Question 6 - Using the data from Question 3, write code to analyze the data and answer the following questions Note 1. Draw plots to demonstrate the analysis for the following questions for better visualizations.

2. Write code comments wherever required for code understanding

Insights to be drawn -

- Get all Pokemons whose spawn rate is less than 5%
- Get all Pokemons that have less than 4 weaknesses
- Get all Pokemons that have no multipliers at all
- Get all Pokemons that do not have more than 2 evolutions
- Get all Pokemons whose spawn time is less than 300 seconds.

Note - spawn time format is "05:32", so assume "minute: second" format and perform the analysis.

• Get all Pokemon who have more than two types of capabilities

Ans:

```
In [10]: import pandas as pd
import numpy as np
import requests

In [11]: # Retrieve the raw JSON data

def json_to_csv(link):
    response = requests.get(link)
    data = response.json()["pokemon"]

    # Convert JSON data to DataFrame
    df = pd.DataFrame(data)
    df.to_csv("Output.csv", index=False)

In [12]: link = "https://raw.githubusercontent.com/Biuni/PokemonGO-Pokedex/master/pokedex.json"
    json_to_csv(link)

In [13]: df1 = pd.read_csv("Output.csv")

In [14]: df1
```

```
Out[14]:
                                                                                      ['Grass'
                                                                                                 0.71
                                                                                                                Bulbasaur
                             Bulbasaur http://www.serebii.net/pokemongo/pokemon/001.png
                                                                                                       6.9 kg
                                                                                                                                  25.0
                                                                                                                                        2 km
                                                                                      'Poison']
                                                                                                   m
                                                                                                                   Candy
                                                                                                                                         Not
                                                                                      ['Grass',
                                                                                                 0.99
                                                                                                         13.0
                                                                                                                Bulbasaur
                  2
                        2
                               Ivysaur http://www.serebii.net/pokemongo/pokemon/002.png
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                                                                                                                                          in
                                                                                      'Poison']
                                                                                                                   Candy
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                                                                                       ['Grass',
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                                                                                                                Bulbasaur
             2
                   3
                             Venusaur http://www.serebii.net/pokemongo/pokemon/003.png
                                                                                                                                  NaN
                                                                                      'Poison'1
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                                                                                                                   Candy
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                                                                                                 0.61
                                                                                                              Charmander
                                                                                                       8.5 kg
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                        4 Charmander http://www.serebii.net/pokemongo/pokemon/004.png
                                                                                        ['Fire']
                                                                                                   m
                                                                                                                   Candy
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                                                                                                 1.09
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                        5 Charmeleon http://www.serebii.net/pokemongo/pokemon/005.png
                                                                                        ['Fire']
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                                                                                                          kg
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                                                                                                                                        Eggs
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                                                                                                                   Dratini
                                                                                                                                          10
                                                                                                       3.3 kg
           146 147
                      147
                                Dratini http://www.serebii.net/pokemongo/pokemon/147.png ['Dragon']
                                                                                                                                  25.0
                                                                                                                   Candy
                                                                                                                                          km
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                                                                                                                   Dratini
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                      148
                             Dragonair http://www.serebii.net/pokemongo/pokemon/148.png ['Dragon']
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                      149
                             Dragonite http://www.serebii.net/pokemongo/pokemon/149.png
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                                                                                       'Flying']
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                               Mewtwo http://www.serebii.net/pokemongo/pokemon/150.png ['Psychic']
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                                                                                                 0.41
                                                                                                       4.0 kg
           150 151
                      151
                                  Mew http://www.serebii.net/pokemongo/pokemon/151.png ['Psychic']
                                                                                                                    None
                                                                                                                                  NaN
                                                                                                                                          in
                                                                                                                                        Eggs
           151 rows × 17 columns
In [15]: # Get all Pokemons whose spawn rate is less than 5%
           five_perc = df1["spawn_chance"].quantile(0.05)
           df1[df1["spawn_chance"] < five_perc]["name"]</pre>
                        Ditto
Out[15]: 131
           143
                     Articuno
           144
                       Zapdos
           145
                      Moltres
           148
                    Dragonite
           149
                       Mewtwo
           150
                           Mew
           Name: name, dtype: object
In [16]: import ast
In [17]: # Get all Pokemons that have less than 4 weaknesses
           df1["weaknesses"] = df1["weaknesses"].apply(lambda x : ast.literal_eval(x))
           df1[df1["weaknesses"].apply(lambda x : len(x)) < 4]["name"]
Out[17]: 3
                    Charmander
                    Charmeleon
           4
           5
                     Charizard
           6
                      Squirtle
           7
                     Wartortle
           145
                       Moltres
           146
                       Dratini
           147
                     Dragonair
           149
                         Mewtwo
           150
                            Mew
           Name: name, Length: 102, dtype: object
In [18]: # Get all Pokemons that have no multipliers at all
```

type height weight

img

candy candy_count

egg spaw

id num

name

df1[df1["multipliers"].isna()]["name"]

```
Charizard
                         8
                                             Blastoise
                                           Butterfree
                                                Beedrill
                         14
                         144
                                                      Zapdos
                         145
                                                   Moltres
                         148
                                              Dragonite
                         149
                                                      Mewtwo
                         150
                                                             Mew
                         Name: name, Length: 81, dtype: object
In [19]: df1
Out[19]:
                                       id num
                                                                       name
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                                                                                                                                                                                                type height weight
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                                                                Venusaur http://www.serebii.net/pokemongo/pokemon/003.png
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                                                     4 Charmander http://www.serebii.net/pokemongo/pokemon/004.png
                                                                                                                                                                                              ['Fire']
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                                                                                                                                                                                                                                                         Candy
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                                                     5 Charmeleon http://www.serebii.net/pokemongo/pokemon/005.png
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                                                                   Mewtwo http://www.serebii.net/pokemongo/pokemon/150.png ['Psychic']
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                                                                                                                                                                                                                                                                                                          in
                                                                                                                                                                                                                                                                                                     Eggs
                       151 rows × 17 columns
                        # Get all Pokemons that do not have more than 2 evolutions
                         df = df1.copy()
In [21]: df["next evolution"].dropna(inplace=True)
In [22]: df["Evloutions 2"] = df["next_evolution"].dropna().apply(lambda x : ast.literal_eval(x)).apply(lambda x : len(x)).apply(lambda x : len(
In [23]: df.loc[df["Evloutions 2"] == True]["name"]
```

Out[18]: 2

Venusaur

```
Out[23]: 1
                    Ivysaur
                 Charmeleon
          4
          7
                  Wartortle
                    Metapod
          13
                     Kakuna
          16
                  Pidgeotto
          18
                    Rattata
          20
                    Spearow
          22
                      Ekans
          24
                    Pikachu
          26
                  Sandshrew
          29
                   Nidorina
          32
                   Nidorino
          34
                   Clefairy
          36
                     Vulpix
          38
                 Jigglypuff
          40
                      Zubat
          43
                      Gloom
          45
                      Paras
          47
                    Venonat
          49
                    Diglett
          51
                     Meowth
          53
                    Psyduck
          55
                     Mankey
          57
                  Growlithe
          60
                  Poliwhirl
          63
                    Kadabra
          66
                    Machoke
          69
                 Weepinbell
          71
                  Tentacool
          74
                   Graveler
          76
                     Ponyta
          78
                   Slowpoke
          80
                  Magnemite
          83
                      Doduo
          85
                       Seel
          87
                     Grimer
                   Shellder
          89
          92
                    Haunter
          95
                    Drowzee
          97
                     Krabby
          99
                    Voltorb
          101
                  Exeggcute
          103
                     Cubone
          108
                    Koffing
          110
                    Rhyhorn
          115
                     Horsea
          117
                    Goldeen
          119
                     Staryu
          128
                   Magikarp
          137
                    0manyte
          139
                     Kabuto
          147
                  Dragonair
         Name: name, dtype: object
```

	1	2	2	lvysaur	http://www.serebii.net/pokemongo/pokemon/0	002.png	['Grass', 'Poison']	0.99 m	13.0 kg	Bulbasaur Candy	100.0	Not in Eggs	
	2	3	3	Venusaur	http://www.serebii.net/pokemongo/pokemon/0	003.png	['Grass', 'Poison']	2.01 m	100.0 kg	Bulbasaur Candy	NaN	Not in Eggs	
	3	4	4	Charmander	http://www.serebii.net/pokemongo/pokemon/0	004.png	['Fire']	0.61 m	8.5 kg	Charmander Candy	25.0	2 km	
	4	5	5	Charmeleon	http://www.serebii.net/pokemongo/pokemon/0	005.png	['Fire']	1.09 m	19.0 kg	Charmander Candy	100.0	Not in Eggs	
	146	147	147	Dratini	http://www.serebii.net/pokemongo/pokemon/1	147.png	['Dragon']	1.80 m	3.3 kg	Dratini Candy	25.0	10 km	
	147	148	148	Dragonair	http://www.serebii.net/pokemongo/pokemon/1	148.png	['Dragon']	3.99 m	16.5 kg	Dratini Candy	100.0	Not in Eggs	
	148	149	149	Dragonite	http://www.serebii.net/pokemongo/pokemon/1	149.png	['Dragon', 'Flying']	2.21 m	210.0 kg	Dratini Candy	NaN	Not in Eggs	
	149	150	150	Mewtwo	http://www.serebii.net/pokemongo/pokemon/1	150.png	['Psychic']	2.01 m	122.0 kg	None	NaN	Not in Eggs	
	150	151	151	Mew	http://www.serebii.net/pokemongo/pokemon/1	151.png	['Psychic']	0.41 m	4.0 kg	None	NaN	Not in Eggs	
	151 r	ows ×	17 c	olumns									
4)	
In [25]:		<pre># Get all Pokemons whose spawn time is less than 300 seconds df = df1.copy()</pre>											
In [26]:		<pre>df["spawn_time_less_then_300"] = df["spawn_time"].dropna().apply(lambda x: (int(x.split(":")[0]) * 60) +(int(x.split(":")[0]) * 60)</pre>											
In [27]:	df.	loc[d	f["s	pawn_time_	less_then_300"] == True]["name"]								
Out[27]:	6 Squirtle 8 Blastoise 10 Metapod 12 Weedle 13 Kakuna												
	127 129		 Taı Gyara	ıros									
	134 136 139		Joli Pory Kal	teon ygon outo	, dtype: object								
In [28]:	134 136 139 Name	e: na	Joli Pory Kal me, I	teon ygon outo Length: 75	, dtype: object nave more than two types of capa	biliti	es						
	134 136 139 Name	e: na et al = df1	Joli Pory Kal me, I I Pol	teon ygon buto Length: 75 kemon who l									

img

1 Bulbasaur http://www.serebii.net/pokemongo/pokemon/001.png

['Grass', 'Poison']

type height weight

0.71

6.9 kg

candy candy_count egg spaw

25.0 2 km

Bulbasaur Candy

Out[24]:

id num

Out[30]: Series([], Name: name, dtype: object)

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