Programming Section #4: [Plotting] Teacher Page

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Storyline

Starting with a discussion about the importance of HOW data is portrayed, this lesson will cover the basics of portraying data in MATLAB while keeping in mind the responsibilities of visualization and importance of being deliberate in data processing and presentation.

Main Learning Goal

Develop familiarity with plotting and visualization techniques in the MATLAB environment. Apply knowledge of different visualization techniques to present data in an efficient and appropriate manner.

Cover how to create, resize, label, and adjust plots to desired specifications.

Focus Question

What is the best way for me to visually communicate my data in MATLAB?

ElicitHow will I engage students and elicit their ideas?

Activity Name and				
Description	Teacher Moves	Student Moves	Resources	
 Map Exploration 10min Discuss the philosophy behind mapmaking and how it affects our interpretations 	 Walk the students through the content, probably lecturestyle Lead a discussion on how different maps can imply different things. 	• Find different examples of unique maps online and share with the class / discuss	 Chart Junk (unnecessary aspects/properties of a figure) Different Interactable Maps (could have students explore detailed and less detailed map options) Info on Interpreting Maps How to choose the right chart 	

Develop

How will I get students to explore, explain, and develop ideas?

Activity Name and Description	Teacher Moves	Student Moves	Resources	
 Lil Pump activity 35min Walk through example of data processing 	Walk the students step by step through the live script showing how simple data can be processed and turned into visualizations.	 Following along with the teacher and the live script, ensuring they understand how it works 	 How to choose the right chart MATLAB plotting documentation MATLAB data import documentation 	

Deploy

How will I get students to use and apply their ideas to what they've learned?

Activity Name and Description	Teacher Moves	Student Moves	Resources	
 Lil Pump extension 35min Students try processing their own data 	Supervise students and assist them with applying ideas from the example code into processing data from a new column in the excel data sheet	Adapting the coding techniques covered in the develop section to a new set of data from the same data file	 How to choose the right chart MATLAB plotting documentation MATLAB data import documentation 	

Refine

How will I get students to extend, elaborate, and change their ideas based on what we now understand?

	ity Name and						
Descr	ription	Teacl	ner Moves	Stude	ent Moves	Resou	urces
•	Discussion 5min Answer a few questions about what their visualizations communicate	•	Prompt the students to have a discussion about the questions in the assignment	•	Write down some ideas to the questions and then share in a group discussion	•	How to choose the right chart How to read different types of charts