

DATA SCIENCE

WEEK 2 PROJECT

TITLE: WEATHER & TEMPERATURE ANALYSIS MODULE

CODE:

```
import pandas as pd

import matplotlib.pyplot as plt

weather=pd.read_csv("E:\DATA
SCIENCE\week2\Bangalore_1990_2022_BangaloreCity.csv")

print(weather.isnull().sum())

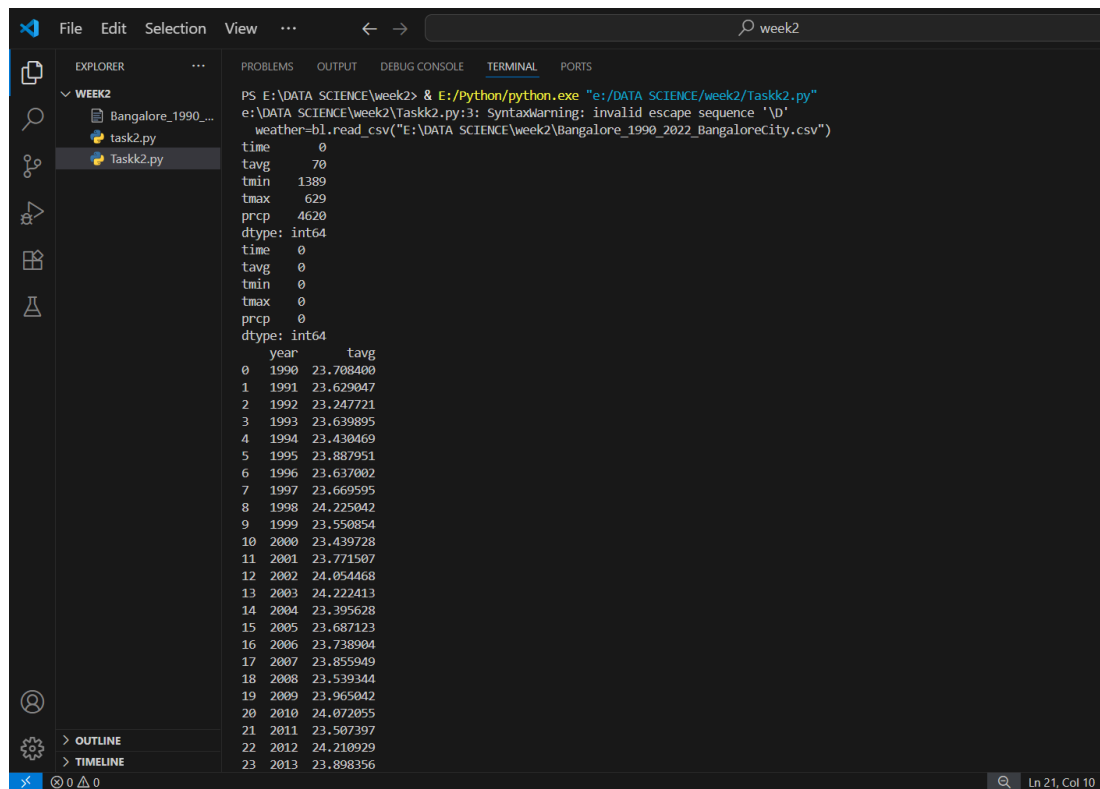
weather['tavg'] = weather['tavg'].fillna(weather['tavg'].mean())
weather['tmax'] = weather['tmax'].fillna(weather['tmax'].mean())
weather['tmin'] = weather['tmin'].fillna(weather['tmin'].mean())
weather['prcp'] = weather['prcp'].fillna(weather['prcp'].mean())
print(weather.isnull().sum())

weather['time'] = pd.to_datetime(weather['time'], format="%d-%m-%Y")
weather['year'] = weather['time'].dt.year
weather['month'] = weather['time'].dt.month
weather['day'] = weather['time'].dt.day

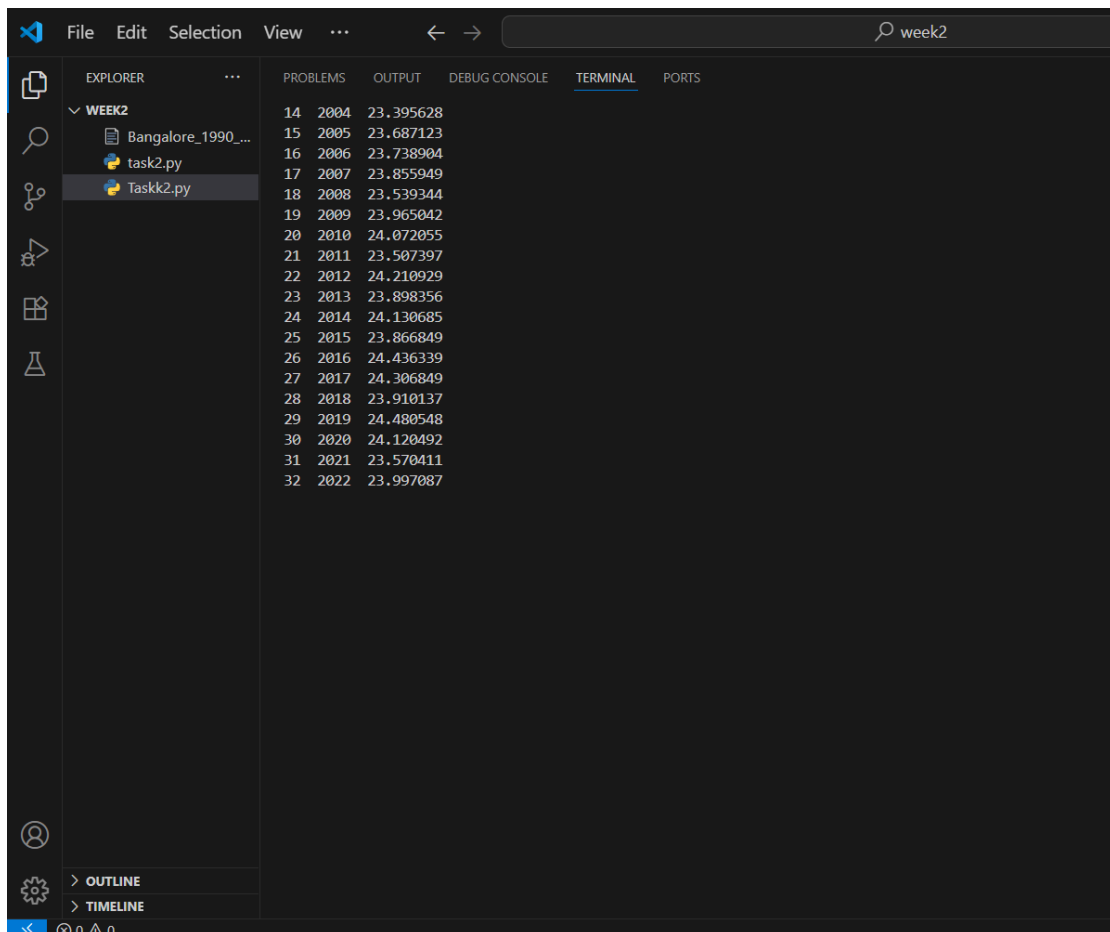
yearly = weather.groupby('year')['tavg'].mean().reset_index()
print(yearly)

ds.figure(figsize=(10, 5))
ds.plot(yearly['year'], yearly['tavg'], marker='o', color='purple')
ds.title('Average Annual Temperature (1990–2022)')
ds.xlabel('Year')
ds.ylabel('Average Temperature (°C)')
ds.show()
```

OUTPUT:

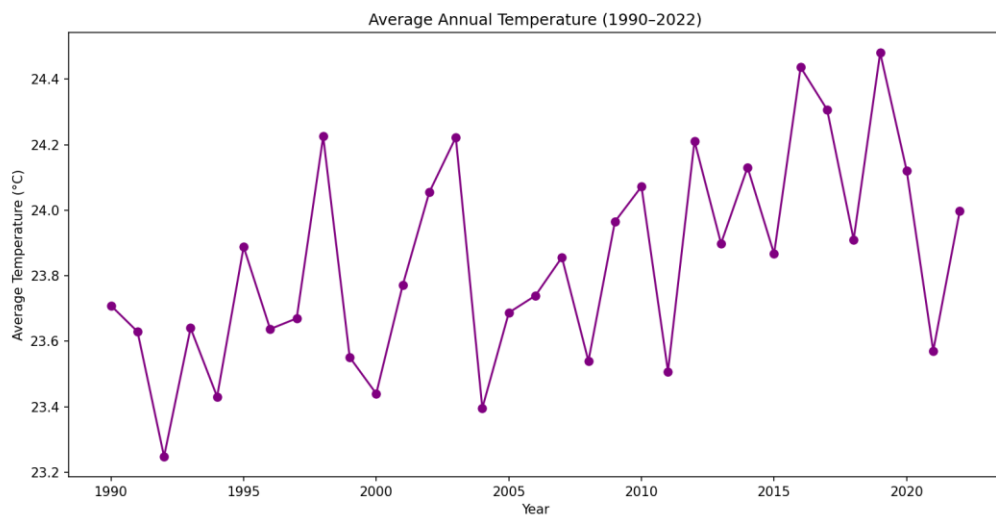


```
PS E:\DATA SCIENCE\week2> & E:/Python/python.exe "E:/DATA SCIENCE/week2/Taskk2.py"
e:\DATA SCIENCE\week2\Taskk2.py:3: SyntaxWarning: invalid escape sequence '\d'
weather=bl.read_csv("E:\DATA SCIENCE\week2\Bangalore_1990_2022_BangaloreCity.csv")
time      0
tavg      70
tmin     1389
tmax      629
prcp     4620
dtype: int64
time      0
tavg      0
tmin      0
tmax      0
prcp      0
dtype: int64
   year  tavg
0  1990  23.708400
1  1991  23.620047
2  1992  23.247721
3  1993  23.639895
4  1994  23.430469
5  1995  23.887951
6  1996  23.637002
7  1997  23.669595
8  1998  24.225042
9  1999  23.550854
10 2000  23.439728
11 2001  23.771507
12 2002  24.054468
13 2003  24.222413
14 2004  23.395628
15 2005  23.687123
16 2006  23.738904
17 2007  23.855949
18 2008  23.539344
19 2009  23.965042
20 2010  24.072055
21 2011  23.507397
22 2012  24.210929
23 2013  23.898356
```



```
   year  tavg
14 2004  23.395628
15 2005  23.687123
16 2006  23.738904
17 2007  23.855949
18 2008  23.539344
19 2009  23.965042
20 2010  24.072055
21 2011  23.507397
22 2012  24.210929
23 2013  23.898356
24 2014  24.130685
25 2015  23.866849
26 2016  24.436339
27 2017  24.306849
28 2018  23.910137
29 2019  24.480548
30 2020  24.120492
31 2021  23.570411
32 2022  23.997087
```

Figure 1



(x, y) = (2008.01, 23.986)