

## PROJECT SPECIFICATION

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

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

**Exploring the Data**

CRITERIA	MEETS SPECIFICATIONS
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**

CRITERIA	MEETS SPECIFICATIONS
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**

CRITERIA	MEETS SPECIFICATIONS

<b>Question 2</b> Model Application	<p>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.</p> <p>Please list out all references you use while stating your pros and cons for the various models.</p>
Model Performance Metrics	<p>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.</p>

### Choosing the Best Model

CRITERIA	MEETS SPECIFICATIONS
<b>Question 3</b> Choosing the Optimal Model	<p>Justification is provided for which model seems to be the best by comparing the computational cost and accuracy of each model.</p>
<b>Question 4</b> Describing the Model in Layman's Terms	<p>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.</p>
Model Tuning	<p>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.</p>
<b>Question 5</b> Tuned F1 Score	<p>The F1 score is provided from the tuned model and performs approximately as well or better than the default model chosen.</p>

### Quality of Code

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Functionality	<p>Code reflects the description in the documentation.</p>

[Student FAQ](#)