Day 13: *Simple Plots in Pandas*

After solving the mystery of Australia's seasons and spending some time on the continent's west coast, Dot moved across "the land Down Under" towards the opposite coast. They crossed the arid Outback on a plane over a land populated by dingos, wallabies, bilbies, and skinks. Though they wished they could see the region's wildlife, they were glad they could pass over it in the comfort of a plane – being in the desert seemed a bit frightening! So they decided to view the wildlife in a slightly less direct way and take a trip over to the Melbourne Zoo. After landing in Melbourne, they headed north of the city for a day trip.

Arriving at the zoo and buying a ticket, Dot excitedly ran to the Australian bush section. They looked with wonder at animals native to Australia over a safe distance, with trained professionals around. Dot waved hello at some cute koala bears, fawning over their little eyes and big noses. They lingered around the kangaroo exhibit, watching the bipedal marsupials hop and jump inside their enclosure. They spent some time looking with a curious gaze at the sneaky Tasmanian devils, which looked devilish with their tiny rodent faces and long teeth. After a day under the sun, Dot was exhausted and ready to sit down and rest. Exiting the zoo, they looked down at their hands and saw how cracked their skin was. "Wow, Australia sure is dry!" they exclaimed aloud. Between the expanses of desert and the arid climate, it seemed to them that the continent probably didn't get much rainfall. But Dot wasn't the kind of person to take an idle observation for fact; they wanted to know what Australia's climate was like. So let's examine a dataset with Dot to see whether the weather in Australia is ever rainy.

Tutorial

In today's challenge, we will take a look at another powerful feature of Pandas, plotting.

```
import pandas as pd

# we load the DataFrame
df = pd.read_csv('aus_weather.csv')
df.head()

# we can call plot() method directly on the column we want to show
df["MaxTemp"].plot()
```

We can observe the values of the DataFrame'sindex on the x axis, and the values of the MaxTemp variable on the y axis. If we want the x axis to show something else, we can set those values as the index of our DataFrame.

```
df_date = df.set_index("Date")
df_date.head()
```

Observe the difference between `df_date` and `df`.

```
df_date[df_date['Location'] == 'Albury']["MaxTemp"].plot(kind='line')
```

Using the parameter *kind* in the **.plot()** method we can change the type of the plot.

- `kind='line'` : line chart (default value)
- `kind='box'` : boxplot
- `kind='hist'` : histogram
- `kind='bar'` : bar chart

Play around with the commands above and observe the outputs.

We can visit this article for more information about basic plotting in Pandas.

In [2]:
```
import pandas as pd
df = pd.read_csv('aus_weather.csv')
df = df[df["Location"] == "Melbourne"]
df.head()
```

Out[2]:

	Date	Location	MinTemp	MaxTemp	Rainfall	Sunshine	WindSpeed9am	WindSpeed3pm	H
67200	2008-07-01	Melbourne	9.5	15.4	2.0	7.0	37.0	35.0	
67201	2008-07-02	Melbourne	11.0	14.5	0.6	4.0	30.0	35.0	
67202	2008-07-03	Melbourne	8.4	14.1	1.4	0.8	17.0	24.0	
67203	2008-07-04	Melbourne	9.1	14.5	0.6	4.2	9.0	7.0	
67204	2008-07-05	Melbourne	4.3	15.5	0.0	8.4	24.0	30.0	

Challenge

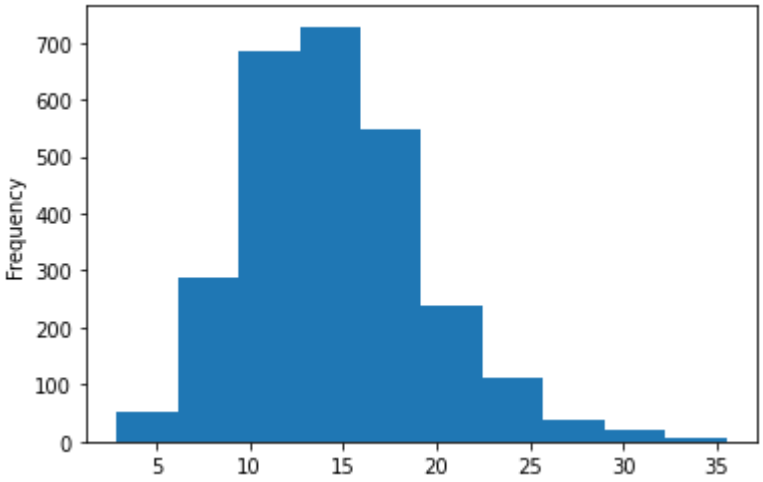
Use the Pandas plot function to answer these two questions:

1. **Using a histogram, what is the most likely temperature at 9am (Temp9am) in Melbourne?**
2. **Using a boxplot, does it ever rain (variable Rainfall) in Melbourne? If yes, what was the highest daily amount recorded?**

In [3]:
```
# SOLUTION

df.Temp9am.plot(kind="hist")
```

Out[3]:
```
<AxesSubplot:ylabel='Frequency'>
```



In [4]:
```
df.Rainfall.plot(kind='box')
```

Out[4]: <AxesSubplot:>