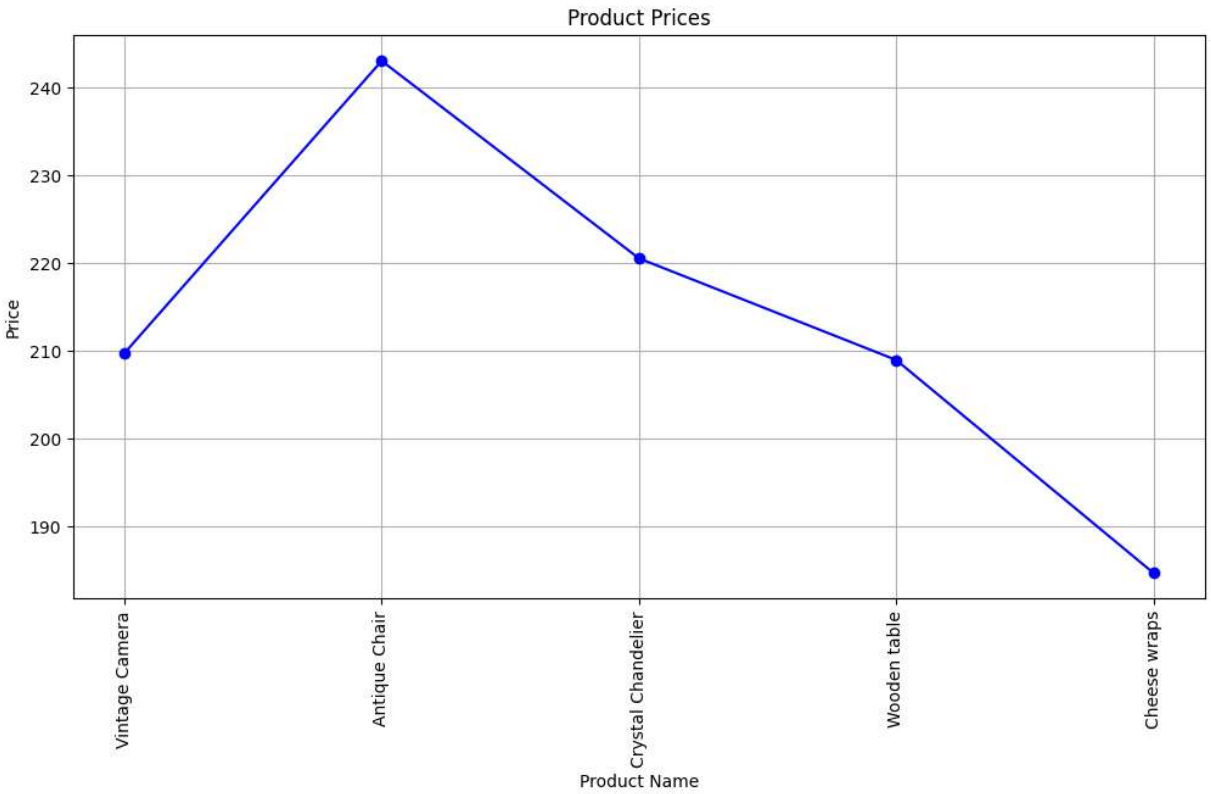
In [ ]:

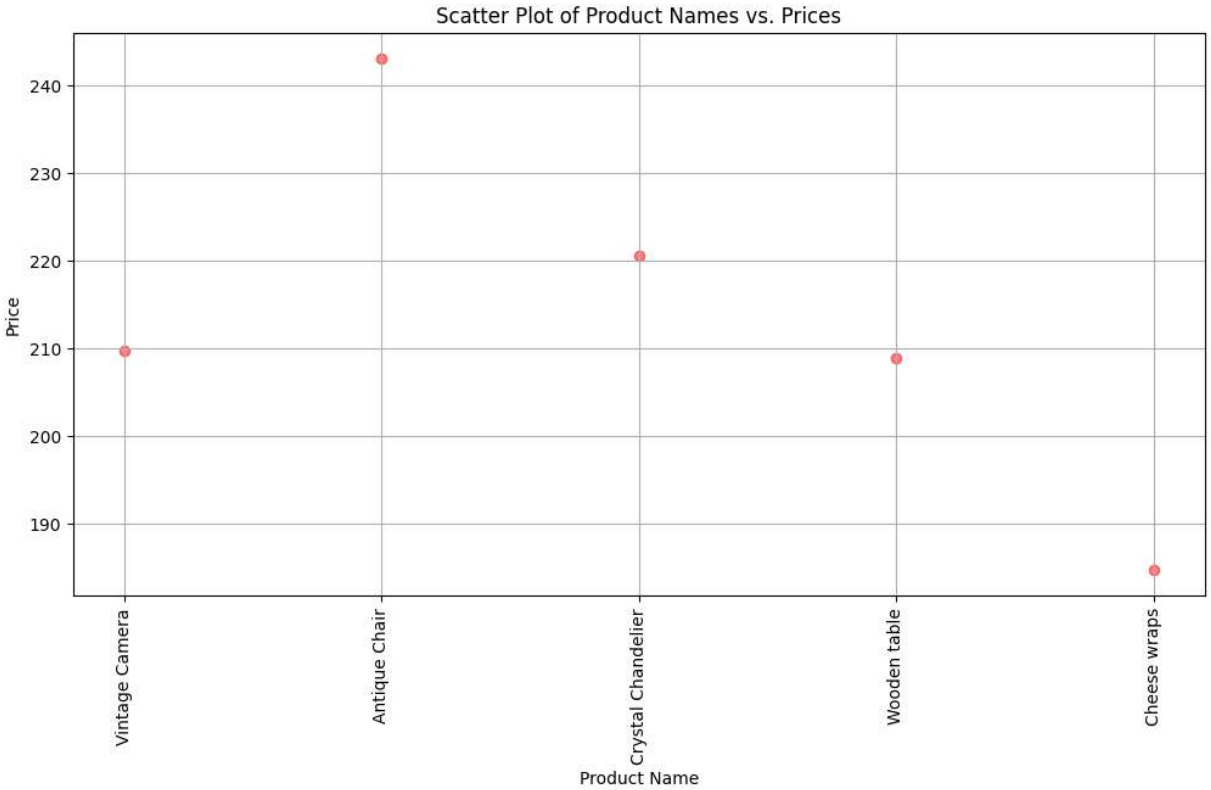
```
from tkinter import Tk, Label, Entry, Button, StringVar, OptionMenu, Spinbox
import re

def validate_input(input_text, regex):
    return re.match(regex, input_text) is not None

name_regex = r"^[A-Za-z\s]+$"
email_regex = r"^[a-zA-Z0-9_.+-]+@[a-zA-Z0-9-]+\.[a-zA-Z0-9-.]+$"
phone_regex = r"^\d{10}$"

root = Tk()
root.title("Photography Prop Store")

name_label = Label(root, text="Customer Name:")
name_label.grid(row=0, column=0)
name_entry = Entry(root)
name_entry.grid(row=0, column=1)

email_label = Label(root, text="Customer Email:")
email_label.grid(row=1, column=0)
email_entry = Entry(root)
email_entry.grid(row=1, column=1)

phone_label = Label(root, text="Customer Phone Number:")
phone_label.grid(row=2, column=0)
phone_entry = Entry(root)
phone_entry.grid(row=2, column=1)

gender_label = Label(root, text="Gender:")
gender_label.grid(row=3, column=0)
gender_var = StringVar(root)
gender_var.set("Male")
gender_option = OptionMenu(root, gender_var, "Male", "Female", "Other")
gender_option.grid(row=3, column=1)

year_label = Label(root, text="Year/DoB:")
year_label.grid(row=4, column=0)
year_spinbox = Spinbox(root, from_=1900, to=2023)
year_spinbox.grid(row=4, column=1)

def validate_form():
    name = name_entry.get()
    email = email_entry.get()
    phone = phone_entry.get()

    if not validate_input(name, name_regex):
        error_label.config(text="Invalid Name", fg="red")
    elif not validate_input(email, email_regex):
        error_label.config(text="Invalid Email", fg="red")
    elif not validate_input(phone, phone_regex):
        error_label.config(text="Invalid Phone Number", fg="red")
    else:
        error_label.config(text="Form submitted successfully", fg="green")
```

```
submit_button = Button(root, text="Submit", command=validate_form)
submit_button.grid(row=5, column=0, columnspan=2)

error_label = Label(root, text="")
error_label.grid(row=6, column=0, columnspan=2)

root.mainloop()
```

In [ ]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

# Generate random product names
np.random.seed(0)
num_products = 5
product_names = ['Vintage Camera','Antique Chair','Crystal Chandelier','Wooden tabl

# Generate random prices for the products
prices = np.random.uniform(100, 300, num_products).round(2)

# Create a DataFrame
data = pd.DataFrame({'Product Name': product_names, 'Price': prices})

# Display the first few rows of the DataFrame
print(data.head())


plt.figure(figsize=(12, 6))
plt.plot(data['Product Name'], data['Price'], marker='o', linestyle='-', color='b')
plt.title('Product Prices')
plt.xlabel('Product Name')
plt.ylabel('Price')
plt.xticks(rotation=90)  # Rotate x-axis labels for better readability
plt.grid(True)
plt.show()


plt.figure(figsize=(12, 6))
plt.scatter(data['Product Name'], data['Price'], color='r', alpha=0.5)
plt.title('Scatter Plot of Product Names vs. Prices')
plt.xlabel('Product Name')
plt.ylabel('Price')
plt.xticks(rotation=90)  # Rotate x-axis labels for better readability
plt.grid(True)
plt.show()
```

```
        Product Name   Price
0      Vintage Camera  209.76
1       Antique Chair  243.04
2  Crystal Chandelier  220.55
3        Wooden table  208.98
4        Cheese wraps  184.73
```


Product Prices
Price
240
230
220
210
200
190
Vintage Camera
Antique Chair
Crystal Chandelier
Wooden table
Cheese wraps
Product Name


Scatter Plot of Product Names vs. Prices
Price
240
230
220
210
200
190
Vintage Camera
Antique Chair
Crystal Chandelier
Wooden table
Cheese wraps
Product Name