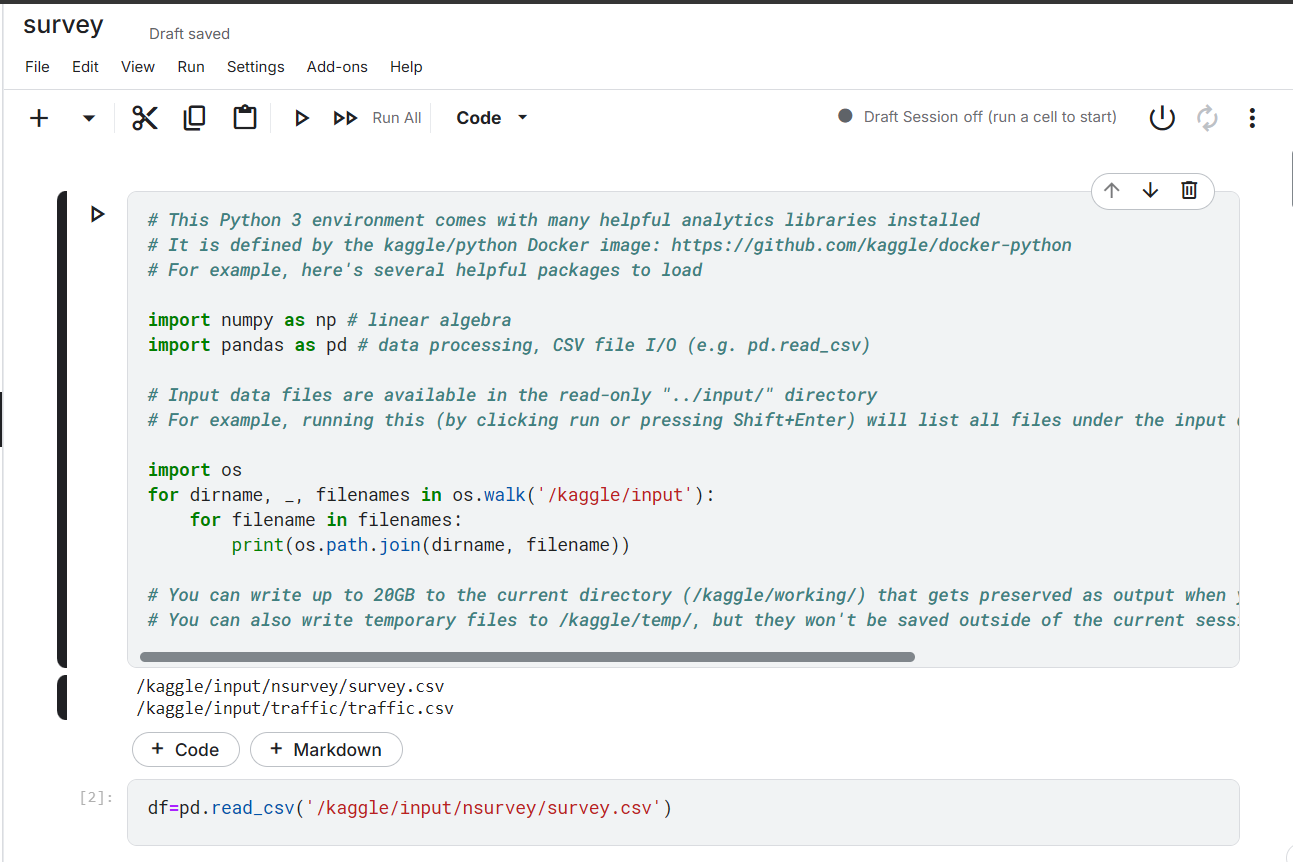
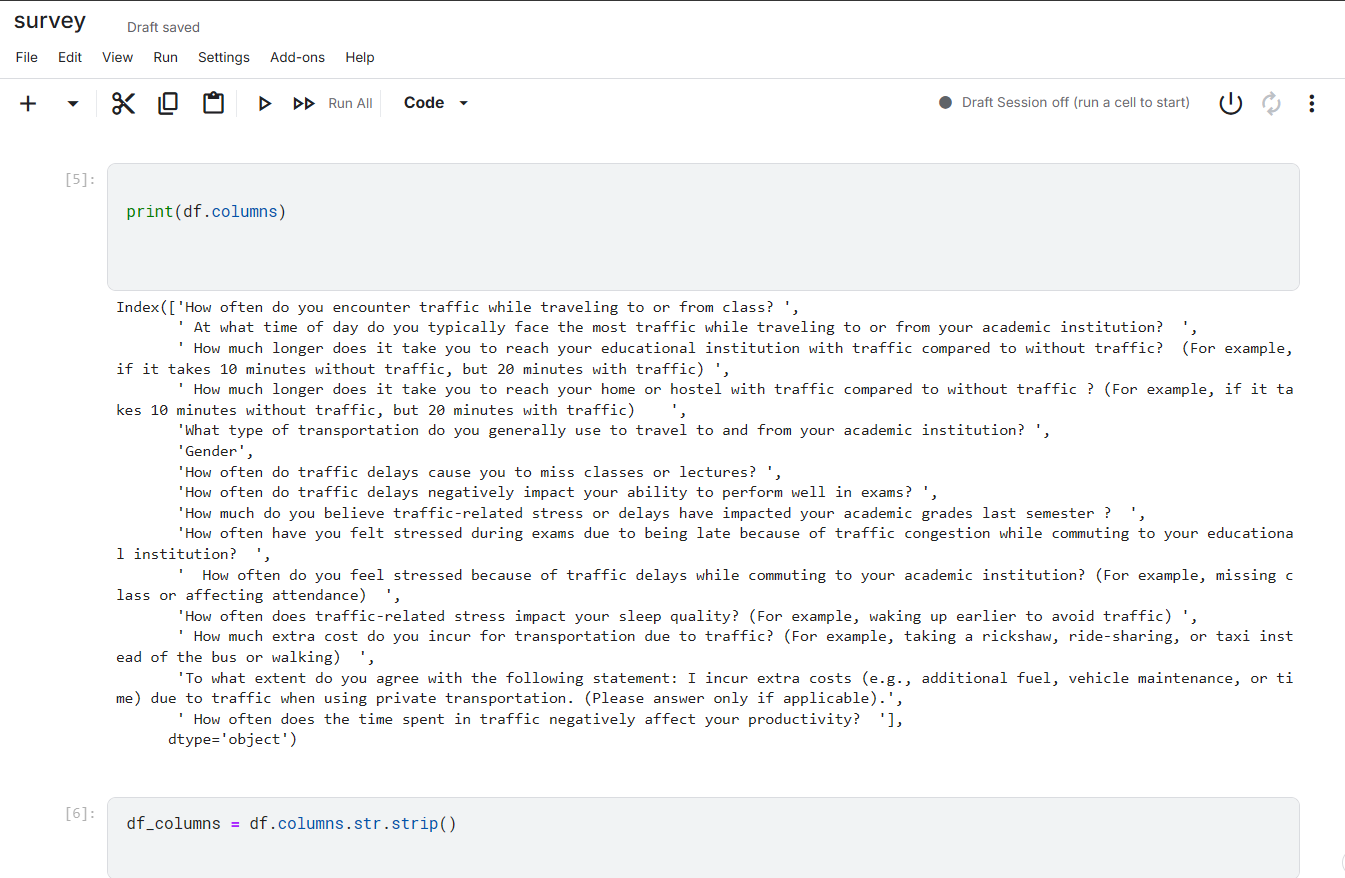
**Project Name:** A Comparative Study of Statistical and Machine Learning Models

This research evaluates the effectiveness of statistical and machine learning models in understanding the impact of traffic-related issues on academic performance. Analyzed a dataset of 80 survey responses exploring relationships between traffic frequency, stress levels, transportation costs, and academic outcomes. Analysis included Ordinary Least Squares (OLS) regression, Poisson regression, Bayesian Ridge regression, and machine learning techniques like Support Vector Regression, Ridge Regression, Random Forest, and XGBoost. Data preprocessing involved MinMax scaling for numerical features and encoding for categorical variables. Assess model performance using R², Mean Squared Error (MSE), and Mean Absolute Error (MAE).

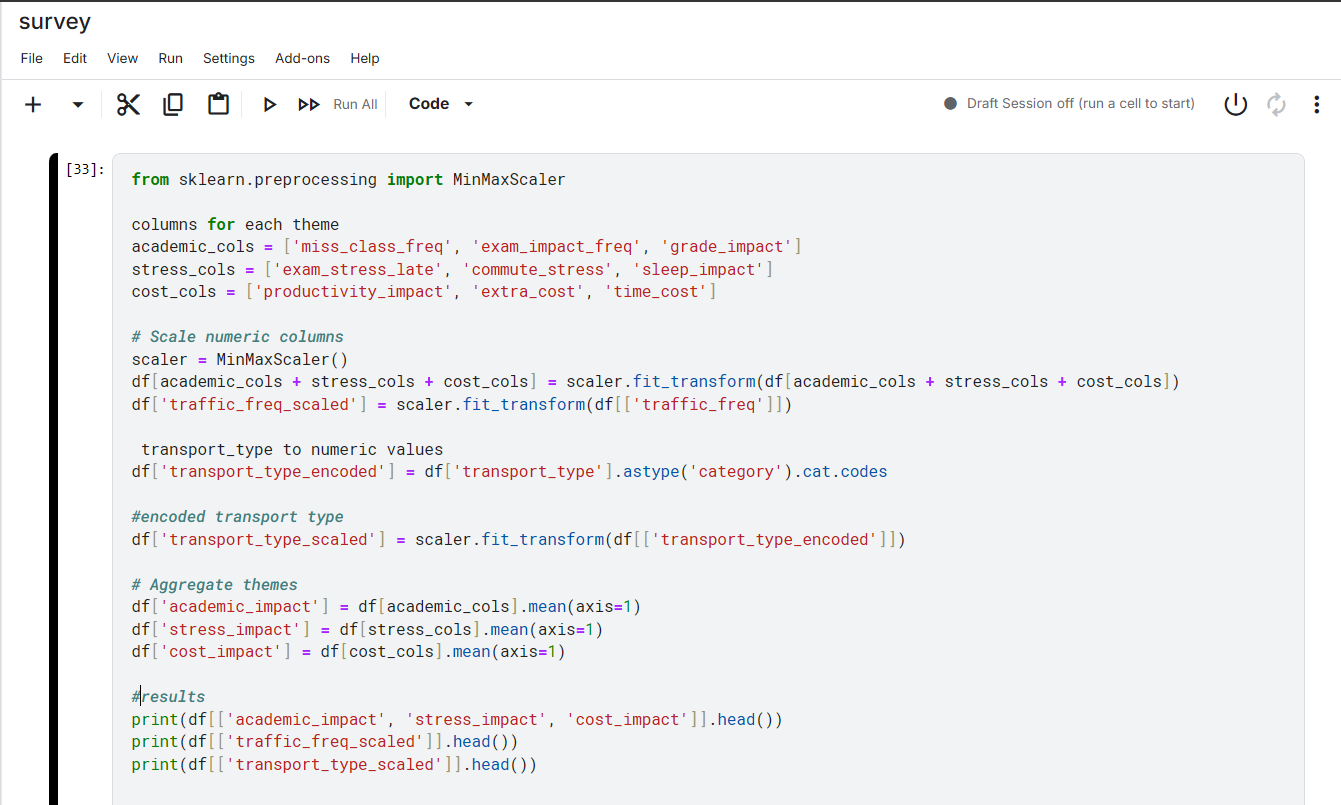
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Description automatically generated



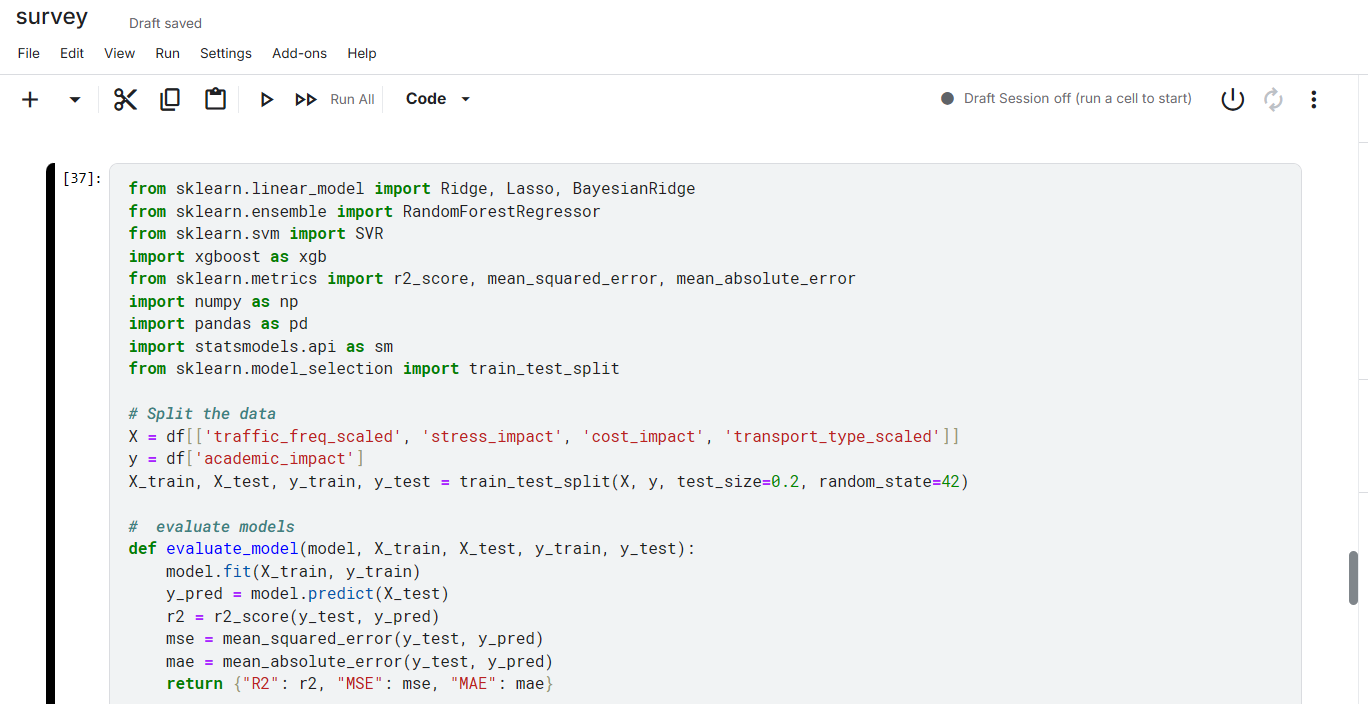
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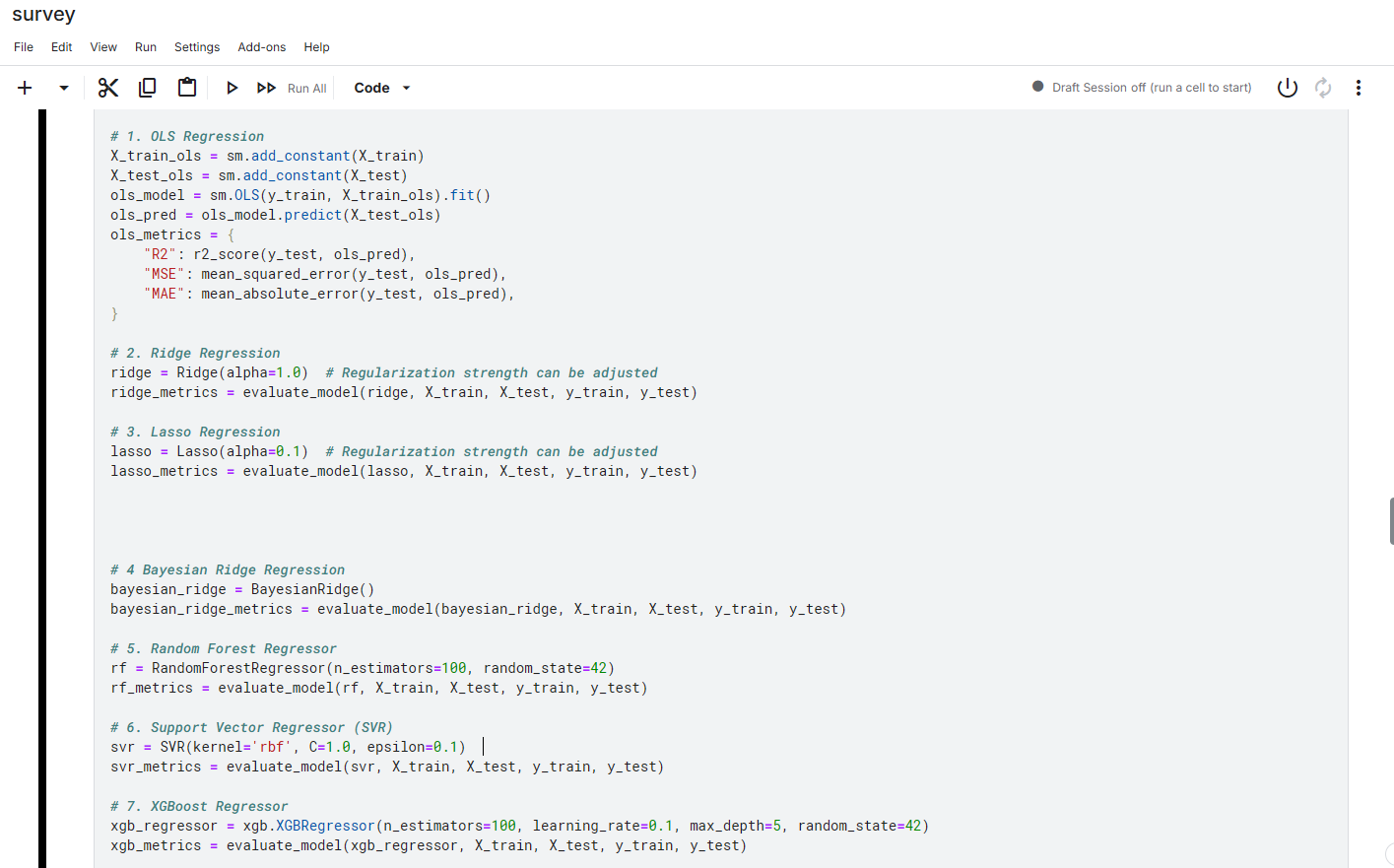
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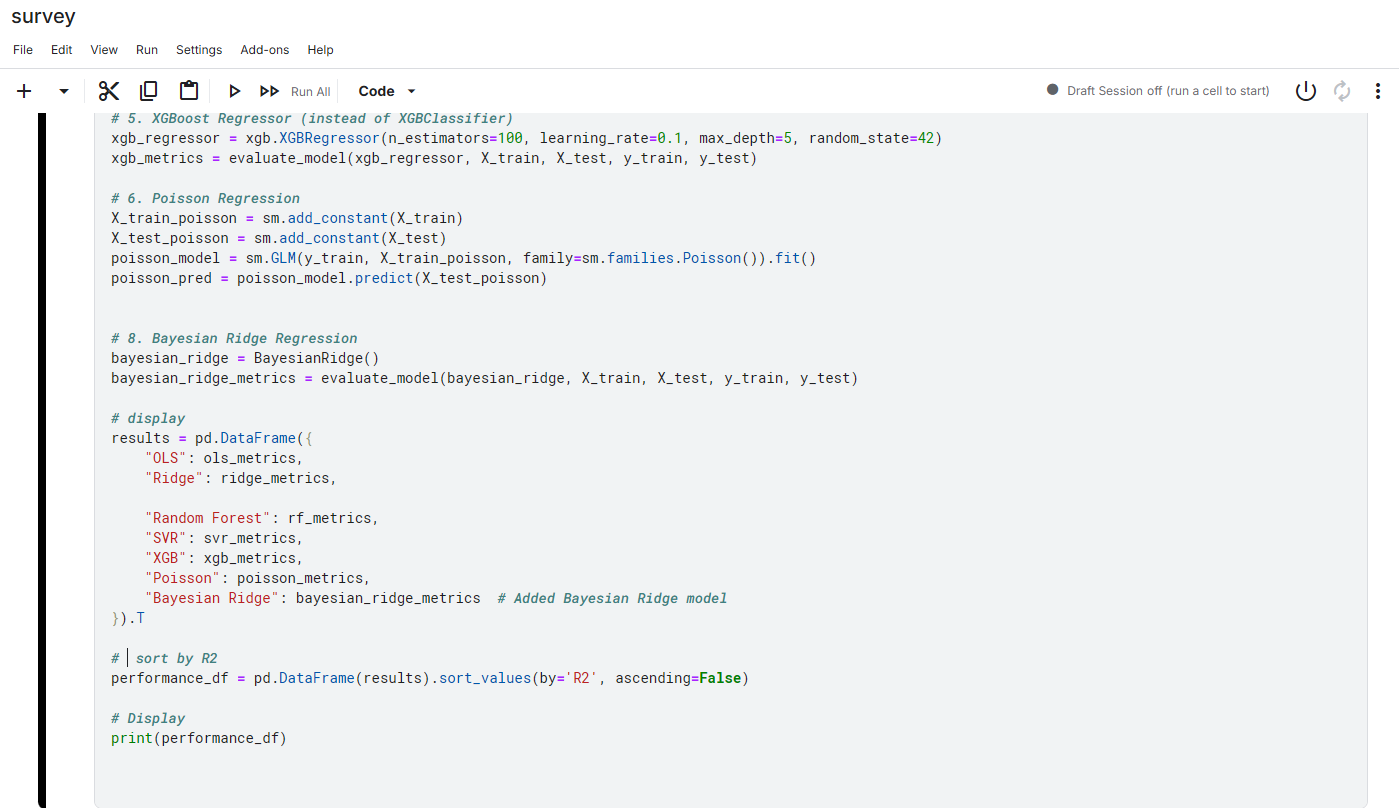


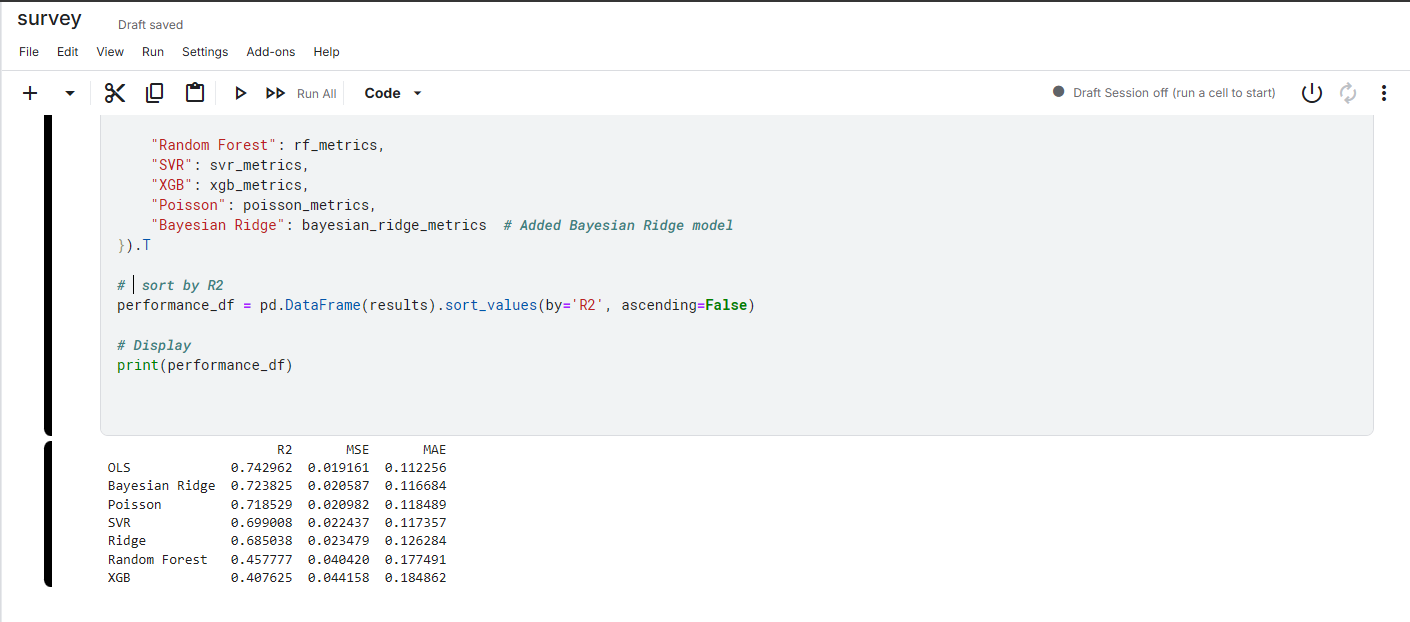
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A screenshot of a graph

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Focused on metrics such as missed classes and exam-related stress, assessing model performance using R², Mean Squared Error (MSE), and Mean Absolute Error (MAE). The OLS regression model excelled, achieving an R² of 0.743, MSE of 0.0192, and MAE of 0.1123. Both Bayesian Ridge and Poisson regression demonstrated solid performance.