

Initial Questions to Student							
1. What are the top 1-3 things you learned while doing this project?							
<i>Student response:</i>							
2. On a scale of 1-10, 1=Do not understand anything in Module 1. 10=I am ready to write a book on it, how do you feel about Module 2 topics now?							
<i>Student response:</i>							
3. If you had more time what is 1 or 2 things you will do with the data set?							
<i>Student response:</i>							
Notebook							
Project Specifications	Metric for success	Developing		Accomplished		Exemplary (X-Factor)	Notes
Pick a novel interesting problem at the appropriate challenge level.	For the Northwinds Database dataset, constructed the business case around it well.	Business case not clearly articulated. Answered an obvious business question.	<input type="checkbox"/>	Business case constructed clearly. And answered an obvious question, like clearly articulated the business stakeholder requirements that the project aims to accomplish. Combine questions in unique ways like how do discounts affect product sales?	<input type="checkbox"/>	Created original and meaningful work - Created a unique business case for the Northwind Database dataset. For example, analyzed the dataset from the point of view of sales, business stakeholders, a startup that would use this business model, want to expand into new geographical regions, specialize in different product lines, etc.	<input type="checkbox"/>
Preprocess data	Import the data and preprocess the data that includes cleaning, scrubbing, handling missing values, etc.	Data not fully ready for later analysis. 100% correctly structured data. Handled missing values.	<input type="checkbox"/>	Explored different methods.	<input type="checkbox"/>	Handled especially tricky issues. Explored different methods with benchmarking.	<input type="checkbox"/>
Describe data	Use EDA to create meaningful visualizations that describe your data. Plotting words to show cosine similarity, showing plots for class imbalance, etc.	No visualizations are present in the notebook	<input type="checkbox"/>	1 or 2 visualizations are present in the notebook and visualizations are relevant to the project in a technical or business sense.	<input type="checkbox"/>	3 or more visualizations are present in the notebook and visualizations are relevant to the project in a technical or business sense.	<input type="checkbox"/>
Fit models/Hypothesis testing	Hypothesis Tests are ran correctly taking into account standard deviations and normality of distributions.	Hypothesis tests are ran incorrectly. The null and alternate hypotheses tests are not defined.	<input type="checkbox"/>	Correct hypotheses tests are ran but not supported using analysis. In other words the correct test is run on data, but no proof of the data's normality and standard deviation.	<input type="checkbox"/>	Correct hypotheses tests are ran and are supported using analysis. The subsequent business decisions following the hypotheses are correctly identified, and articulated. Future work is explored.	<input type="checkbox"/>
Present to technical audience	Present work done to a technical audience with code, insights, summary, future work, and even a live demo (for extra credit).	Unintelligible, hard to follow. Unclear. Incomplete.	<input type="checkbox"/>	Engaging talk with insights & lessons. Explained code examples.	<input type="checkbox"/>	Live demo! Ran code and changed parameter values.	<input type="checkbox"/>

Present to non-technical audience	Present work done to a non- technical(business focused) audience with problem statement, business value, methodology explained simply, business recommendations, summary, and future work.	Unintelligible, hard to follow. Unclear. Incomplete. Slides are too verbose, slide notes non existent.	<input type="checkbox"/>	Engaging talk with insights & lessons. Explained methodology. Slides have images, less text, slide notes present on slide that mirror the script of the presenter. One slide for each of the following - Problem statement, business value, methodology, business recommendations (each recommendation on a separate slide), future work/next steps.	<input type="checkbox"/>	Additional slides like findings, or use of engaging images, graphics, material showing expertise in communicating to business stakeholders.	<input type="checkbox"/>
Write quality code	Code is non-repetative and uses OOP when necessary to avoid reptition. Custom methods/classes contain docstrings to help the reader understand what is happening. Variables have names that are relevant to what they represent.	Code is unorganized, lacks docstrings, variables are not named intentionally, and code repeats itself.	<input type="checkbox"/>	Code lacks docstrings, but does not repeat itself and uses custom methods to do repetative tasks. Code follows pep-8 standards.	<input type="checkbox"/>	Code follows pep-8 standards, contains docstrings/comments, does not repeat itself and uses custom classes methods for tasks.	<input type="checkbox"/>
Conclusion	Notebook contains a conclusion with business recommendations that are driven by analysis.	No conclusion present.	<input type="checkbox"/>	Conclusion present but only states findings and contains 1 or 2 relevant business recommendations.	<input type="checkbox"/>	Conclusion is present and contains at least 3 recommendations that are business relevant.	<input type="checkbox"/>
X - factor: Did something out of the box	Went above and beyond to research some additional topic, concept, Python package(s).	Routine project. Repeated analysis covered in class/sections of the module.	<input type="checkbox"/>	Showed creativity.	<input type="checkbox"/>	Ground breaking.	<input type="checkbox"/>
Qualitative Assessment							
1. Problem Statement - how well was it defined for this project							
2. Things you did well:							
3. Things to work on/ consider :							
4. Observations:							
5. X-factor:							

6. Action items:							
Business slide deck - Rubric							
Slide Quality	Slides are light on text, engaging and tell a story.	Slides are very text heavy or highly unorganized and all over the place.	<input type="checkbox"/>	Slides are organized and tell a story, but contain too much text at times, especially when a visualization will suffice.	<input type="checkbox"/>	Slides are organized, contain visualizations that relay information and slides tell a story.	<input type="checkbox"/>
Duration	Your presentation should be between 5 and 8 minutes.	Presentation is over 10 minutes or under 3 mintes.	<input type="checkbox"/>	Presentation is over 8 minutes or under 5 mintes.	<input type="checkbox"/>	Presentation is between 5 and 8 minutes.	<input type="checkbox"/>
Non Technical	Presentation contains great data science that is delivered using non technical language.	Presenation uses technical terms without succinct explanations more than 3 times.	<input type="checkbox"/>	Presenation uses technical terms without succinct explanations once or twice.	<input type="checkbox"/>	Presentation does not use technical terms or provides succinct explanations when using them.	<input type="checkbox"/>
Test Results	Hypothesis test results are shown and made relevant to the business, driving the recommendations from the project.	No tests are shown or tests shown do not relate to business.	<input type="checkbox"/>	Test results are shown and made clear to business case.	<input type="checkbox"/>	Test results are shown, made relevant to business case and also highlight deeper insights into the business.	<input type="checkbox"/>
Visualizations	Slides contain visualizations that take the place of text and give the viewer insight.	Slides do not contain visualizations or the visualizations present are not relevant to the story.	<input type="checkbox"/>	Slides contain visualizations that are relevant to the story but hard to interpret.	<input type="checkbox"/>	Slides contain visuliazations that are revelant and easy to understand.	<input type="checkbox"/>
Recommendations	A great presentation contains business recommendations and steps moving forward.	No recommendations are made	<input type="checkbox"/>	At least 3 recommendations are made, but are not driven by data analysis or model.	<input type="checkbox"/>	At least 3 recommendations are made and are driven by analysis and model.	<input type="checkbox"/>
Future Work	A data scientist will never have enough time to explore all aspects of dataset. If you had more time, what other aspects of the dataset would you explore?	No slide on Future work.	<input type="checkbox"/>	Future work slide content not well defined and/or articulated.	<input type="checkbox"/>	Future work clearly articulated, explored, and its potential business impact (s) described.	<input type="checkbox"/>
Thank You Slide	Thank your audience for their time, it's a great practice.	Thank You Slide is not present.	<input type="checkbox"/>		<input type="checkbox"/>	Thank You Slide is present. Appendix includes additional work.	<input type="checkbox"/>