

Team Project

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$ echo "Data Sciences Institute"
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Today

1. Review from last week.
2. Communicating business impact.

Review

Review

- Last week, we focused on several key topics:
 - i. How to present this project in your portfolio.
 - ii. How to effectively develop a business case for your project.
 - iii. How to work together as a team.
 - iv. How to hold effective standup meetings.

Project Plan

- You have each received feedback on your Project Plan in the form of a GitHub issue. You should incorporate this feedback into your README this week.
- When submitting your final project, ensure that you have a section in the README for changes you have made to your original project plan.

Final Project Submission

Your final project will be evaluated on the following criteria:

1. Each team member must have created a pull request, and reviewed and merged a different pull request.
2. (a) For **Data Science** teams, your project must include at least one visualization that presents new insights into the chosen dataset.

(b) For **Machine Learning** teams, your project must include at least one machine learning model that you have developed and implemented to obtain new insights.

Final Project Submission

3. In addition to the project proposal from Week 1, each project's README should describe the final outcome of the project, the key business takeaways, and describe your team's approach to working collaboratively. It should also demonstrate thoughtful consideration of the guiding questions listed in this repository's README.

Final Project Submission

4. Your project should be ***completely reproducible***. This means that anyone (e.g. the instructional team for marking, or potential employers for evaluating your work) should be able to completely recreate your analysis and results based on the instructions in your repository. This includes any software and data dependencies. You should test this by trying to regenerate your results from scratch.

Final Project Submission

5. Each team member must record a 3-5 minute video reflecting on your experience. You may each choose where to host your own video, however it should be public and a link to each team member's video should be included in your project README. This video is meant to be an asset to your portfolio, and should be available for prospective employers. Your videos should answer the following questions:

- What did you learn?
- What challenges did you face?
- How did you overcome those challenges?
- If you had more time, what would you add?
- What strengths do you bring to a team environment?

Keep in Mind

- **Good Code & Structure** → Code should be well-commented, clean, and follow a logical structure. It should be easy to read and maintain.
- **Strong Documentation & Presentation** → The README should be clear, well-written, and explain the dataset, findings, and methodology. The project should be easy to understand for both technical and non-technical reviewers.
- **Application of Module Teachings** → Projects should showcase key technical skills, such as regression modeling, deep learning models, data visualizations, or strong analysis of sampling techniques.
- **Effective Team Collaboration** → Teams should follow best practices for Git (small commits, branches, pull requests) and actively participate in stand-ups and progress updates.

Crafting a Comprehensive Main README File

- **Purpose & Overview:** Introduce the project with essential details, concise description and a project objective.
- **Goals & Objectives:** Articulate what the project aims to achieve. Include any changes made to the original project plan here.
- **Techniques & Technologies:** Highlight the tools and methods used.
- **Key Findings & Instructions:** Summarize outcomes and provide setup instructions.
- **Visuals & Credits:** Enhance with visuals; acknowledge contributors.

This Week's Schedule

Day 6 (Tues): Content delivery, co-work + standups.

Day 7 (Wed): Case study, co-work + standups.

Day 8 (Thurs): Co-work + standups.

Day 9 (Fri): Co-work.

Day 10 (Sat): Project showcase.

Standups

- Each day, a member of the DSI instructional team will guide your team through a standup.
- Stand-ups are quick, structured check-ins that help teams stay on track and remove obstacles.
- The goal is not to compete for who did the most work, it's to ensure the entire team is working effectively and efficiently.
- This is a great opportunity to help your teammates and resolve blockers early.
- Standups should take no more than 10 minutes.

Communicating & Presenting Your Findings

Communicating & Presenting Your Findings

- Even if you have conducted a thorough analysis and found extremely useful results, your project will only be considered impactful if you communicate your findings effectively.

Communicating & Presenting Your Findings

Focus on:

1. Contextualizing your project.

- Clearly describe the business context for your project. What is the gap that you are filling with this work? Where does it fit in the wider industry landscape?

2. Quantifying the business impact.

- What are the key takeaways for your stakeholders? Focus on actionable items.

3. Making complex concepts accessible for your audience.

- How can you communicate technical concepts in a way that everyone can understand?
- Don't explain all your methodological details right away. Start with the big concepts and if the audience is interested in details they will ask.

Project Context



- Try to tell a story!
- Start with the big picture, then slowly focus in on your specific project context.

Business Impact

- Quantify everything that you can!
- Recommend actions that your audience can take to generate business value.

Business Impact

Showcase your project's business value by applying specialized skills:

-  **Data Science Stream:** Apply the techniques learned in your sampling and visualization modules to deliver impactful data insights.
-  **Machine Learning Stream:** Demonstrate model efficiency and algorithm optimization with detailed performance graphs and clear pipeline visualizations.

Ensure your presentations translate complex data into clear, actionable business insights.

Examples of Quantifying Impact

Retail Example

"Optimized inventory management with SQL and Tableau. Data was cleaned and aggregated using SQL queries to identify sales patterns. Visualizations in Tableau helped to *forecast demand, leading to cost savings of 5%."*

Examples of Quantifying Impact

Marketing Example

Showed that customer engagement could be increased by 8% with a new segmentation scheme. Feature engineering was conducted to create meaningful customer segments based on purchase history and demographics.

Making Complex Concepts Accessible

Communicating complex data science concepts clearly is essential for audiences without technical backgrounds, including recruiters and HR teams.

Strategies to Enhance Understandability:

- **Use Analogies and Metaphors:** Bridge understanding gaps with relatable comparisons.
- **Incremental Explanation:** Simplify concepts step-by-step.
- **Visual Aids:** Employ diagrams and infographics for clarity.

Clear communication ensures your projects are comprehensible to all, enhancing your professional appeal and broadening project impact.

Example of Making Complex Concepts Accessible

Before:

"Improved patient outcomes by developing a predictive model using Python and scikit-learn. Data was preprocessed using pandas to handle missing values and standardize features. Logistic regression was selected through cross-validation due to its interpretability and performance."

After:

"Improved patient outcomes by developing a predictive model using Python and scikit-learn. Think of the predictive model as a way to forecast patient health based on past data, much like predicting the weather. Data was preprocessed using pandas to handle missing values and standardize features. This preprocessing is like organizing and cleaning up messy medical records to ensure all information is complete and consistent. Logistic regression was selected through cross-validation due to its interpretability and performance. Imagine trying different medical treatments and choosing the one that consistently gives the best results; that's what cross-validation does for model selection."

This approach effectively communicates complex concepts to both technical and non-technical audiences, ensuring clarity and comprehension across diverse stakeholders.

Questions?