Term Project

You will have a term project during this course that has 4 milestones. This project will be a combination of research and analysis. There is no coding required as part of this assignment.

The summary of the project is to come up a question/theory/topic that you research via multiple sources, including search engine data. You must identify additional data sources (or identify what data NEEDS to be collected), then present your findings to your peers on your analysis process. Your peers will then provide feedback like a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) to give you feedback on how to improve your analysis.

The project does not require you to complete or actually prove out the theory or answer the question, but you will gain experience asking the questions necessary and starting the research required in order to complete the project. A reminder on some of the topics the author investigated:

* Geographic areas of racism
* How to predict political election
* Insecurities in Men & Women
* Does economic crisis increase child abuse?
* Do jokes increase happiness?
* Popular sport teams

The first step, determining the topic and questions you want to answer is always the hardest – so make sure you get started on this early! The only rule for a topic is that you cannot use one from the book Everybody Lies – otherwise any topic is fair game!

**Milestone 1**

**Milestone 1**

After reading Everybody Lies, we are going to start the project using search engine data. This is a very small portion of the project, so don’t overthink it. If you haven’t yet visited Google Trends, you can find it here: [Google Trends](https://trends.google.com/trends/?geo=US). You are not limited to Google trends, but the primary source of your research for Milestone 1 should be a search engine.

For Milestone 1, select a topic that interests you. Then come up with 5 questions/theories about this topic. You could also come up with a question that you are interested in solving or proving and then come up with a total of 5 questions of research. Refer to the term project details for an example.

The intent of this milestone is to show you that data isn’t always as cut and dry as sending someone a form to fill out or checking a box. There is a lot of information to be found in what we are searching and the questions we ask. But this is just one data point – it shouldn’t be used as the sole research for analysis.

After completing your Google trend analysis on your topic, you must provide a 500-word paper that includes an Introduction, Summary of your Research (along with visual aids) and a conclusion where you highlight the area of research you now want to continue looking into after this initial pass of research.

Topic Example: Are the risks of being exposed to carcinogens through sun screen worth the risk compared to the risk of skin cancer from getting sunburnt?

Research/Google Trend Searches:

1. Sunscreen cancer links
2. Is cancer from sun screen more dangerous than cancer from skin cancer
3. Skin cancer prevention
4. What chemicals are in sunscreen that lead to cancer?
5. Melanoma vs benign skin cancer
6. What level of sun burn is likely to cause cancer?
7. Are there certain people less likely to get cancer from a sun burn?
8. Are there certain people that don’t need to use sun screen OR are more likely to get cancer from sun screen?

Make sure to cite any sources, including Google trends in APA format.

**Milestone 2Milestone 2**

Continue researching your topic and gather supporting (or disproving information) about your topic. Expand on your paper from Milestone 1 and start including the information you have found with your additional research. For example, if your topic is to determine if social media makes people depressed, you might include that you need to investigate social media use correlated to suicide and depression searches or find medical studies to indicate a connection. This is very basic; I expect you to thoroughly think through your idea and what it would require to prove or disprove your theory or question. Ask yourself what you would do if someone told you a fact that you didn’t believe to be true – how would you go about disproving it?

A very key component to this research and analysis might be how you would go about collecting data if it doesn’t currently exist. In my sunscreen example – I likely would need to get myself to the beach and start interviewing people! Is that realistic? How do you get a large enough population? What do the sunscreen companies do when they research effectiveness or potential side effects? These are just examples of the thought process and line of questioning I need to take for my sunscreen topic.

The objective for this milestone is to keep asking questions. Asking questions is going to be expected of you as a data scientist. You want to keep peeling back the layers of the onion until you have exhausted your efforts.

At this point, I expect the following sections to be included in your draft paper:

* Introduction
* Overview of Topic/Problem
* Analysis (This should include all the areas of research and questions you have explored)
* Findings/Next Steps
* Conclusion
* Sources

You must have at least 5 different sources of research, which you can cite at the end of your paper in APA format. This paper should now be between 1000-1500 words.

**Milestone 3Milestone 3**

In Milestone 3 you are going to finalize your paper and draft a presentation, using PowerPoint, Prezi, or Adobe etc. that provides a high-level summary of your project.

To finalize your paper, include the following additional topics in your Findings/Next Steps section:

* Assumptions
* Ethical Concerns
* Challenges/Opportunities

Your paper should be between 1500-2000 words by this Milestone. Make sure you review the paper and correct any grammatical errors or clarify any outstanding points. You should have an introduction, body, and conclusion, along with sources cited in APA. You can also include visualizations or create an appendix with visualizations that you refer to in the body. This is optional and not required.

Your presentation should summarize your project in 5-10 slides. This should be a high-level overview of your project topic, analysis performed and what you discovered. You can do this in PowerPoint or Prezi, or another presentation tool. Post this presentation to Teams under the Files section for your channel, along with submitting this presentation with your final paper.

**Milestone 4Milestone 4**

Review at least one other classmates’ presentation and provide the following in a PDF document regarding their Project:

* Is the theory or question clear and understood?
* What are some strengths of the outlined plan?
* What are some areas of opportunity to improve the analysis?
* Are there any assumptions that were made that you think should be investigated more?
* Are there any ethical implications that should be considered?

Submit a PDF with your assessment answering these questions via the assignment link.