



# Capstone - Individual

Your Capstone project is the culmination of your time at GA! You will produce a project on your own that demonstrates the skills you have learned throughout the course. This introductory document lays out the three constituent portions of the project.

## Deliverables

1. Topic Options
2. Topic Proposal and Dataset
3. Report and Technical Analysis
4. Non-Technical Presentation

## Capstone, Part 1: Topic Options

Get started by thinking of some possible topics that you could investigate for your project. You should write up between 2 and 4 options.

For each possible topic, write a statement of the problem that you want to solve and an overview of your approach to solving that problem. Outline where you have data, or where you can get it from, for each option.

The outcome of this part is that you should know which topic you'll be working on.

**Deliverable:** Prepare a presentation with a maximum of 5 slides which gives an overview of the topics you have considered and present your topics to the class for a maximum of 10 minutes in a 'Lightning Talk'.

**Due:** Friday of Week 7



## Capstone, Part 2: Topic and Dataset

Get started on your chosen topic by determining and describing your problem, goals, criteria for success, potential audience(s), and dataset(s).

Provide a clear statement of the problem that you want to solve and an overview of your approach to solving that problem. Summarize your objectives, goals and success metrics, and any risks and assumptions. Outline any proposed methods and techniques you have.

**Deliverable:** Prepare a presentation with a maximum of 10 slides which introduces and describes your problem, goals, criteria for success, potential audience(s), and potential dataset(s). This will form the first part of your Report Writeup.

**Due:** Monday of Week 11



## Capstone, Part 3: Report and Technical Analysis

Develop a technical report that can be shared among your peers.

Document your research and analysis including a summary, an explanation of your approach as well as the strengths and weaknesses in the process.

Consider delivering a combination of SQL queries, data files, a Jupyter notebook and an interactive dashboard in Tableau.

**Deliverable:** Your report should outline the following:

- Problem, Goals and Audiences
  - Provide a clear statement of the problem, goals, and criteria for success, and an overview of your approach to solving that problem.
- Data Sources and Definitions in a Data Dictionary
  - All data should be cleaned, with redundant, duplicate, and erroneous data removed.
  - Data should be clearly defined in a data dictionary.
- Patterns, Trends and Insights
  - Data should be analyzed using statistical techniques, to identify patterns, trends, and insights.
  - Include at least one interactive dashboard visualization to provide insights to the business decisions required by the intended audience.
- At least one predictive model
  - Use historical data to conduct predictive analysis on new data sets based on the predictive model.
- Recommendations
  - Find a solution to your problem - if there is one.
  - Make recommendations for your client to move forward on.
  - Outline any setbacks and make recommendations of any further data required or a new data model to be built (if required).
  - Next steps - What would you do next?

**Due:** Thursday of Week 12



## Capstone, Part 4: Non-Technical Presentation

Whether during an interview or as part of a job, you will frequently have to present your findings to business partners and other interested parties - many of whom won't know anything about data analysis!

You should already have the analytical work complete, so now it's time to clean up and clarify your findings. Come up with a detailed slide deck or interactive demo (or both) that explains your data, visualizes your analysis, describes your approach, articulates strengths and weaknesses, and presents specific recommendations.

You will present your deck to the class and a select audience of non-technical audience for 10 minutes. Be prepared to explain and defend your presentation to an inquisitive audience!

**Deliverable:** Presentation of 10 minutes of your findings with a non-technical audience in mind.

**Due:** last day of the course



## Rubric

Instructors will evaluate student skill based on the following rubric. For each element, instructors will give one of the following:

- Incomplete (I)
- Does Not Meet Expectations (N)
- Meets Expectations (M)

	Criteria	Score
<b>Capstone, Part 1: Topic Options</b>	An overview is provided of 2-4 possible topics for the project.	
	For each option, there is a statement of the problem that is proposed to be solved.	
	For each option, a brief overview of the proposed approach to solving the problem is given.	
	For each option, it is clear whether a data source(s) has been identified that will enable a problem statement to be answered.	
	The presentation deck is created and equal to or less than 5 slides	
	The presentation facilitates understanding of the possible topics.	
<b>Capstone, Part 2: Topic Proposal and Dataset</b>	Data is gathered from internal and external sources according to business requirements.	
	A problem statement and an overview of an approach to solving that problem is provided.	
	Objectives, success metrics, any risks/assumptions, and proposed techniques are summarized.	
	The presentation deck is clear and effective, and equal to or less than 10 slides.	
<b>Capstone, Part 3: Report Writeup + Technical Analysis</b>	All data is cleaned and described, with redundant, duplicate, and erroneous data removed.	
	Data is analyzed using statistical techniques, to identify patterns, trends, and insights.	
	A predictive model is built using historical data and predictive analysis is conducted on new data sets based on the predictive model.	
	The report is built based on statistical analysis and outlines all patterns, trends and insights clearly.	
	The report facilitates data-driven decision making or understanding by	



	effectively visualizing data and summarizing findings.	
	At least one interactive dashboard is created and presented to provide insights to the business decisions required by the intended audience.	
	A new data model is proposed or built (if required).	
<b>Capstone, Part 4: Presentation + Recommendations</b>	The presentation facilitates data-driven decision making or understanding by visualizing data and clearly communicating data insights.	
	The presentation is appropriately directed to the correct audience and communicated in laypeople terms.	

You must receive a score of **Meets Expectations** in all categories to pass this project.

**Good luck and have fun!**