Assignment 6

Objective: Apply Bayesian regression analysis to replicate and extend the Ordinary Least Squares (OLS) model you developed in Assignment 4, incorporating visualizations that were covered in the class.

Tasks:

1. Replicating OLS Model with Bayesian Approach:
    - Using the same dataset from Assignment 4, develop a Bayesian regression model that mirrors the OLS model.
2. Implementing the Model:
    - Use PyMC3 or a similar Bayesian library to implement the regression model.
    - Ensure that your model includes appropriate priors that reflect your assumptions about the data.
3. Visualization and Interpretation:
    - Create visual representations of the posterior distributions of the model parameters.
4. Comparative Analysis:
    - Compare the results of the Bayesian model with the OLS model from Assignment 4.
    - Briefly discuss how the Bayesian approach may provide additional insights or different perspectives on the data.

Submission: A Jupyter Notebook containing the Bayesian regression model, visualizations, and a comparative analysis of the Bayesian model versus the OLS model.