

# Assignment 2

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Descriptive Analytics:

**Advertising Spend:** Ranges from \$1,000 to \$50,000, with an average of \$25,500.

**Social Media Engagement:** Varies between 52 and 497, with an average of 274.

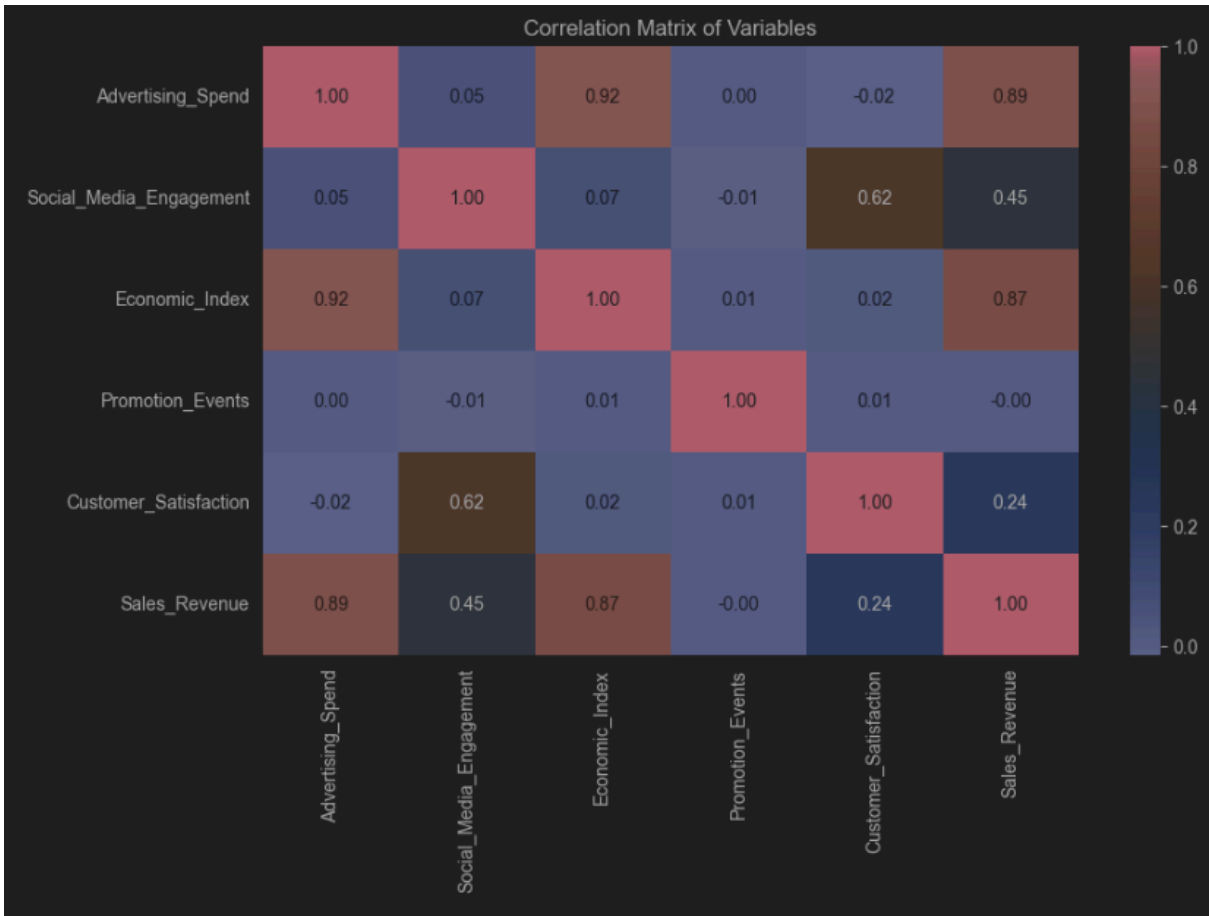
**Economic Index:** Between 72 and 132, with an average of 100.

**Promotion Events:** Binary (0 or 1), indicating whether a promotion was held.

**Customer Satisfaction:** Ranges from 55.5 to 100, with an average of ~96.

**Sales Revenue:** Between \$84,409 and \$331,296, averaging \$205,668.

diagnostic analytics:



**Strongest Positive Correlations with Sales Revenue:**

- **Advertising Spend (0.89):** Higher advertising spend is strongly associated with increased sales revenue.
- **Economic Index (0.87):** A higher economic index correlates with higher sales, suggesting economic conditions significantly impact revenue.
- **Social Media Engagement (0.45):** Moderate correlation, indicating engagement plays a role but is less impactful than ad spend or the economy.
- **Customer Satisfaction (0.24):** Weak positive correlation, implying satisfied customers contribute to sales but not as strongly as other factors.

predictive Analytics:

Mean Absolute Error: **11848.40540525751**

This means that, on average, the model's predictions are off by **\$11,848** from the actual sales revenue.

R-Squared: **0.9250394052894239**

**0.925 (92.5%)** means that **92.5%** of the variability in Sales Revenue is explained by the independent variables. This suggests a very strong predictive model