**INTERPRETATION**

**2311089**

**1. ANOVA Test:**

* No significant difference in profits across states.
* State was not used as a feature in the model.

**2. Outliers:**

* No major outliers in "R&D Spend," "Administration," or "Marketing Spend."
* One outlier found in "Profit," but it wasn’t removed as it didn’t affect the results significantly.

**3. Mean and Median:**

* All variables appear to have a balanced and symmetrical distribution.

**4. Skewness and Kurtosis:**

* **Skewness**: Shows the data is symmetrical.
* **Kurtosis**: Indicates high-value data points in the "Administration" variable.

**5. Correlation:**

* **R&D Spend**: Strongest correlation with profit (0.9729).
* **Marketing Spend**: Positive but weaker correlation with profit (0.7478).
* **Administration**: Weak correlation with profit (0.2007), so it wasn’t used in the model.

**6. Model Evaluation:**

* High R² values show that "R&D Spend" and "Marketing Spend" are strong predictors of profit.

**7. Regression Models:**

1. **Single Linear Regression**:
   * Formula: Profit = 49336.67 + (0.85 × R&D Spend)
   * Mean Squared Error (MSE): ~59.51M, showing some deviation in predictions.
2. **Multiple Linear Regression**:
   * Formula: Profit = 45542.39 + (0.78 × R&D Spend) + (0.04 × Marketing Spend)
   * R² Value: 0.952, indicating a good fit.
   * Marketing Spend contributes less compared to R&D Spend.