                        100
                                                                                                150
                                                                                                        50
                                                                                                                     6
                                                                                                                             True
                                                                                                                                         Attack High
                                                                                                                                                          Low Speed
                                                                                                                                                                          Low HP
           797 720
                      HoopaHoopa Confined Psychic
                                                    Ghost
                                                           600 80
                                                                       110
                                                                                        150
                                                                                                130
                                                                                                        70
                                                                                                                             True
                                                                                                                                         Attack High
                                                                                                                                                         High Speed
                                                                                                                                                                          High HP
                                                                                 60
                                                                                                                                                         High Speed
                                                                                                                                                                          High HP
           798 720
                      HoopaHoopa Unbound Psychic
                                                                       160
                                                                                        170
                                                                                                                             True
                                                                                                                                         Attack High
                                                     Dark
                                                           680 80
                                                                                 60
                                                                                                130
           799 721
                                                           600 80
                                                                       110
                                                                                120
                                                                                        130
                                                                                                        70
                                                                                                                     6
                                                                                                                             True
                                                                                                                                                         High Speed
                                                                                                                                                                          High HP
                                 Volcanion
                                                    Water
                                                                                                 90
                                                                                                                                         Attack High
                                              Fire
          800 rows × 16 columns
 In [ ]:
```