In [5]:
```
print("Name : ")
print("We will learn how to group by date and plot a line graph for the con
print("Then we will group by date and get the maximum brightness and temper
print("And plot a line graph for showing the correlation between brightness
```

```
Name :
We will learn how to group by date and plot a line graph for the confiden
ce of the data collected by satellites
Then we will group by date and get the maximum brightness and temperature
of the fire
And plot a line graph for showing the correlation between brightness and
temperature of fire
```

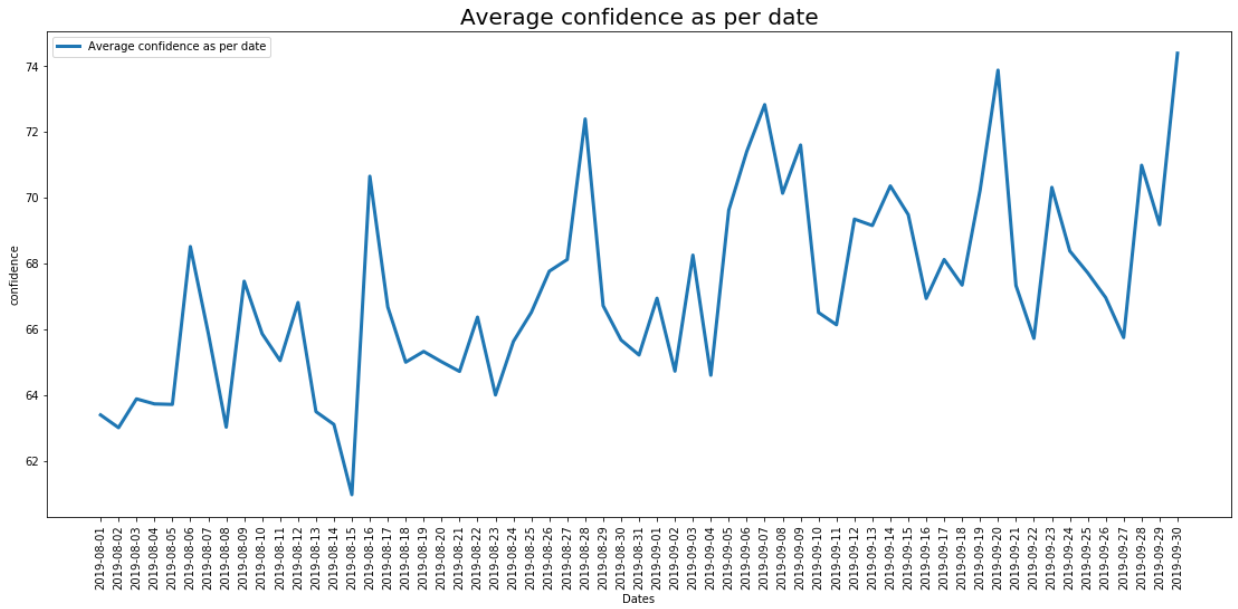
In [3]:
```
import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv('australia_bushfire.csv')
df
```

```
---------------------------------------------------------------------------
--
ModuleNotFoundError                       Traceback (most recent call las
t)
/var/folders/1d/dx5rjvf91qq7f432s9k1r3780000gp/T/ipykernel_39936/15147006
15.py in <module>
----> 1 import pandas as pd
      2 import matplotlib.pyplot as plt
      3
      4 df = pd.read_csv('australia_bushfire.csv')
      5 df

ModuleNotFoundError: No module named 'pandas'
```

In [2]:
```
#Activity 1
#Group by data and plot a line graph for the average confidence of the sate

group_by_date = df.groupby('acq_date')['confidence'].mean().reset_index(nam
group_by_date
```

```
---------------------------------------------------------------------------
--
NameError                                 Traceback (most recent call las
t)
/var/folders/1d/dx5rjvf91qq7f432s9k1r3780000gp/T/ipykernel_39936/40000067
80.py in <module>
      2 #Group by data and plot a line graph for the average confidence o
f the satellites for collecting data
      3
----> 4 group_by_date = df.groupby('acq_date')['confidence'].mean().reset
_index(name='confidence')
      5 group_by_date
      6

NameError: name 'df' is not defined
```

In [4]:
```
label = group_by_date['acq_date']
value = group_by_date['confidence']

fig = plt.subplots(figsize=(19,8))

plt.plot(label, value, label = "Average confidence as per date" , linewidth
plt.xlabel('Dates')
plt.xticks(rotation='vertical')

plt.ylabel('confidence')

plt.title('Average confidence as per date', fontsize=20)

plt.legend()

plt.show()
```



Conclusion - The data captured by the satellite is almost 65 percent confident (accurate)

In [9]:
```
#Activity 2
#Show a correlation between the brightness of fire and temperature of fire

#First - group by date, and find out Max Brightness and create a dataframe
group_by_date_max_brightness = df.groupby('auq_date')['brightness'].max().r
group_by_date_max_brightness
```

```
---------------------------------------------------------------------------
--
NameError                                 Traceback (most recent call las
t)
/var/folders/1d/dx5rjvf91qq7f432s9k1r3780000gp/T/ipykernel_39936/41619385
01.py in <module>
      3
      4 #First - group by date, and find out Max Brightness and create a
 dataframe out of it
----> 5 group_by_date_max_brightness = df.groupby('auq_date')['brightnes
s'].max().reset_index
      6 group_by_date_max_brightness

NameError: name 'df' is not defined
```

In [10]:
```
#Second - group by date, and find out Max Temperature and create a datafram

group_by_date_max_brightness = df.groupby('auq_date')['bright_t31'].max().r
group_by_date_max_brightness
```

```
---------------------------------------------------------------------------
--
NameError                                 Traceback (most recent call las
t)
/var/folders/1d/dx5rjvf91qq7f432s9k1r3780000gp/T/ipykernel_39936/38020412
81.py in <module>
      1 #Second - group by date, and find out Max Temperature and create
 a dataframe out of it
      2
----> 3 group_by_date_max_brightness = df.groupby('auq_date')['bright_t3
1'].max().reset_index
      4 group_by_date_max_brightness

NameError: name 'df' is not defined
```

In [11]:
```
#Thrid - get the data and brightness from group by date max brightness and
brightness_label = group_by_date_max_brightness['auq_date']
brightness_value = group_by_date_max_brightness['brightness']

 fig = plt.subplots(figsize(19,8))
#Forth - plot first line graph for max brightness by date
plt.plot(brightness_label, brightness_value, label = "Max Brightness",linew
#Fifth - get the data and Temperature from group by date max Temperature an
temperature_label = group_by_date_max_temperature['auq_date'
temperature_value = group_by_date_max_temperature['bright_t31']
#Sixth - plot second line graph for max Temperature by date
plt.plot(temperature_label, temperature_value, label = "Max Temperature",li

plt.xlabel('date')
plt.xticks(rotation='vertical')

plt.title('Correlation between the brightness and temperature of a fire uns

plt.legend()

plt.show()
```

```
  File "/var/folders/1d/dx5rjvf91qq7f432s9k1r3780000gp/T/ipykernel_39936/
3570302981.py", line 5
    fig = plt.subplots(figsize(19,8))
    ^
IndentationError: unexpected indent
```

Conclusion -

In [ ]: