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.
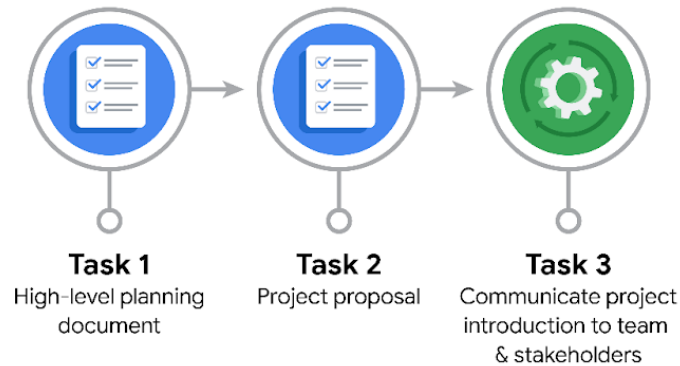
Relevant Interview Questions

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.

Task 1
High-level planning document

Task 2
Project proposal

Task 3
Communicate project introduction to team & stakeholders

Data Project Questions & Considerations

PACE: Plan Stage

● Who is your audience for this project?

Waze data team and team 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?

Working to develop a machine learning model in order to predict user churn.

● What questions need to be asked or answered?

What is the condition of the provided dataset?
What variables will be the most useful?
What valuable insights can be inferred from trends in the data?
How can I reduce the impact of bias?

● What resources are required to complete this project?

Dataset, Jupyter notebooks for coding, input from stakeholders.

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

Dataset scrubbed for exploratory data analysis, visualizations, statistical model, regression analysis, and machine learning.

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?

   > The model needs to be evaluated to determine whether or not it meets the project's goals.

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

   Why did you select these stages for this task?

   > A statistical test will be used during the analysis stage. After that, the test will be carried out during the construct stage.

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

   Why did you select this stage for this task?

   > Analysis is necessary to gain a deeper understanding of the dataset.

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

   Why did you select these stages for this task?

   > Making choices about the methods needed occurs during the planning stage. Then, the cleaning process tales places during the analysis of the data.

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

   Why did you select this stage for this task?

   > The PACE strategy facilitates the workflow and order of the project.

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

   Why did you select this stage for this task?

   > Final insights are shared with stakeholders once the project is finalized.

7. **Compute descriptive statistics:** Analyze

   Why did you select this stage for this task?

   > Investigating the statistics within the data takes place during the analysis.

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

   Why did you select these stages for this task?

   > Visualization starts happening during the construct phase.

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

   Why did you select this stage for this task?

   > That is the initial step when defining a new project.

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

Why did you select this stage for this task?

> The model is first examined to be sure that it meets the needs of the tasks. Then, the model will be built during the construction phase.

11. Compile summary information about the data: Analyze

Why did you select this stage for this task?

> During the analysis, an inspection of the dataset takes place.

12. Build machine learning model: Construct

Why did you select this stage for this task?

> Building the final machine learning model takes place during the construction phase.