# Course One
# Foundations of Data Science

## Instructions

Use this PACE strategy document to record decisions and reflections as you work through this end-of-course project. You can use this document as a guide to consider your responses and reflections at different stages of the data analytical process. Additionally, the PACE strategy documents can be used as a resource when working on future projects.

## Course Project Recap

Regardless of which track you have chosen to complete, your goals for this project are:

- ☑ ~~Complete the PACE Strategy Document to plan your project while considering your audience members, teammates, key milestones, and overall project goal.~~
- ☑ ~~Create a project proposal for the data team.~~

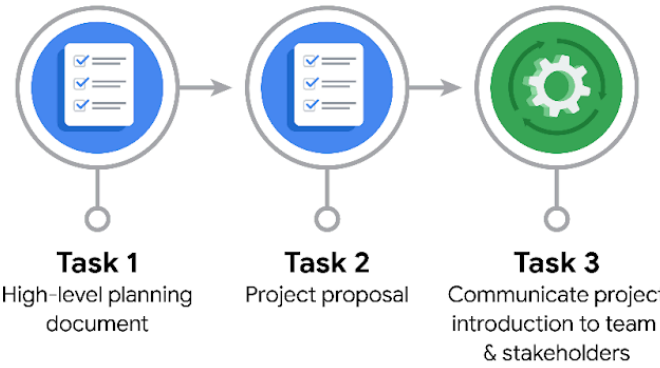
## Relevant Interview Questions

Completing this end-of-course project will empower you to respond to the following interview topics:

- As a new member of a data analytics team, what steps could you take to get 'up to speed' with a current project? What steps would you take? Who would you like to meet with?
- How would you plan an analytics project?
- What steps would you take to translate a business question to an analytical solution?
- Why is actively managing data an important part of a data analytics team's responsibilities?
- What are some considerations you might need to be mindful of when reporting results?

## Reference Guide

This project has three tasks; the following visual identifies how the stages of PACE are incorporated across those tasks.




## Data Project Questions & Considerations

### PACE: Plan Stage

- Who is your audience for this project?

Data team (Harriet, May, Chidi, Sylvester) and other roles (finance manager and operations manager)

- What are you trying to solve or accomplish? And, what do you anticipate the impact of this work will be on the larger needs of the client?

Build a machine learning model that predicts user churn. With an accurate machine learning model we can learn factors to prevent user churn and improve user retention by finding the factors that contribute to user churn.

- What questions need to be asked or answered?

Why do users churn? Which users are most likely to church? When do users churn? Do more users uninstall the app or just stop using the app? What makes a user uninstall the app vs. stop using the app? What percentage of users are uninstalling the app?

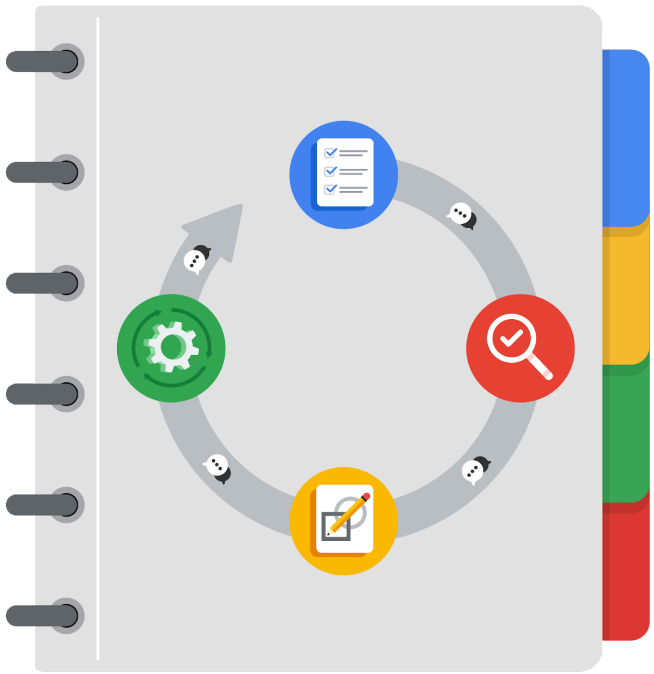
- What resources are required to complete this project?

Python curated dataset, python notebook, and input from stakeholders

- What are the deliverables that will need to be created over the course of this project?

Project proposal, robust data analysis, visualization, machine learning model we can deploy updated every month, final results to share with stakeholders.

## THE PACE WORKFLOW



**[Alt-text: The PACE Workflow with the four stages in a circle: plan, analyze, construct, and execute.]**

You have been asked to demonstrate for the company's data team how you would use the PACE workflow to organize and classify tasks for the upcoming project. Select a PACE stage from the dropdown buttons. A few tasks involve more than one stage of the PACE workflow. Additionally, not every workplace scenario will require every task. Refer back to the Course 1 end-of-course portfolio project overview reading if you need more information about the tasks within the project.

## Project tasks

Following are a group of tasks your company's data team has determined need to be completed within this project. The data analysis manager has asked you to organize these tasks in preparation for the project proposal document. First, identify which stage of the PACE workflow each task would best fit under using the drop down menu. Next, give an explanation of why you selected the stage for each task. Review the following readings to help guide your selections and explanation: The PACE stages and Communicate objectives with a project proposal. You will later reorder these tasks within a project proposal.

1. **Evaluating the model:** Execute

   Why did you select this stage for this task?

   | |
   |---|
   | At this point the model has been constructed, you go through several stages of evaluating and improving the model, you determine whether the project meets the expectations and goals of the stakeholders. |

2. **Conduct hypothesis testing:** Analyze **and** Construct

   Why did you select these stages for this task?

   | |
   |---|
   | You have completed curation and initial analysis of the dataset, now you are getting ready to feed it as input to the model. |

3. **Begin exploring the data:** Analyze

   Why did you select this stage for this task?

   | |
   |---|
   | You are just beginning to explore the data identifying patterns, relationships, and any insights you can garner from the data collection itself considering any biases that might have been introduced. |

4. **Data exploration and cleaning:** Plan **and** Analyze

Why did you select these stages for this task?

| |
|---|
| Data exploration might include some of the planning stages as far as what resources you will need to clean before actually starting the processing. |

5. **Establish structure for project workflow (PACE):** Plan

Why did you select this stage for this task?

| |
|---|
| Here, you are in the very beginning stages of the project and formalizing the structure of the different stages, resource, deliverables, and stakeholders. |

6. **Communicate final insights with stakeholders:** Execute

Why did you select this stage for this task?

| |
|---|
| By this time you have some initial results from deploying your model and communicating those findings with stakeholders. |

7. **Compute descriptive statistics:** Analyze

Why did you select this stage for this task?

| |
|---|
| Any type of detailed investigation into the dataset happens here. |

8. **Visualization building:** Analyze **and** Construct

Why did you select these stages for this task?

| |
|---|
| Visuals are made during the Construct stage, but depend on data assessment done during the analyze stage. |

9. **Write a project proposal:** Plan

Why did you select this stage for this task?

| |
|---|
| One of the very first steps after formulating rhetorically project structure actually putting it in writing. A project proposal is how you define a project. |

10. **Build a regression model:** Analyze **and** Construct

Why did you select this stage for this task?

| |
|---|
| The model is examined and analyzed in detail to make sure it fits the needs of stakeholders and then building the regression model happens in the construct stage. |

11. **Compile summary information about the data:** Analyze

Why did you select this stage for this task?

| |
|---|
| Inspecting the dataset that would give any summary is provided by the analysis done to it, so this would happen in the analysis stage. |

12. **Build machine learning model:** Construct

Why did you select this stage for this task?

| |
|---|
| Building and iterating on training the model happens in the construct phase |