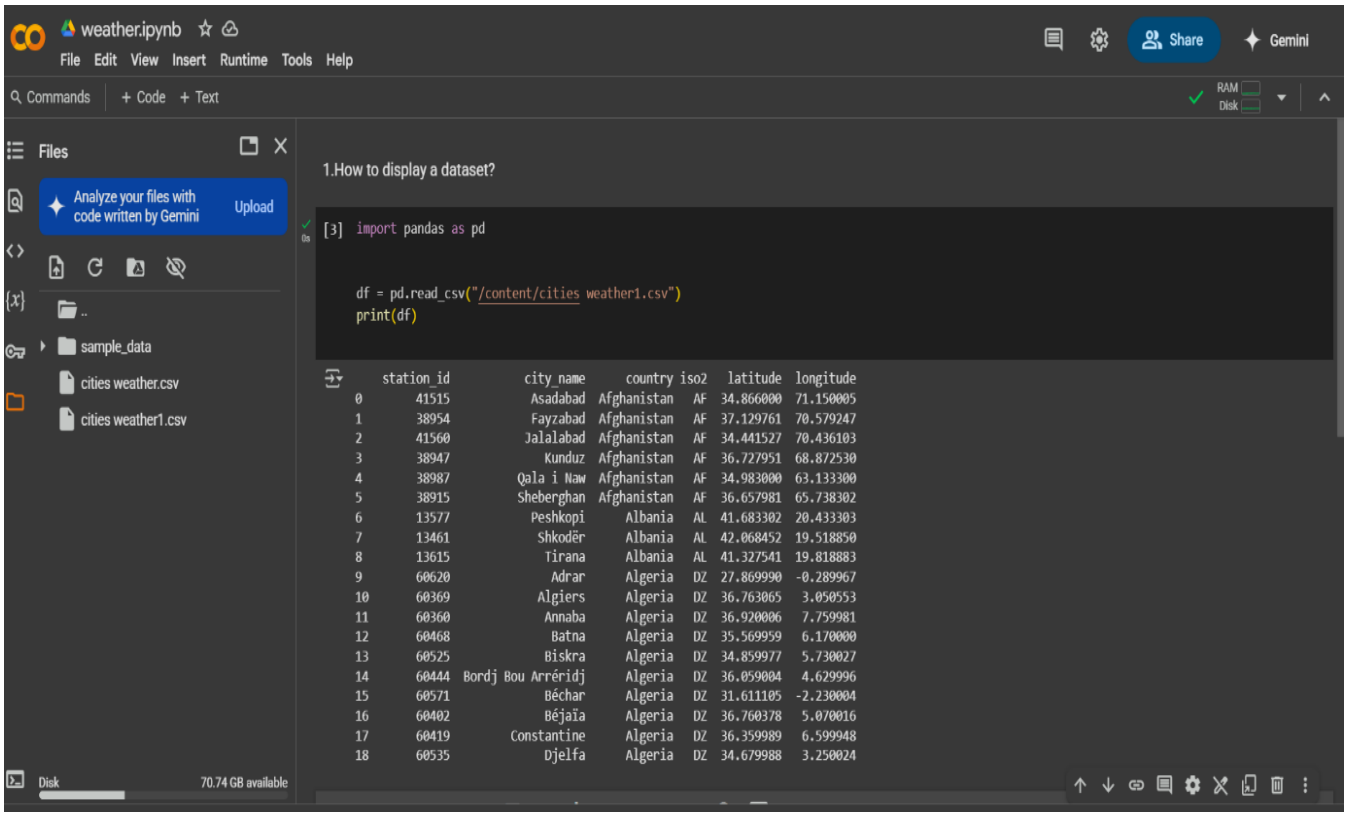
Name: Janhavi Hinganghatkar

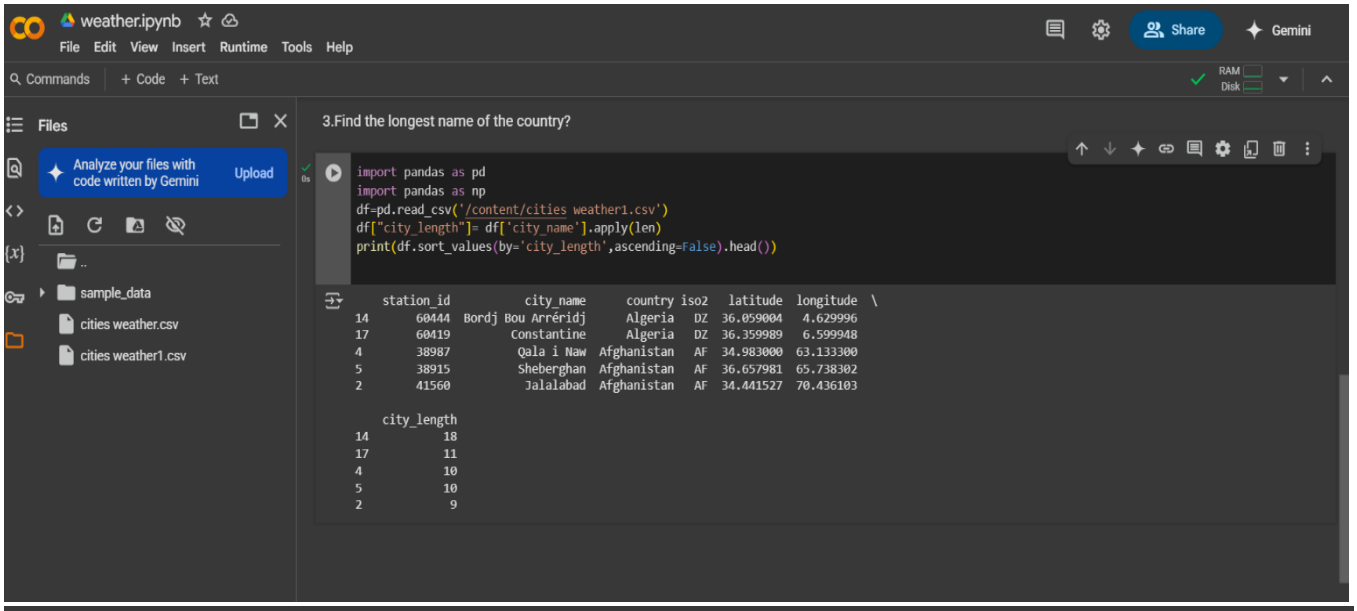
PRN: 202401100025

ROLL NO:CS5-85

EDS-ASSIGNMENT

DATASET:WEATHER

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sample_data
cities weather.csv
cities weather1.csv
3.Find the longest name of the country?
import pandas as pd
import pandas as np
df=pd.read_csv('/content/cities weather1.csv')
df["city_length"]= df['city_name'].apply(len)
print(df.sort_values(by='city_length',ascending=False).head())
station_id city_name country iso2 latitude longitude \
14 60444 Bordj Bou Arréridj Algeria DZ 36.059004 4.629996
17 60419 Constantine Algeria DZ 36.359989 6.599948
4 38987 Qala i Naw Afghanistan AF 34.983000 63.133300
5 38915 Sheberghan Afghanistan AF 36.657981 65.738302
2 41560 Jalalabad Afghanistan AF 34.441527 70.436103
city_length
14 18
17 11
4 10
5 10
2 9


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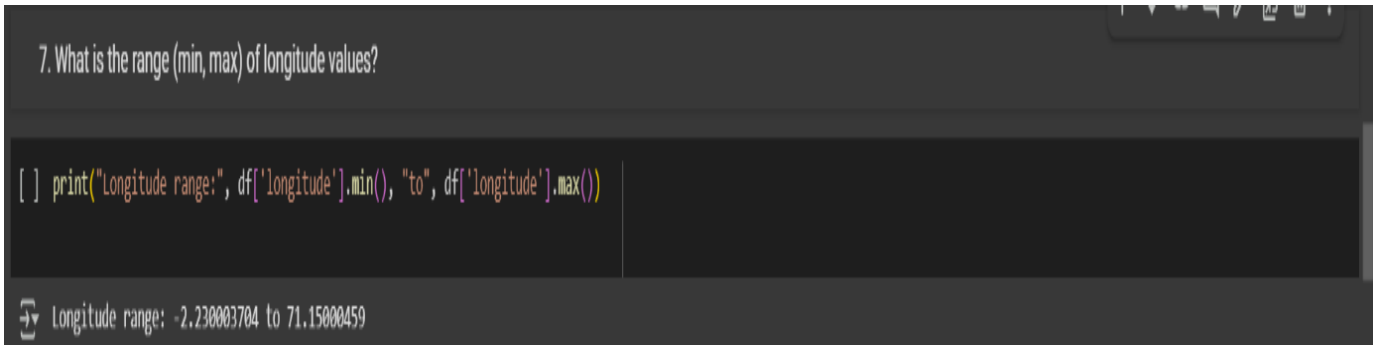
4.How many unique city names are there?
[6] print("Unique city names:", df['city_name'].nunique())
Unique city names: 19
5.List all the unique countries?
[7] print("Countries:\n", df['country'].unique())
Countries:
['Afghanistan' 'Albania' 'Algeria']
6.What is the range (min, max) of latitude values?
print("Latitude range:", df['latitude'].min(), "to", df['latitude'].max())
Latitude range: 27.86999005 to 42.06845156


7. What is the range (min, max) of longitude values?
[ ] print("Longitude range:", df['longitude'].min(), "to", df['longitude'].max())
Longitude range: -2.230003704 to 71.15000459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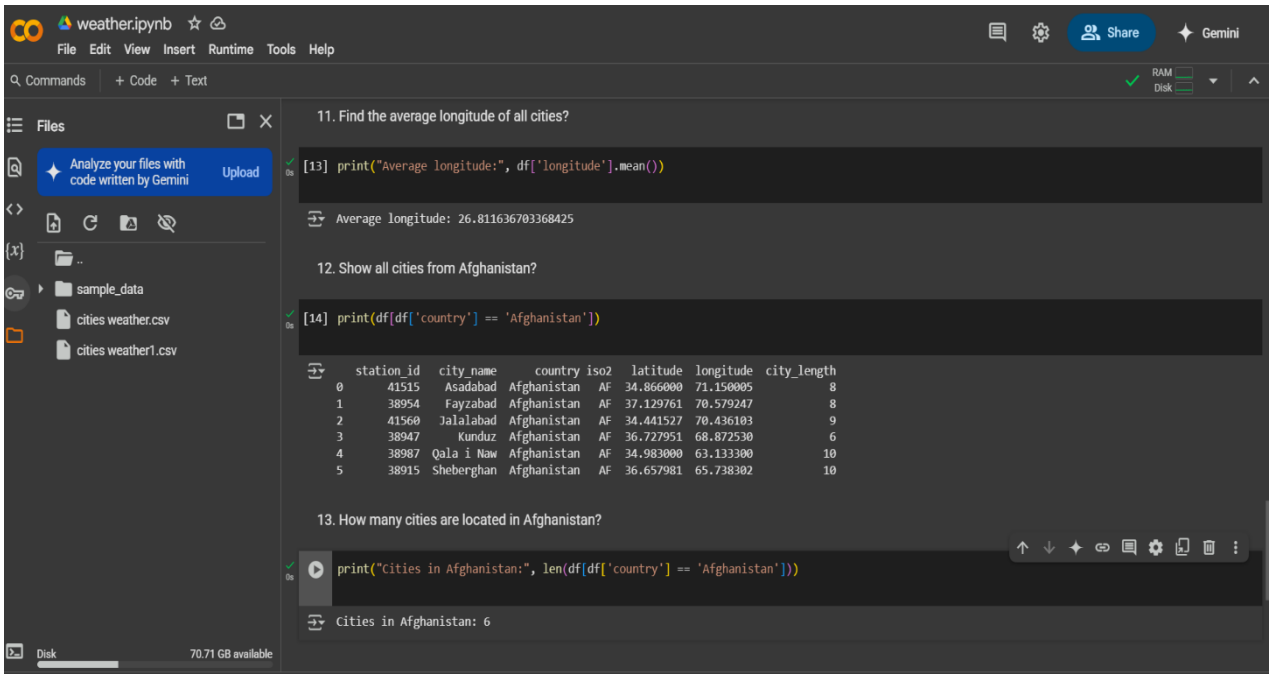
8. Find the city with the lowest longitude?
[10] city = df.loc[df['longitude'].idxmin()]
print("City with lowest longitude:", city['city_name'])
City with lowest longitude: Béchar
9. Find the city name and country where station_id is maximum?
[11] row = df.loc[df['station_id'].idxmax()]
print(f"City: {row['city_name']}, Country: {row['country']}")
City: Adrar, Country: Algeria
10. Find the average latitude of all cities?
print("Average latitude:", df['latitude'].mean())
Average latitude: 36.17573548526315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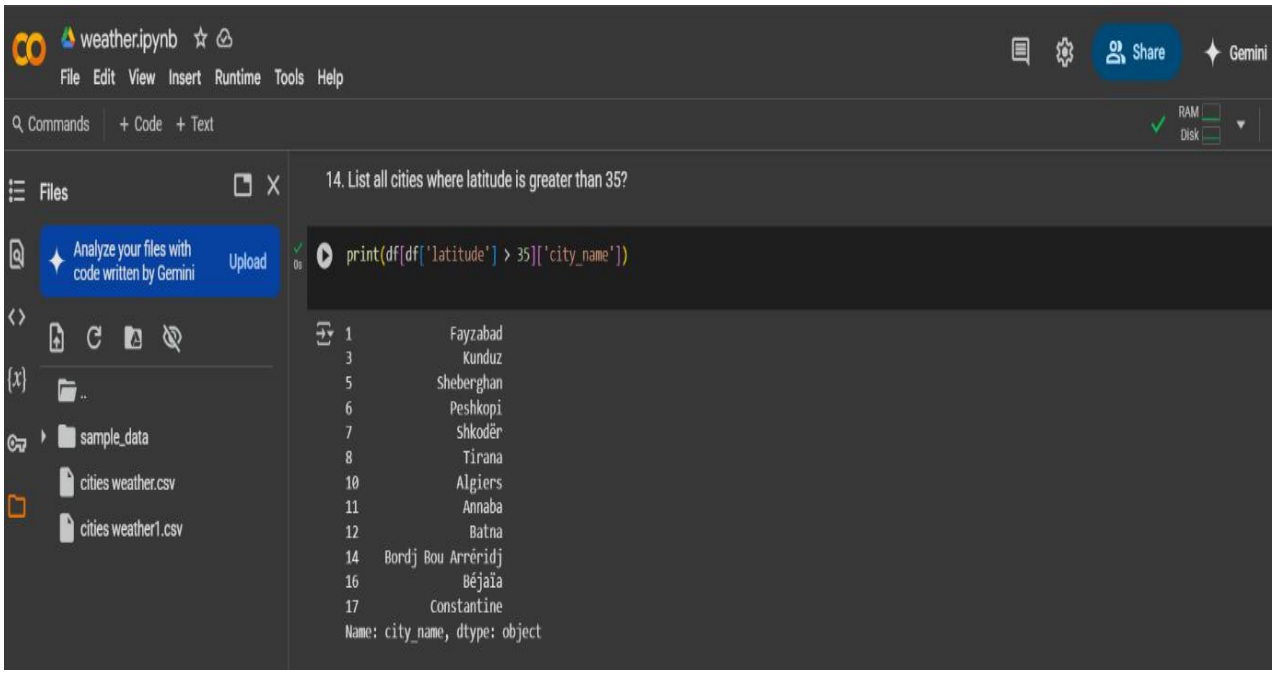
Disk 70.71 GB available
11. Find the average longitude of all cities?
[13] print("Average longitude:", df['longitude'].mean())
Average longitude: 26.811636703368425
12. Show all cities from Afghanistan?
[14] print(df[df['country'] == 'Afghanistan'])
station_id city_name country iso2 latitude longitude city_length
0 41515 Asadabad Afghanistan AF 34.866000 71.150005 8
1 38954 Fayzabad Afghanistan AF 37.129761 70.579247 8
2 41560 Jalalabad Afghanistan AF 34.441527 70.436103 9
3 38947 Kunduz Afghanistan AF 36.727951 68.872530 6
4 38987 Qala i Naw Afghanistan AF 34.983000 63.133300 10
5 38915 Sheberghan Afghanistan AF 36.657981 65.738302 10
13. How many cities are located in Afghanistan?
print("Cities in Afghanistan:", len(df[df['country'] == 'Afghanistan']))
Cities in Afghanistan: 6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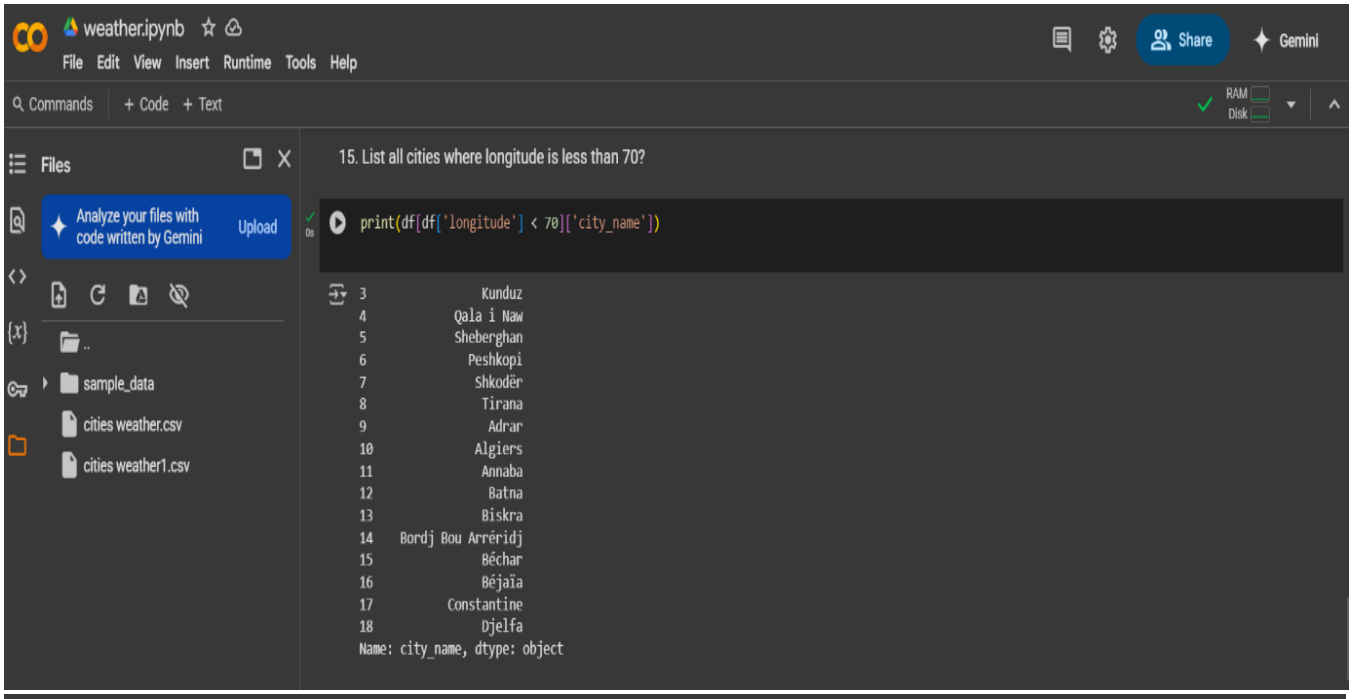
14. List all cities where latitude is greater than 35?
print(df[df['latitude'] > 35]['city_name'])
1 Fayzabad
3 Kunduz
5 Sheberghan
6 Peshkopi
7 Shkodër
8 Tirana
10 Algiers
11 Annaba
12 Batna
14 Bordj Bou Arréridj
16 Béjaïa
17 Constantine
Name: city_name, dtype: object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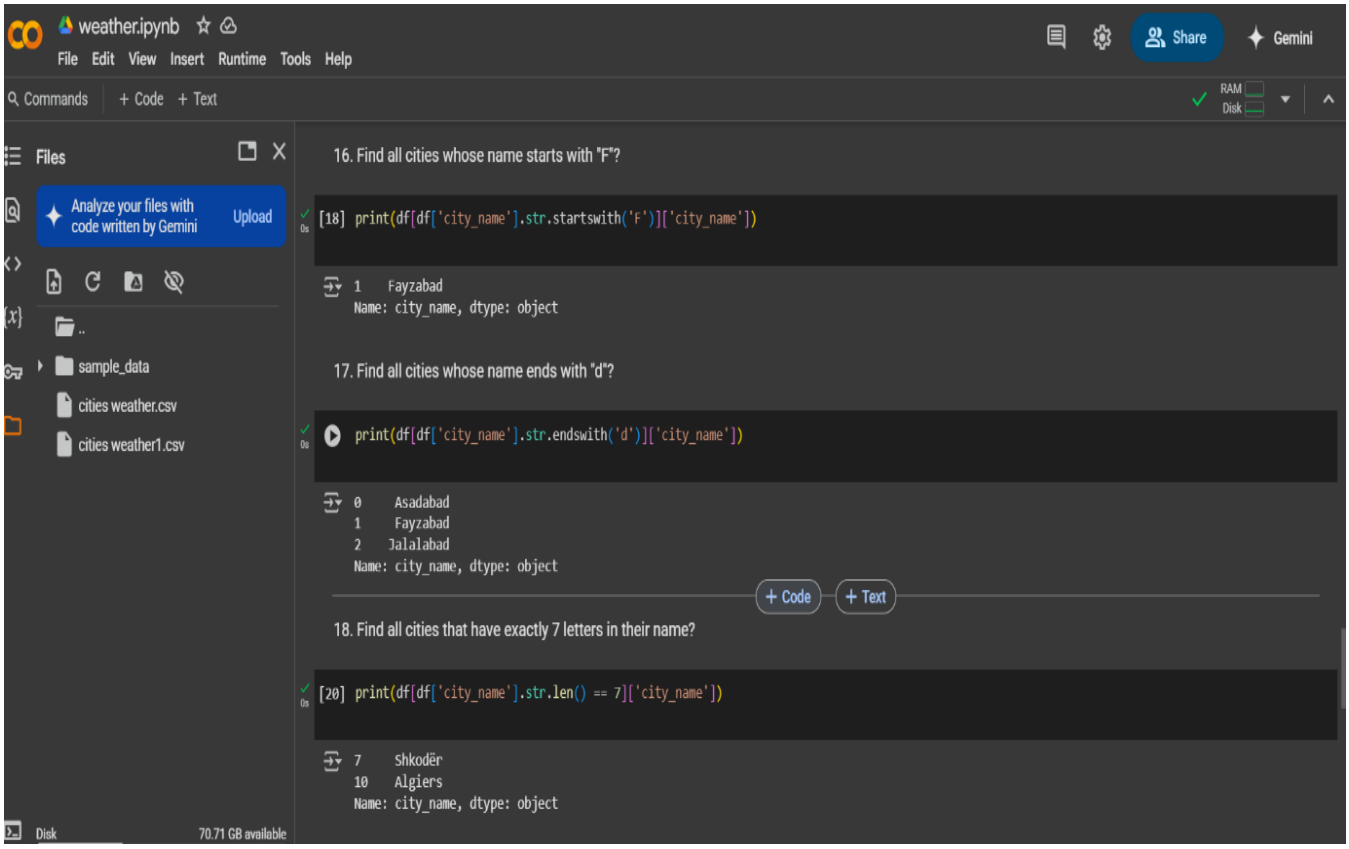
15. List all cities where longitude is less than 70?
print(df[df['longitude'] < 70]['city_name'])
3 Kunduz
4 Qala i Naw
5 Sheberghan
6 Peshkopi
7 Shkodër
8 Tirana
9 Adrar
10 Algiers
11 Annaba
12 Batna
13 Biskra
14 Bordj Bou Arréridj
15 Béchar
16 Béjaïa
17 Constantine
18 Djelfa
Name: city_name, dtype: object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16. Find all cities whose name starts with "F"?
[18] print(df[df['city_name'].str.startswith('F')]['city_name'])
1 Fayzabad
Name: city_name, dtype: object
17. Find all cities whose name ends with "d"?
print(df[df['city_name'].str.endswith('d')]['city_name'])
0 Asadabad
1 Fayzabad
2 Jalalabad
Name: city_name, dtype: object
+ Code
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18. Find all cities that have exactly 7 letters in their name?
[20] print(df[df['city_name'].str.len() == 7]['city_name'])
7 Shkodër
10 Algiers
Name: city_name, dtype: object
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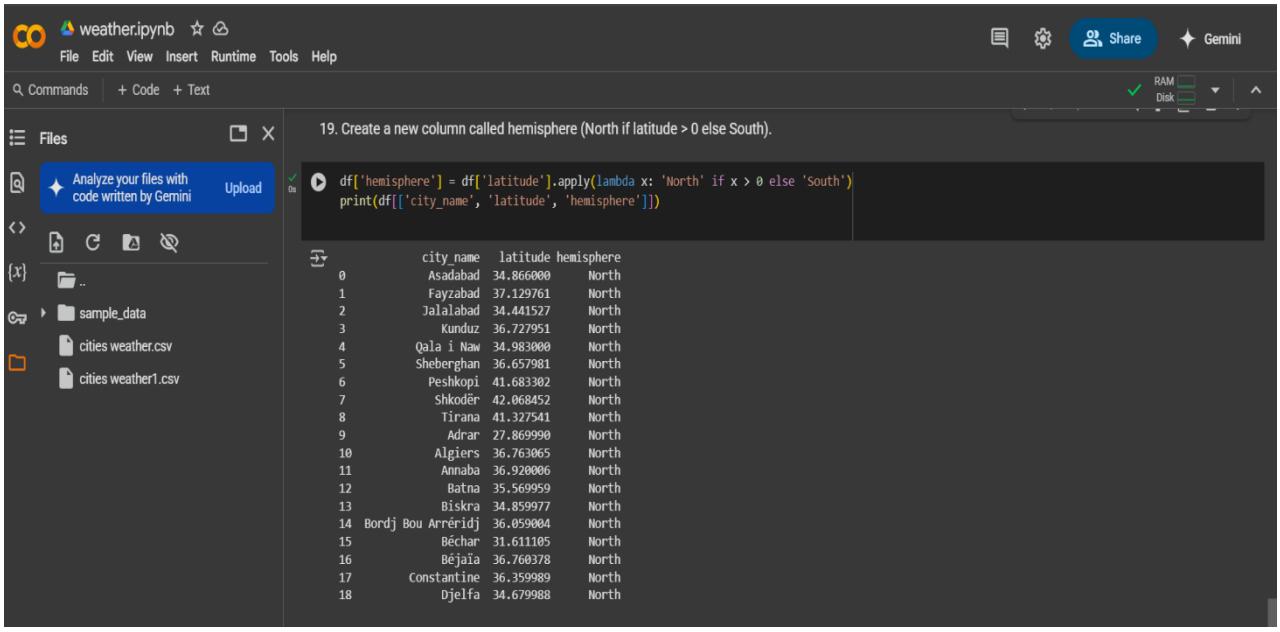
70.71 GB available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19. Create a new column called hemisphere (North if latitude > 0 else South).
df['hemisphere'] = df['latitude'].apply(lambda x: 'North' if x > 0 else 'South')
print(df[['city_name', 'latitude', 'hemisphere']])
city_name latitude hemisphere
0 Asadabad 34.866000 North
1 Fayzabad 37.129761 North
2 Jalalabad 34.441527 North
3 Kunduz 36.727951 North
4 Qala i Naw 34.983000 North
5 Sheberghan 36.657981 North
6 Peshkopi 41.683302 North
7 Shkodër 42.068452 North
8 Tirana 41.327541 North
9 Adrar 27.869990 North
10 Algiers 36.763065 North
11 Annaba 36.920006 North
12 Batna 35.569959 North
13 Biskra 34.859977 North
14 Bordj Bou Arréridj 36.059004 North
15 Béchar 31.611105 North
16 Béjaïa 36.760378 North
17 Constantine 36.359989 North
18 Djelfa 34.679988 North


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20. Count how many cities are in the Northern Hemisphere.
[22] print(df['hemisphere'].value_counts()['North'])
19