Linear Regression Test (MOD 6)

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MIS445

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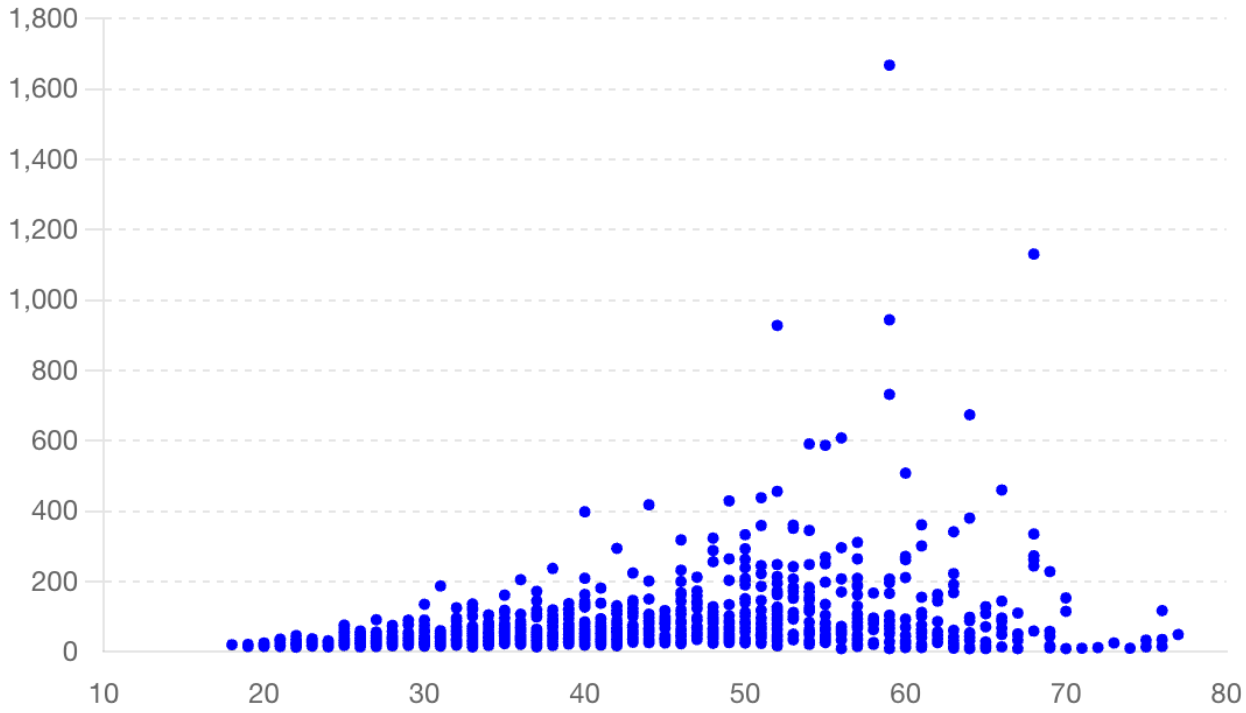
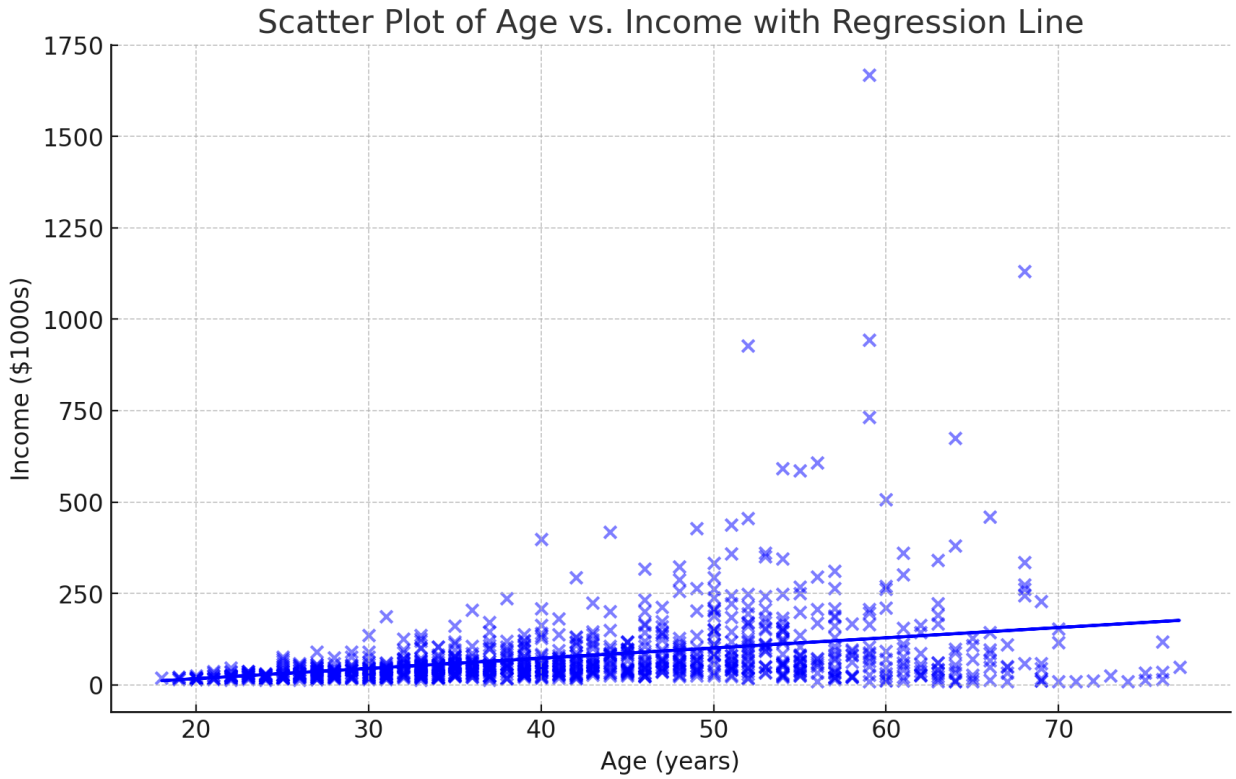
1.Scatter Plot of Age vs. Income



2.



3. The predicted income for a 27-year-old individual is approximately **$36,489.71.**

4. **Interpretation of the Results:**

(R2):

- R2 measures the proportion of the variance in the dependent variable (income) that is predictable from the independent variable (age). It ranges from 0 to 1.
- Value: The R2 value from the model summary is 0.013, indicating that only about 1.3% of the variance in income is explained by age. This suggests that age alone is not a strong predictor of income in this dataset.

F-statistic:

- F-statistic tests the overall significance of the model. It compares the model with no predictors.
- Value: The F-statistic value is 7.54 with a p-value of 0.006. Despite the low R2, the p-value being less than 0.05 indicates that the model is statistically significant. This means that the relationship between age and income, while weak, is not due to random chance.

Overall Fit of the Model:

- R2: The low R2 value suggests that the model does not explain much of the variation in income. Age is not a strong predictor of income in this context.
- F-statistic: The significant F-statistic indicates that there is a statistically significant relationship between age and income, but the practical significance is low given the low R2 value.

Conclusion:

While the model is statistically significant (as indicated by the F-statistic), the low R2 value indicates that age alone is not a good predictor of income. Other variables not included in the model likely have a more substantial impact on income. Therefore, the overall fit of the income determination model is weak.

For better predictive power, we could consider including additional relevant variables such as education level, work experience, occupation, and other socioeconomic factors.