CODE

```
#import required libraries
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

#load the dataset
file_path = "/content/weather_forecast.csv"
df = pd.read_csv(file_path)

#display dataset info
print("\nDataset Information:\n")
print(df.info())

#display first few rows
print("\nFirst 5 Rows of Dataset:\n")
print(df.head())

#check for missing values
print("\nMissing Values in Each Column:\n")
print(df.isnull().sum())

#summary statistics (for numerical columns)
print("\nSummary Statistics:\n")
print(df.describe())
```

```
#convert date column to datetime and set index
if 'datetime_utc' in df.columns:
    df['datetime_utc'] = pd.to_datetime(df['datetime_utc'])
    df.set_index('datetime_utc', inplace=True)

#print column names to verify correct labels
print("\nColumn Names in Dataset:\n", df.columns)

#check missing values in the Temperature column
if 'temperature' in df.columns:
    print("\nMissing Values in Temperature Column:",
df['temperature'].isnull().sum())
    print("Data Type of Temperature Column:", df['temperature'].dtype)

#handle missing values
numeric_cols = df.select_dtypes(include=['number']).columns
df[numeric_cols] = df[numeric_cols].fillna(df[numeric_cols].mean())

#bar Plot of Temperature Trends
plt.figure(figsize=(12, 6))
df['temperature'].plot(kind='bar', color='skyblue', width=0.8)
plt.xlabel("Date")
plt.ylabel("Temperature (°C)")
plt.title("Temperature Trends Over Time (Bar Plot)")
plt.xticks(rotation=45)
plt.grid(axis='y', linestyle='--', alpha=0.7)
plt.tight_layout()
plt.show()
```

```
#line Plot of Temperature Trends
plt.figure(figsize=(12, 6))
df['temperature'].plot(kind='line', color='red', marker='o')
plt.xlabel("Date")
plt.ylabel("Temperature (°C)")
plt.title("Temperature Trends Over Time (Line Plot)")
plt.grid(True)
plt.tight_layout()
plt.show()

#scatter Plot for Temperature vs. Humidity
if 'humidity' in df.columns:
    plt.figure(figsize=(10, 5))
    sns.scatterplot(x=df['temperature'], y=df['humidity'], color='blue')
    plt.xlabel("Temperature (°C)")
    plt.ylabel("Humidity (%)")
    plt.title("Temperature vs Humidity Scatter Plot")
    plt.grid(True)
    plt.show()
```