

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?

- Udo Bankole, Director of Data Analysis
- Deshawn Washington, Data Analysis Manager
- Luana Rodriguez, Senior Data Analyst
- Uli King, Senior Project Manager
- Juliana Soto, Finance and Administration Department Head
- Titus Nelson, 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?

To predict taxi fares before starting a ride for TLC riders. This way the TLC clients will be able to decide if taking a TLC ride is feasible, decide between renting a car or take a cab and plan and budget their days/weeks more efficiently and well in advance.

- What questions need to be asked or answered?

On what factors do taxi fares depend on? Which of them can be known well in advance?
 What information does the data provide?
 Is the data provided enough to build a model?
 Does the model achieve the required efficiency?



- What resources are required to complete this project?

Ride Data from TLC
Python installed on pc
Tableau for Visualizations
Microsoft Office for Presentations

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

Project Proposal Document
Data Cleaning Report
Model Success Report
Final Report with recommendations and suggestions
Visualizations with data story

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?

Once a model is built, evaluating its results and testing it are integral to know if it aligns with the business goals.

2. Conduct hypothesis testing: Construct and Execute

Why did you select these stages for this task?

Hypothesis is formed once we have a look into the data and align it with the business objectives. Its testing is done both while constructing models and analyzing results in execution phase.

3. Begin exploring the data: Analyze

Why did you select this stage for this task?

Data is explored after cleaning it and before analyzing it,

4. Data exploration and cleaning: Analyze and Construct

Why did you select these stages for this task?

Data is explored after cleaning it and before analyzing it and also when tuning it while building models

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

Why did you select this stage for this task?

Before any of the actual work begins, while planning, essential tasks are identified from the questions asked based on the business objective.



6. Communicate final insights with stakeholders: Execute

Why did you select this stage for this task?

After the models are constructed, the final output needs to be conveyed to the stakeholders in the execution stage.

7. Compute descriptive statistics: Analyze

Why did you select this stage for this task?

While EDA is done, a statistical analyzation of data is needed.

8. Visualization building: Analyze and Construct

Why did you select these stages for this task?

After we analyze data, visualizations are to made to display results in simpler more understandable form both in analysis and construction phase after building models.

9. Write a project proposal: Plan

Why did you select this stage for this task?

Before any of the actual work begins, while planning, a roadmap is created for which lists the project milestones and expected dates of completion.

10. Build a regression model: Construct and Execute

Why did you select this stage for this task?

Regression Models are built based on data and business goal while in construction and execution phases.

11. Compile summary information about the data: Execute

Why did you select this stage for this task?

After models are built and results are gotten, a summary of the results is needed to be done in order to present to the stakeholders.



12. Build machine learning model: Construct

Why did you select this stage for this task?

Models are built after data is initially analyzed in order to predict as is required by the business in the construction phase.