



## PROJECT SPECIFICATION

**Building a Student Intervention System****Classification vs Regression**

CRITERIA	MEETS SPECIFICATIONS
<b>Question 1</b> Classification vs. Regression	Student is able to correctly identify which type of prediction problem is required and provided reasonable justification.

**Exploring the Data**

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Data Exploration	<p>Student response addresses the most important characteristics of the dataset and uses these characteristics to inform their decision making. Important characteristics must include:</p> <ul style="list-style-type: none"><li>• Number of data points</li><li>• Number of features</li><li>• Number of graduates</li><li>• Number of non-graduates</li><li>• Graduation rate</li></ul>

**Preparing the Data**

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Identify feature and target columns	Code has been executed in the iPython notebook, with proper output and no errors.
Split data into training and test sets	Training and test sets have been generated by randomly sampling the overall dataset.

**Training and Evaluating Models**

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<b>Question 2</b> Model Application	Three supervised models are chosen with reasonable justification. Pros and cons for the use of each model are provided, along with discussion of general applications for each model.

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Model Performance Metrics	All the required time and F1 scores for each model and training set sizes are provided within the chart given. The performance metrics are reasonable relative to other models measured.

### Choosing the Best Model

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<b>Question 3</b> Choosing the Optimal Model	Justification is provided for which model seems to be the best by comparing the computational cost and accuracy of each model.
<b>Question 4</b> Describing the Model in Layman's Terms	Student is able to clearly and concisely describe how the optimal model works in laymen terms to someone what is not familiar with machine learning nor has a technical background.
Model Tuning	The final model chosen is correctly tuned using gridsearch with at least one parameter using at least three settings. If the model does not need any parameter tuning it is explicitly stated with reasonable justification.
<b>Question 5</b> Tuned F1 Score	The F1 score is provided from the tuned model and performs approximately as well or better than the default model chosen.

### Quality of Code

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Functionality	Code reflects the description in the documentation.