Bahria University

Karachi Campus



LAB EXPERIMENT NO.

04

LIST OF TASKS

|  |  |
| --- | --- |
| **TASK NO** | **OBJECTIVE** |
|  | In which year max no of fires were reported. |
|  | Find average number of fires reported from highest to lowest with reference to state. |
|  | Find the state names where fire was reported in Dec. |
|  | Report top 3 states where highest number of fires were reported. |
|  | Report fires from Bahia, Acre, and Rio fetch data from 2010 to 2015 and number of fires greater than 0. |
|  | Report year wise fires of the state with highest number of fires. |
|  | Find aggregate(sum, count, avg, max, min) of number of fires state wise. |

Submitted On:

**20-10-2023**

(Date: DD/MM/YY)

**Task # 01:**

**Solution:**

**CODE:**

import pandas as pd

dataset=pd.read\_csv("amazon.csv",encoding="latin-1")

dataset

max\_fires\_year = dataset.groupby('year')['number'].sum().idxmax()

print(f"Year with the maximum number of fires reported: {max\_fires\_year}")

**OUTPUT:**



**Task#02:**

**Solution:**

**CODE:**

import pandas as pd

dataframe =pd.read\_csv("amazon.csv",encoding="latin-1")

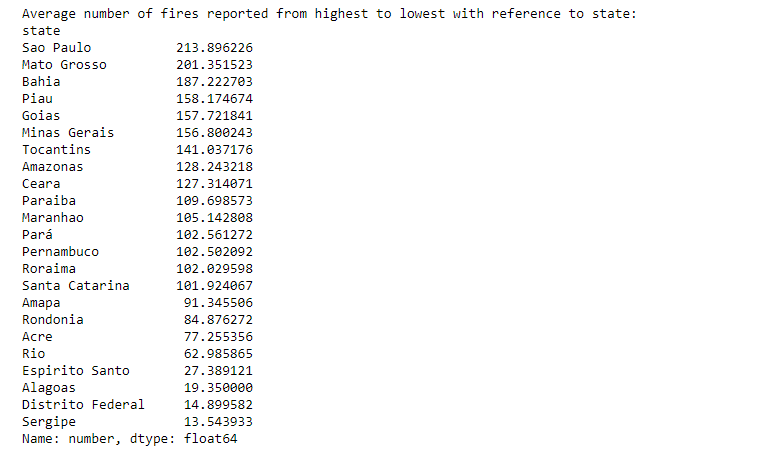
dataframe

avg\_fires\_by\_state = dataframe.groupby('state')['number'].mean().sort\_values(ascending=False)

print("Average number of fires reported from highest to lowest with reference to state:")

print(avg\_fires\_by\_state)

**output:**



**Task # 03:**

**Solution:**

**CODE:**

import pandas as pd

dataframe =pd.read\_csv("amazon.csv",encoding="latin-1")

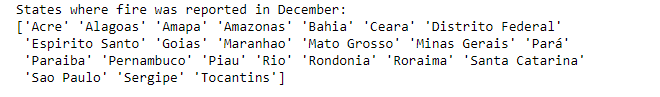
dataframe

december\_states = dataframe[dataframe['month'] == 'Dezembro']['state'].unique()

print("States where fire was reported in December:")

print(december\_states)

**output:**



**Task#04:**

**Solution:**

**CODE:**

import pandas as pd

dataframe =pd.read\_csv("amazon.csv",encoding="latin-1")

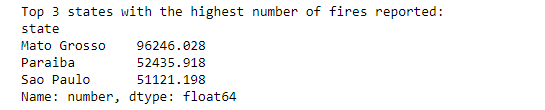
dataframe

top\_3\_states = dataframe.groupby('state')['number'].sum().sort\_values(ascending=False).head(3)

print("Top 3 states with the highest number of fires reported:")

print(top\_3\_states)

**OUTPUT:**



**Task # 05:**

**Solution:**

**CODE:**

import pandas as pd

dataframe =pd.read\_csv("amazon.csv",encoding="latin-1")

dataframe

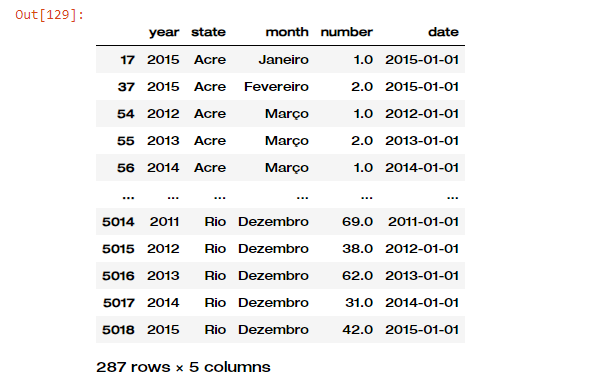
mask = (dataframe["state"] == "Rio") | (dataframe["state"] == "Acre") | (dataframe["state"] == "Bahia")

mask1=(dataframe["year"]> 2010) & (dataframe["year"] < 2016)

mask3=(dataframe["number"] >0)

dataframe[mask & mask1&mask3]

**OUTPUT:**



**Task # 06:**

**Solution:**

**CODE:**

import pandas as pd

dataframe =pd.read\_csv("amazon.csv",encoding="latin-1")

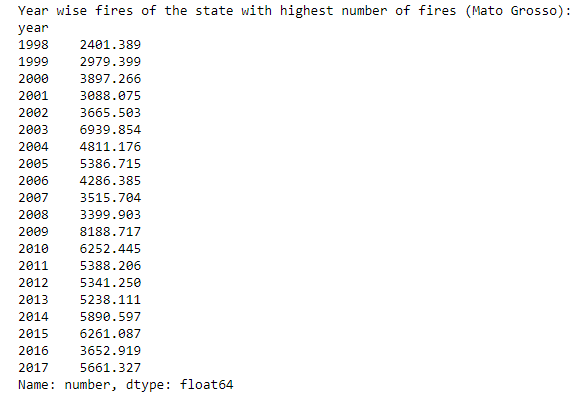
state\_with\_max\_fires = dataframe.groupby('state')['number'].sum().idxmax()

year\_wise\_fires = dataframe[dataframe['state'] == state\_with\_max\_fires].groupby('year')['number'].sum()

print(f"Year wise fires of the state with highest number of fires ({state\_with\_max\_fires}):")

print(year\_wise\_fires)

**OUTPUT:**



**Task # 07:**

**Solution:**

**CODE:**

import pandas as pd

dataframe =pd.read\_csv("amazon.csv",encoding="latin-1")

dataframe

state\_wise\_aggregate = dataframe.groupby('state')['number'].agg(['sum', 'count', 'mean', 'max', 'min'])

print("Aggregate (sum, count, mean, max, min) of number of fires state wise:")

print(state\_wise\_aggregate)

**OUTPUT:**

