# Project Execution

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$ echo "Data Sciences Institute"
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# Review

- Yesterday, we discussed the goals of the Team Project and the value that it can bring to each of your portfolios. This is an opportunity to *showcase the skills* that you've learned, and your ability to apply them to a *real-world problem* to deliver *real business value*.

- You should now be reasonably aligned with your team on the **industry** that you will be analyzing, the **business question** that you want to answer, and the **type of data** you will be using.

# Today's Content

1. Executing your project and dealing with uncertainty.

2. Expectations for today.

# Executing Your Project

# Leveraging Project Management Methodologies

Explore methodologies like Scrum, Kanban, Waterfall, and Agile on your own. For now, let's focus on an essential concept: **spikes**.

**Spikes** are short, time-boxed research tasks designed to answer specific questions or solve particular problems before starting the main project work. They are designed to *reduce uncertainty*.

# Handling Uncertainty in Your Project

Throughout your project, there will be moments when you are unsure of how to proceed, or what task to work on next. **Spikes** help us reduce uncertainty and make these decisions!

- Spikes are effort/time-bound tasks specifically designed to *reduce uncertainty*, or make *design/methodological decisions*.
    - E.g. Choosing between two model types.
- The outcome of a spike will be a more well-defined task(s).
    - E.g. Developing the model that seems more promising.

# Benefits of Spikes

- **Clarify Requirements**: Quickly gather necessary information.

- **Solve Problems Early**: Address technical uncertainties before main development.

- **Prevent Delays**: Avoid excessive brainstorming that can stall progress.

- **Reduce Unknowns**: Lower the project's uncertainties.

- **Efficient Estimates**: Provide well-constrained estimates on specific work items.

- **Maximize Value**: A one-day spike giving 80% confidence can be more valuable than a three-day spike giving 90%.

# Strategic Planning for Short and Long-Term Goals

Setting realistic time frames for your project stages is crucial. Use S.M.A.R.T goals to structure your planning effectively:

- **Specific:** Define clear details about what needs to be achieved, who's involved, and where it will occur.

- **Measurable**: Establish concrete criteria for measuring progress and success.

- **Achievable**: Ensure the goals are realistic, considering available resources and constraints.

- **Relevant**: Align goals with broader business objectives to ensure they are meaningful.

- **Time-bound**: Set definitive deadlines to maintain focus and urgency.

## Example: Customer Retention Model

**Scenario**: Develop a predictive model to improve customer retention for a subscription-based service.

- **Specific**: Machine learning model to predict customer churn using six months of user activity and demographic data.
- **Measurable**: Target 80% accuracy on a validation set.
- **Achievable**: Use Python's Scikit-Learn and a marketing department dataset.
- **Relevant**: Aligns with the company's goal of reducing churn and improving retention.
- **Time-bound**: Initial model version in three months, with testing and deployment in the next quarter.

# Team Goals for Today

1. Dig deeper into your business question to understand the value your will be delivering. ***Who are your stakeholders and why do they care about your project?***

2. Explore your dataset. Is it clean? What are its limitations? ***Will you be able to answer your question with this dataset?*** Start your analysis.

3. Add your project plan to your team's README file. This plan should include details on:

   - What value does your project bring to the industry?

   - How will you answer your business question with your chosen dataset?

   - What are the risks and uncertainties?

   - What methods and technologies will you use?

4. Assign data cleaning and analysis tasks to team members.

# Team Goals for Today

Conduct a practise stand-up with your team! You should each be able to talk about:

- What you worked on yesterday.

- What you are planning to do today.

- Do you have enough detail to work on your tasks?

- Are there any blockers?

# Questions?