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.

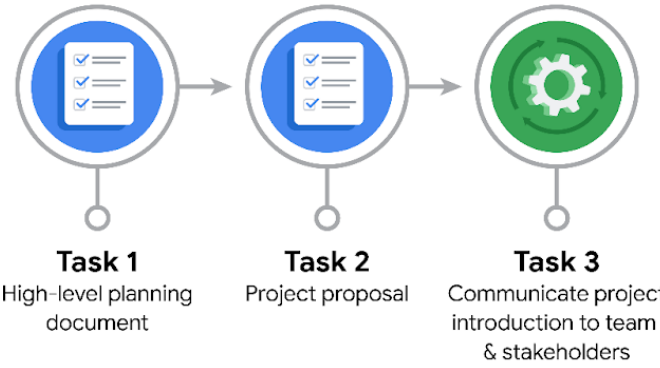
Relevant Interview Questions

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?

The data team and cross-functional members.

- 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 to predict churn rate of app users.

- What questions need to be asked or answered?

What data is needed? Are the data cleaned or unbiased? What variables are relevant? What insights can be got from the data?

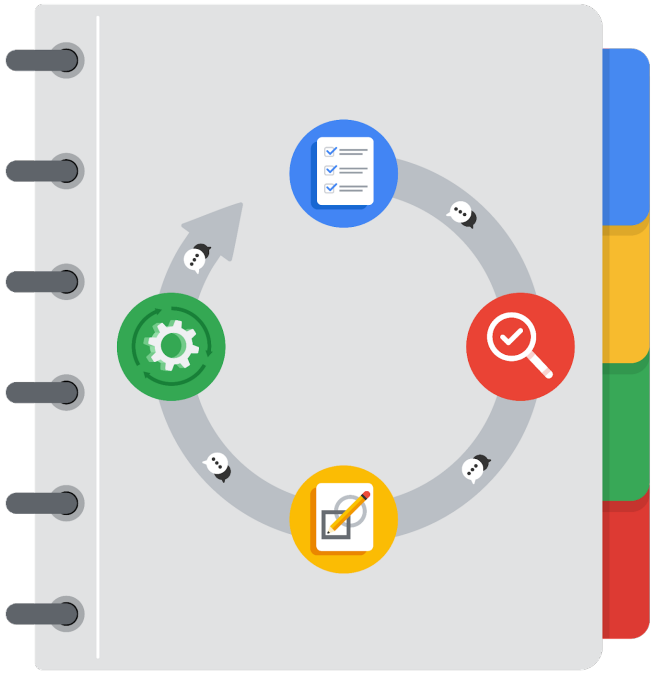
- What resources are required to complete this project?

Related datasets, input from stakeholders and Python.

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

Cleaned datasets for explanatory data analysis, visualizations, machine learning model and final report.

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:** Construct

   Why did you select this stage for this task?

In the Construct stage, we evaluate the performance of the model after building to see whether further tunning is needed.

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

   Why did you select these stages for this task?

In the Analyze stage, we decide is a statistical test needed and if so, what test is suitable. In the Execute stage, we conduct the testing.

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

   Why did you select this stage for this task?

In the analyze stage, the first thing to do is to explore the data to gain a deep understanding of the dataset.

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

   Why did you select these stages for this task?

During the Plan we gain the basic understanding of data once we designed what data is needed. We further explore the data and clean the data in the Analyze stage.

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

   Why did you select this stage for this task?

   During the Plan stage, structure of the project workflow is establishing by creating PACE strategy document.

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

   Why did you select this stage for this task?

   We share the findings in the end of PACE workflow -- Execute.

7. **Compute descriptive statistics:** Analyze

   Why did you select this stage for this task?

   During the Analyze stage, we can grasp the characteristics of data by computing the descriptive statistics.

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

   Why did you select these stages for this task?

   Characteristics and patterns of data are extracted during the Analyze stage and visualizations are then created in Construct stage based on the findings.

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

   Why did you select this stage for this task?

During Plan stage, project proposal is contrived to guide the project onwards.

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

Why did you select this stage for this task?

During the Analyze stage, we conduct EDA and decide which regression model is appropriate. Regression model will then be built in the Construct phase.

11. Compile summary information about the data: Analyze

Why did you select this stage for this task?

Data are inspected and summary information is compiled during the Analyze stage.

12. Build machine learning model: Construct

Why did you select this stage for this task?

We build the machine learning model in the Construct stage.