Lab sheet -3

Aim- 1. Identify the missing value from csv file and replace them.

Date- 10/09/2024
Date of submission-

Code

```
import pandas as pd

file_path = "C:/Users/User/Downloads/Untitled spreadsheet.csv"
data = pd.read_csv(file_path, encoding='ISO-8859-1')

print("Initial Data:")
print(data.head())
print("\nMissing Values Per Column:")
print(data.isnull().sum())

# Replace missing values with zero
data_zero = data.fillna(0)
print("\nData with Missing Values Replaced by Zero:")
print(data_zero.head())

# Replace missing values with the mean of each column
data_mean = data.fillna(data.mean(numeric_only=True))
print("\nData with Missing Values Replaced by Mean:")
print(data_mean.head())

# Replace missing values with the median of each column
data_median = data.fillna(data.median(numeric_only=True))
print("\nData with Missing Values Replaced by Median:")
print(data_median.head())

# Replace missing values with the mode of each column
data_mode = data.copy()
for column in data.columns:
    mode_value = data_mode[column].mode()
    if not mode_value.empty:
        data_mode[column].fillna(mode_value[0], inplace=True)
print("\nData with Missing Values Replaced by Mode:")
print(data_mode.head())
```

Output

Initial Data:

	Time	Temperature (¢XC)	Latitude	Longitude
0	8:00 am	15.0	34.0522	-118.2437
1	9:00 am	17.0	34.0522	-118.2437
2	10:00 am	NaN	34.0522	-118.2437
3	11:00 am	NaN	34.0522	-118.2437
4	12:00 pm	NaN	34.0522	-118.2437

Missing Values Per Column:

Time	0
Temperature (¢XC)	3
Latitude	0
Longitude	0

dtype: int64

Data with Missing Values Replaced by Zero:

	Time	Temperature (¢XC)	Latitude	Longitude
0	8:00 am	15.0	34.0522	-118.2437
1	9:00 am	17.0	34.0522	-118.2437
2	10:00 am	0.0	34.0522	-118.2437
3	11:00 am	0.0	34.0522	-118.2437
4	12:00 pm	0.0	34.0522	-118.2437

Data with Missing Values Replaced by Mean:

	Time	Temperature (¢XC)	Latitude	Longitude
0	8:00 am	15.0	34.0522	-118.2437
1	9:00 am	17.0	34.0522	-118.2437
2	10:00 am	19.0	34.0522	-118.2437
3	11:00 am	19.0	34.0522	-118.2437
4	12:00 pm	19.0	34.0522	-118.2437

Data with Missing Values Replaced by Median:

	Time	Temperature (¢XC)	Latitude	Longitude
0	8:00 am	15.0	34.0522	-118.2437
1	9:00 am	17.0	34.0522	-118.2437
2	10:00 am	17.0	34.0522	-118.2437
3	11:00 am	17.0	34.0522	-118.2437
4	12:00 pm	17.0	34.0522	-118.2437

Data with Missing Values Replaced by Mode:

	Time	Temperature (¢XC)	Latitude	Longitude
0	8:00 am	15.0	34.0522	-118.2437
1	9:00 am	17.0	34.0522	-118.2437
2	10:00 am	15.0	34.0522	-118.2437
3	11:00 am	15.0	34.0522	-118.2437
4	12:00 pm	15.0	34.0522	-118.2437

Lab sheet -4

Aim- Write a program in python to reshape and filter data in given dataset.

Date- 10/09/2024
Date of submission-

Code

```
import pandas as pd

file_path = "C:/Users/NITJ-IT/Downloads/Untitled spreadsheet - Sheet1 (1).csv"  # Replace with your file path
df = pd.read_csv(file_path)

print("Original DataFrame:")
print(df)

pivot_df = df.pivot(index='Date', columns='City', values='Temperature')
pivot_df.reset_index(inplace=True)

print("\nPivoted DataFrame (Temperature by Date and City):")
print(pivot_df)

filtered_df = df[df['Temperature'] > 15]

print("\nFiltered DataFrame (Temperatures > 15°C):")
print(filtered_df)

ny_data = df[df['City'] == 'New York']

print("\nFiltered DataFrame (Data for New York):")
print(ny_data)

pivot_df.to_csv('pivoted_data.csv', index=False)
filtered_df.to_csv('filtered_data.csv', index=False)
ny_data.to_csv('ny_data.csv', index=False)

print("\nData saved to new CSV files.")
```

output

Original DataFrame:

	Date	City	Temperature	Humidity
0	2024-01-01	New York	5	80
1	2024-01-01	Los Angeles	20	50
2	2024-01-02	New York	3	85
3	2024-01-02	Los Angeles	22	45
4	2024-01-03	New York	2	90
5	2024-01-03	Los Angeles	25	40

Pivoted DataFrame (Temperature by Date and City):

City	Date	Los Angeles	New York
0	2024-01-01	20	5
1	2024-01-02	22	3
2	2024-01-03	25	2

Filtered DataFrame (Temperatures > 15°C):

	Date	City	Temperature	Humidity
1	2024-01-01	Los Angeles	20	50
3	2024-01-02	Los Angeles	22	45
5	2024-01-03	Los Angeles	25	40

Filtered DataFrame (Data for New York):

	Date	City	Temperature	Humidity
0	2024-01-01	New York	5	80
2	2024-01-02	New York	3	85
4	2024-01-03	New York	2	90

Data saved to new CSV files.

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