

In [9]:

```
# Import necessary libraries
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error
import matplotlib.pyplot as plt

# Load the agricultural dataset
data = pd.read_csv('csv[1]')

# Display the first 5 rows of the dataset
print(data.head(5))

# Define features
X = data[['min_price', 'max_price']]
y = data['modal_price']

# Visualize the data
plt.figure(figsize=(12, 6))

# Scatter plots for each feature
for i, feature in enumerate(X.columns):
    plt.subplot(1, 2, i + 1)
    plt.scatter(X[feature], y, marker='o')
    plt.title(f'{feature} vs. Modal Price')
    plt.xlabel(feature)
    plt.ylabel('Modal Price')

plt.tight_layout()
plt.show()

# Split the dataset into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Initialize the Linear Regression model
model = LinearRegression()

# Fit the model on the training data
model.fit(X_train, y_train)

# Make predictions on the test data
y_pred = model.predict(X_test)

# Calculate the Mean Squared Error to evaluate the model's performance
mse = mean_squared_error(y_test, y_pred)
print(f"Mean Squared Error: {mse}")

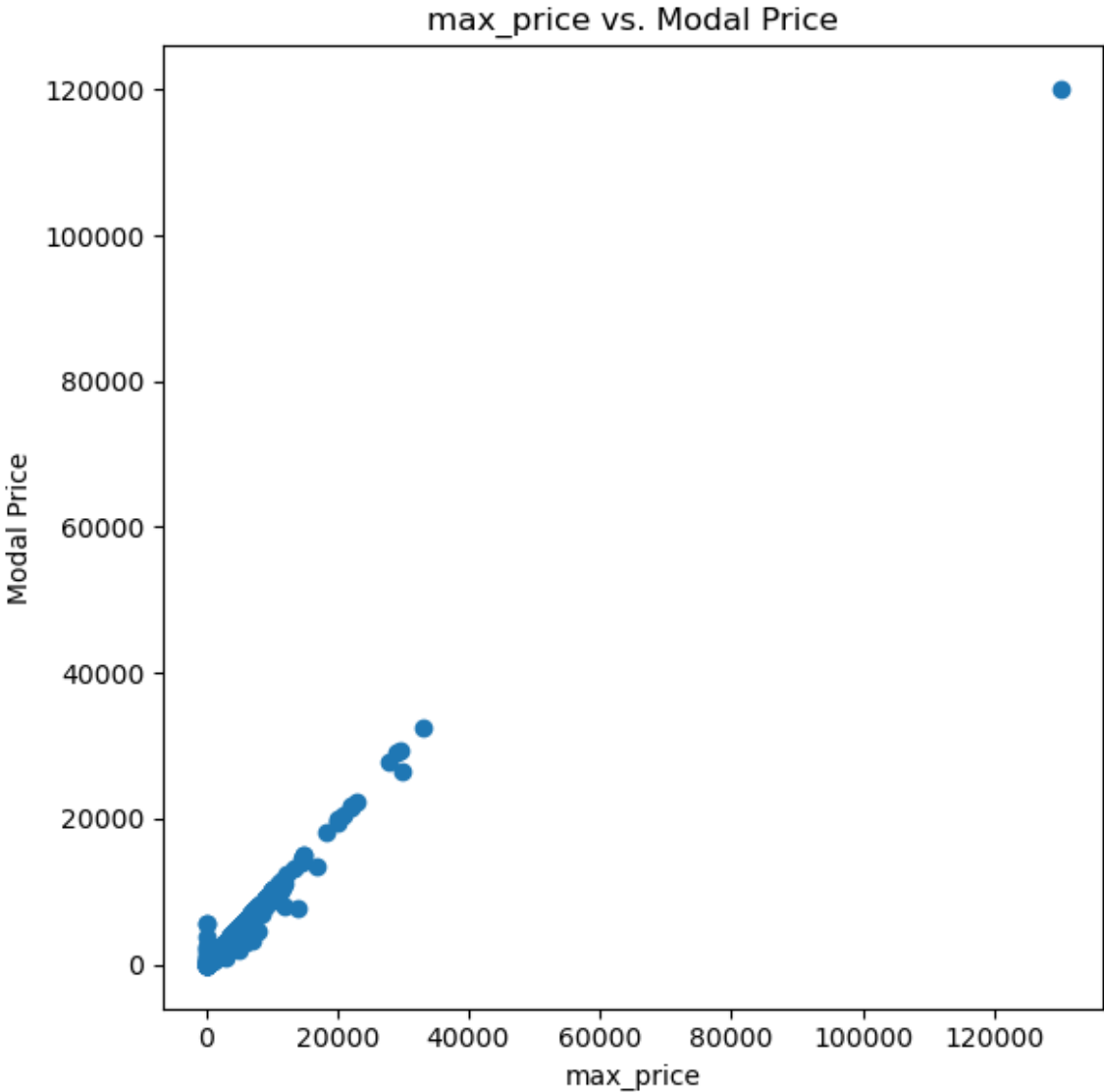
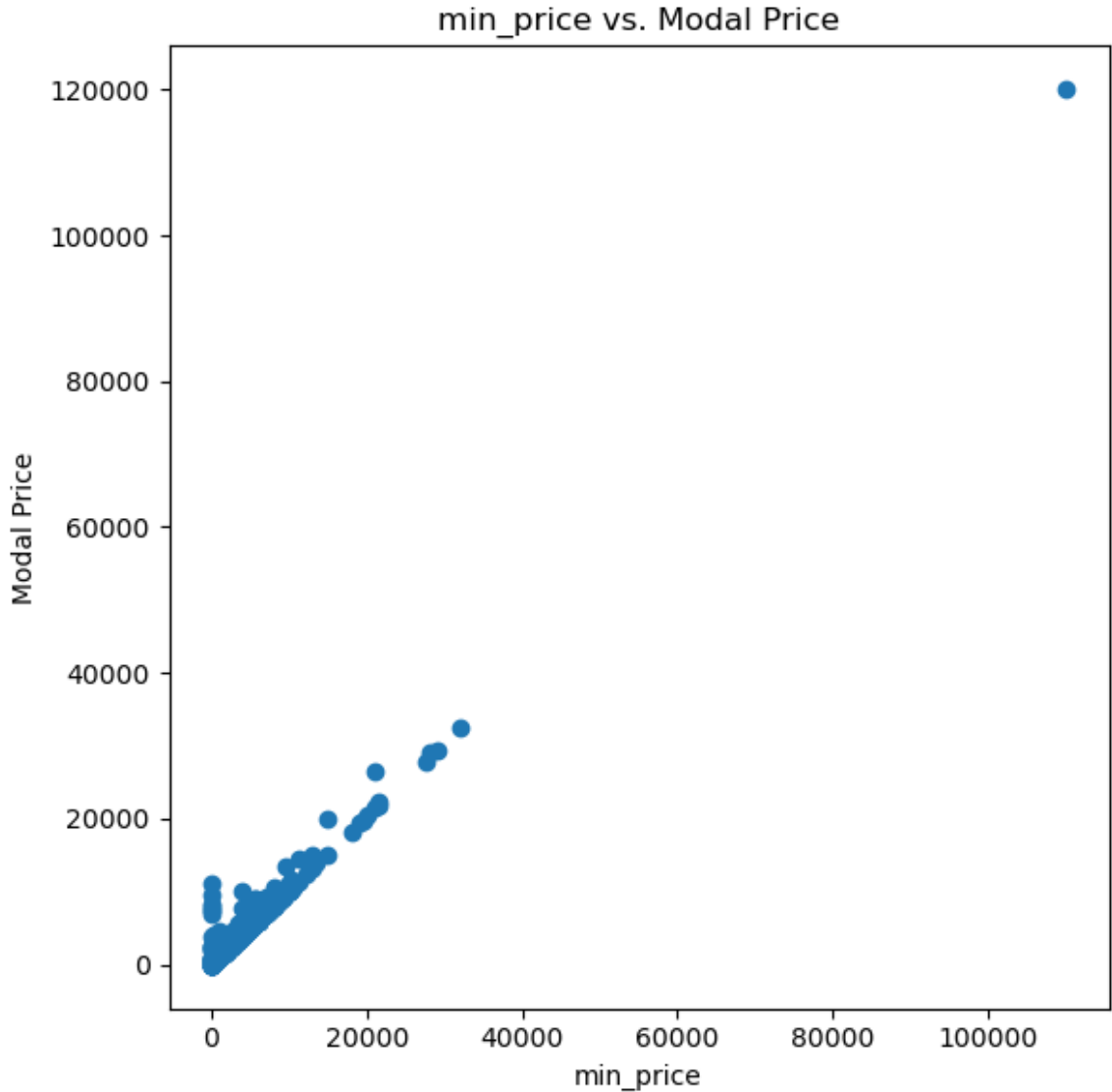
# Visualize the predicted vs. actual modal price
plt.figure(figsize=(8, 6))
plt.scatter(y_test, y_pred)
plt.xlabel('Actual Modal Price')
plt.ylabel('Predicted Modal Price')
plt.title('Actual Modal Price vs. Predicted Modal Price')
plt.show()

# Now, you can use the trained model to predict modal prices for new data
new_data = pd.DataFrame({
    'min_price': [10.5],
    'max_price': [15.7]
})

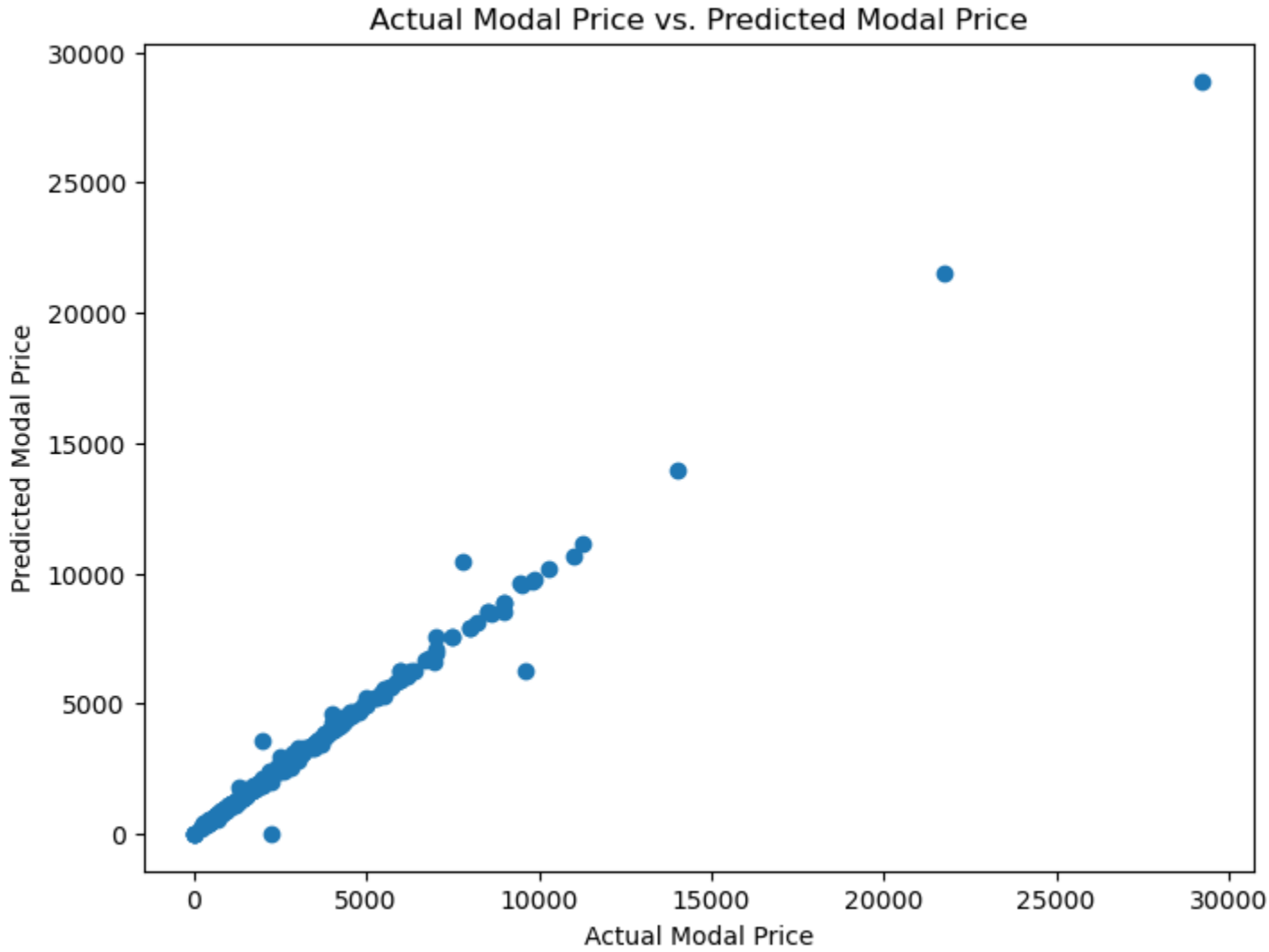
predicted_modal_price = model.predict(new_data)
print(f"Predicted Modal Price: {predicted_modal_price[0]}")
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	state	district	market	commodity \
0	Andaman and Nicobar	South Andaman	Port Blair	Amaranthus
1	Andaman and Nicobar	South Andaman	Port Blair	Banana - Green
2	Andaman and Nicobar	South Andaman	Port Blair	Bhindi(Ladies Finger)
3	Andaman and Nicobar	South Andaman	Port Blair	Bitter gourd
4	Andaman and Nicobar	South Andaman	Port Blair	Black pepper

	variety	arrival_date	min_price	max_price	modal_price
0	Amaranthus	04/03/2019	6000	8000	7000
1	Banana - Green	04/03/2019	4500	5500	5000
2	Bhindi	04/03/2019	6000	8000	7000
3	Other	04/03/2019	6000	8000	7000
4	Other	04/03/2019	110000	130000	120000



Mean Squared Error: 66358.66328386214



Predicted Modal Price: 38.004064230464444