**TASK 3 :**

**Data Scientist Roles Research :**

 **Data Collection and Preparation**: Data scientists gather data from various sources, ensuring its quality and relevance. They clean, preprocess, and transform raw data into a structured format suitable for analysis. This step is crucial for accurate and meaningful insights.

 **Data Analysis and Modeling**: They apply statistical and machine learning techniques to analyze data, identify patterns, and build predictive models. This involves selecting appropriate algorithms, training models, and validating their performance to ensure reliability.

 **Communication and Collaboration**: Data scientists interpret complex analytical results and present them in a clear, actionable manner to stakeholders. They collaborate with cross-functional teams to implement data-driven solutions that align with business objectives.

**Explanation:**

1. **Data Collection**: We create a random dataset for simplicity.
2. **Data Preparation**: We check for any missing values in the dataset (this step could be more complex with real-world data).
3. **Data Analysis and Modeling**: We use linear regression to build a model and make predictions.
4. **Evaluation**: We calculate the model’s performance with mean squared error.
5. **Visualization**: We visualize the predicted vs actual values to assess model performance.