In [ ]:
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#lab 10
#Q1. Apply regular expression for form validation. Create your domain-form using
#Module.
#➔ Form should contain Text box [For Name, Email Id, Phone number], Dropdown [f
#Gender], Spinbox [for Year/DoB] and other necessary widgets required for your
#domain.
#➔ Validate Your Name, Email Id, Phone number in the form.

import tkinter as tk
from tkinter import messagebox
import re
from datetime import datetime

def validate_form():
    student_name = student_name_entry.get()
    gender = gender_var.get()
    dob = dob_entry.get()
    email = email_entry.get()
    room_no = room_no_entry.get()

    # Regular expression for a valid email address
    email_pattern = r'^[\w\.-]+@[\w\.-]+$'

    # Regular expression pattern for student name (alphabets only)
    student_name_pattern = r'^[a-zA-Z\s]+$'

    # Regular expression pattern for DOB (YYYY-MM-DD)
    dob_pattern = r'^\d{4}-\d{2}-\d{2}$'

    # Validate student name
    if not student_name or not re.match(student_name_pattern, student_name):
        messagebox.showerror("Error", "Please enter a valid student name (alphab
        return

    # Validate gender
    if not gender:
        messagebox.showerror("Error", "Please select gender.")
        return

    # Validate date of birth (DOB)
    if not re.match(dob_pattern, dob):
        messagebox.showerror("Error", "Invalid date of birth format. Use YYYY-MM
        return

    # Validate email
    if not re.match(email_pattern, email):
        messagebox.showerror("Error", "Please enter a valid email address.")
        return

    # Validate room number
    if not room_no.isdigit() or int(room_no) <= 0:
        messagebox.showerror("Error", "Please enter a valid room number.")
        return

    # If all validations pass, show a success message
    messagebox.showinfo("Success", "Form submitted successfully!")

# Create the main window
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root = tk.Tk()
root.title("Hostel Management Form")

# Create and pack widgets
tk.Label(root, text="Student Name:").pack()
student_name_entry = tk.Entry(root)
student_name_entry.pack()

tk.Label(root, text="Gender:").pack()
gender_var = tk.StringVar()
gender_var.set("Male")  # Default value
tk.Radiobutton(root, text="Male", variable=gender_var, value="Male").pack()
tk.Radiobutton(root, text="Female", variable=gender_var, value="Female").pack()

tk.Label(root, text="Date of Birth (YYYY-MM-DD):").pack()
dob_entry = tk.Entry(root)
dob_entry.pack()

tk.Label(root, text="Email:").pack()
email_entry = tk.Entry(root)
email_entry.pack()

tk.Label(root, text="Room Number:").pack()
room_no_entry = tk.Entry(root)
room_no_entry.pack()

tk.Button(root, text="Submit", command=validate_form).pack()

# Start the Tkinter main loop
root.mainloop()
```

In [ ]:

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#lab 11
#Perform the Exploratory Data Analysis on your domain-based dataset and demonstr
#the retrieved insights using “Matplotlib” modules. Visualize hidden insights us
#plots (graphs) [Usage of line plot and scatter plot are mandat\
#line graph
import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv("C:/python/train.csv")
df_1_rows=df.head(20)

HUMIDITY=df_1_rows['Humidity'].tolist()
TEMP=df_1_rows['Temp'].tolist()
plt.plot(TEMP,HUMIDITY)
plt.title("Line Graph")
plt.xlabel("Temp")
plt.ylabel("Humidity")
plt.grid(True)

# Show the graph
plt.show()
```
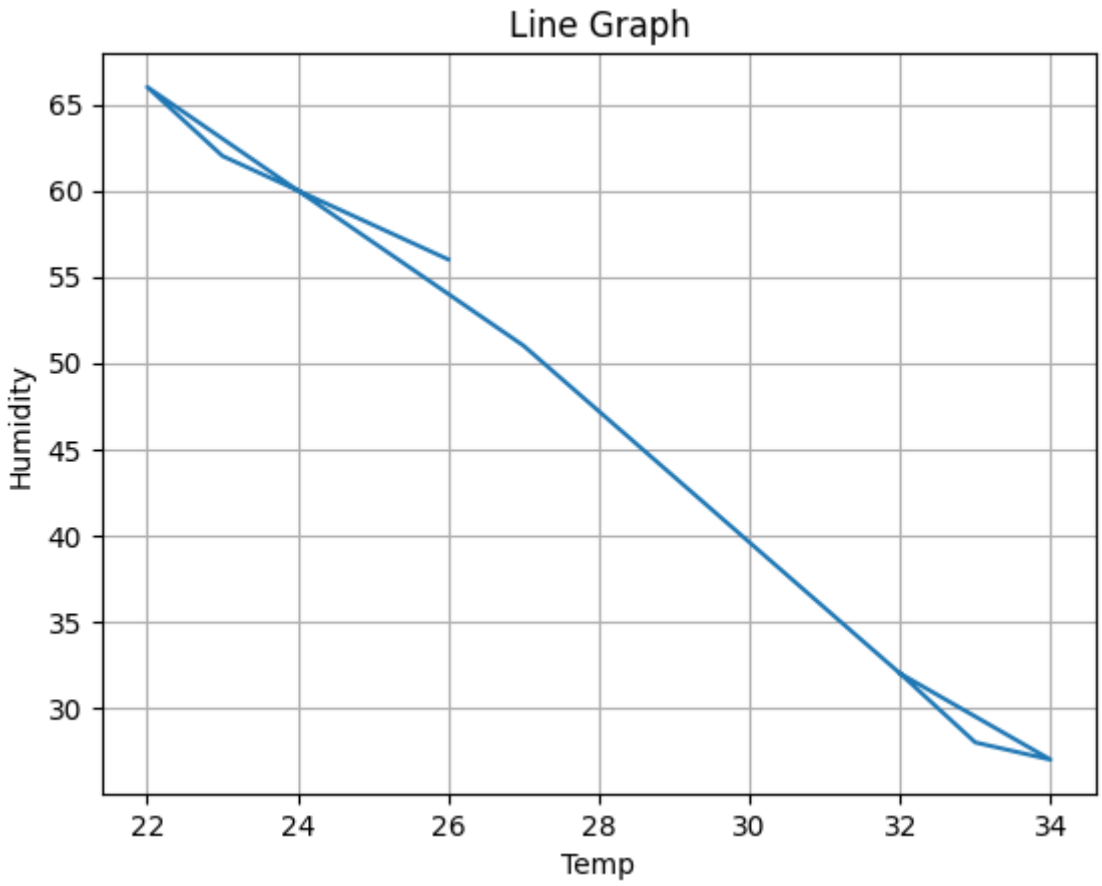
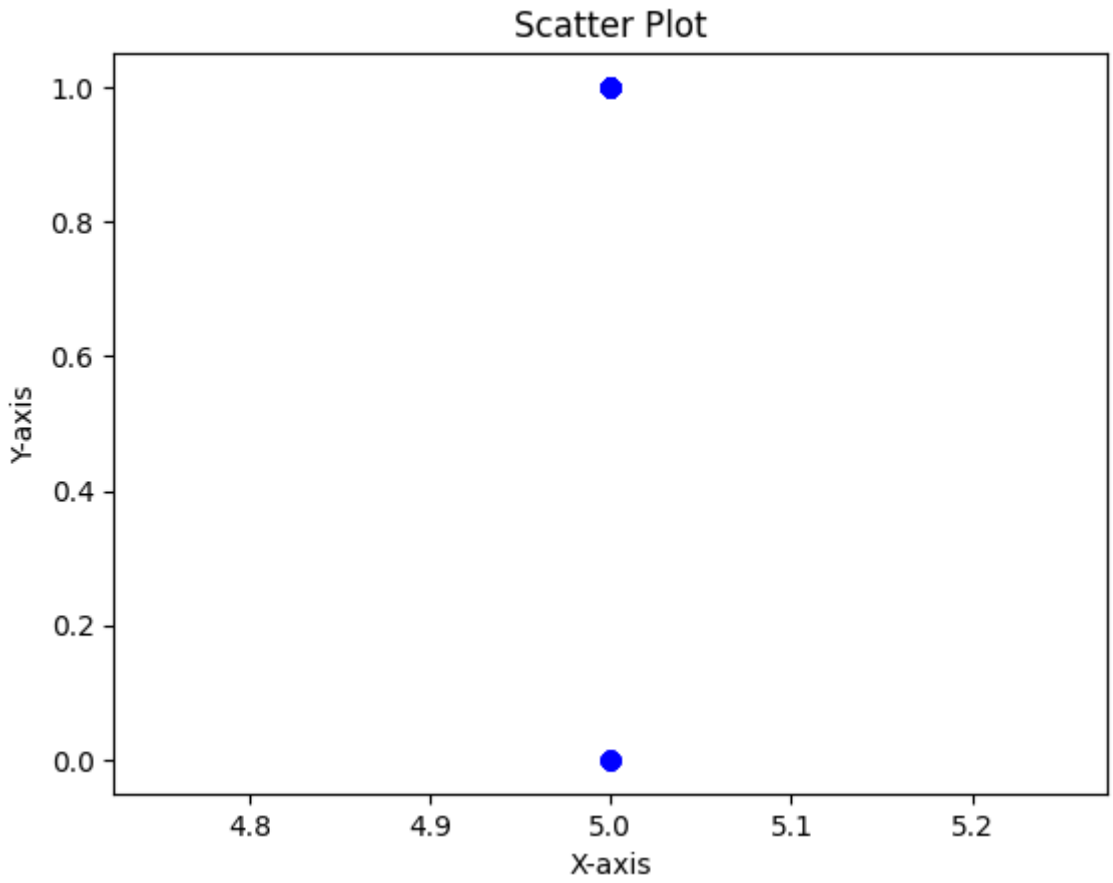



In [ ]:
```python
#scatter plot
import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv("C:/python/train.csv")
df_1_rows=df.head(5)

occupacy=df_1_rows['Occupancy'].tolist()
month=df_1_rows['Month'].tolist()
plt.scatter(month, occupacy, marker='o', color='blue', label='Data Points')
plt.title("Scatter Plot")
plt.xlabel("X-axis")
plt.ylabel("Y-axis")
# plt.legend()
plt.show()
```



In [ ]:
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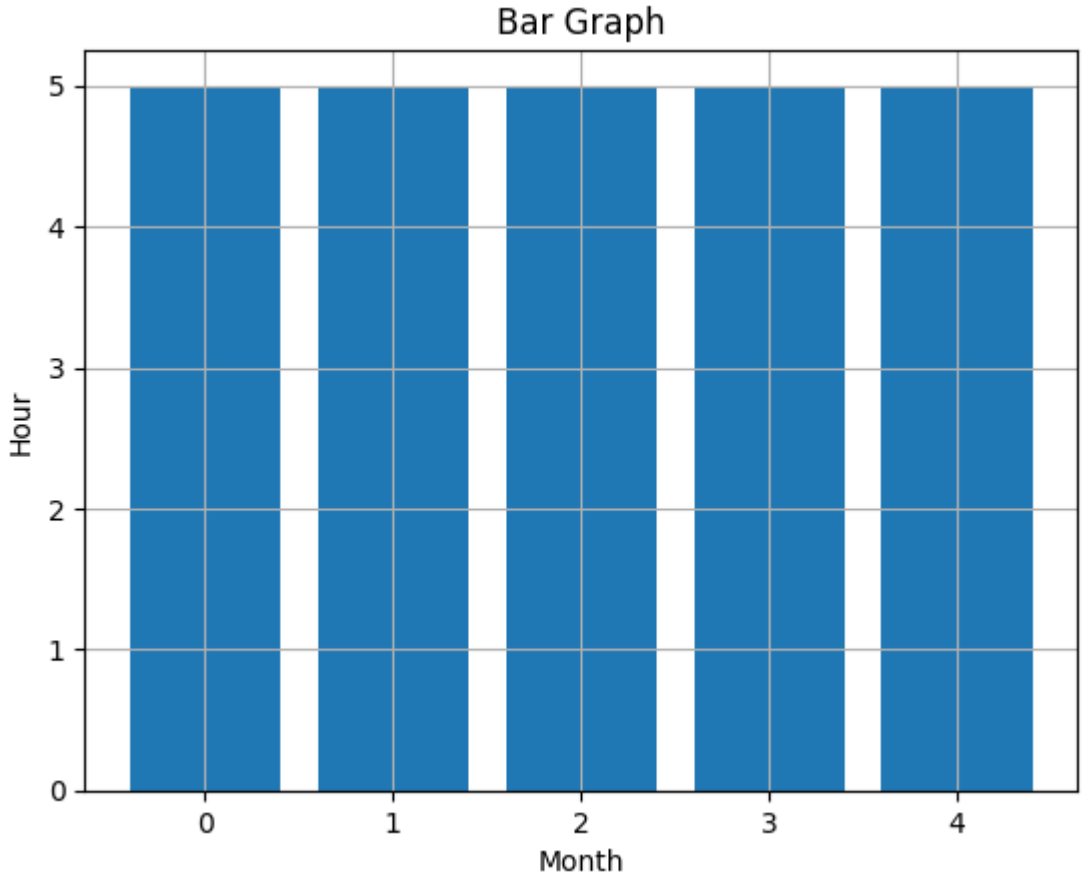
#bar graph
import pandas as pd
import matplotlib.pyplot as plt


df = pd.read_csv('C:/python/train.csv')
df_1_rows=df.head(5)
hour=df_1_rows['Hour'].tolist()
month=df_1_rows['Month'].tolist()
plt.bar(hour,month)
plt.title("Bar Graph")
plt.xlabel("Month")
plt.ylabel("Hour")
plt.grid(True)
plt.show()
```


Bar Graph
Hour
Month
0
1
2
3
4
5
0
1
2
3
4