SESSION PLAN	
Session Name	Data Visualization with Matplotlib
Learning Outcomes(10 min)	
● Build custom plots with matplotlib and Pandas ● Catch trends, anomalies and patterns in data with visualizing data ● Know which plot is suitable for different types of data and use accordingly	
Prerequisites for the Mentor ● Data Visualization with Matplotlib	**Prerequisites for the Student** ● Data Visualization with Matplotlib

Timing	Instructor Activities

150 min	● Ask learners what they have learned from the concept? (10 min)
	● Why is visualization important? (30 min)
	  • https://www.digitalvidya.com/blog/introduction-data-visualization-in-python/
	  • https://towardsdatascience.com/data-science-with-python-intro-to-data-visualization-and-matplotlib-5f799b7c6d82
	● Data Visualization with Matplotlib (60 min)
	  • Matplotlib basics
	  • Histograms
	  • Box Plots
	  • Scatter Plots
	  • Plot Customization
	● Practice problems on Matplotlib basics,Histograms,Box Plots,Scatter Plots , Plot Customization.
	  • Refer the GitHub repo for problems (10 min)
	● Quiz on Data Visualization with Matplotlib. (10 min)
	● Questions and Discussion on doubts - AMA (30 min)

Context setting for code along (objectives and key takeaways) (5 min)

- Applying skills to solve a problem
    - Quiz learners on how to solve the problem posed given the concept that they have already learned. Let them come up with the approach.
    - Which data structure is best suited to capture data and calculate the result? Pose to the learner these questions.
- Adapting to something new
    - Bring attention to the learner about different formats of storing data and how to quickly search and implement how to read files stored in an unknown format to the learner.
    - How to look for help in documentation and quickly solve problems.
- Problem-solving workflow
    - Refer to Polya's How to Solve it - the broad principles of problem-solving.
    - Highlight how a hard problem can be broken down into smaller problems and the solution of the smaller problems build up as a solution to the larger problem

Code Along (120 minutes)

- Dataset overview - IPL dataset, rules of cricket
- High-level objective - what will be the outcome
- Explain the problem statement
- Engage the learner while solving the problem
    - While solving the problem pause, and question the learners if there are alternate ways of solving the problem.
    - While writing out the code, ask how to figure out in which data structure format is the data stored - use type()
    - Ask them which part of the data needs to be accessed to answer the questions posed in the code along.
- In case you fumble/are unable to get to the right answer - refer to the provided solution. Tell learners that it is ok to get stuck and how to look for help on StackOverflow, google
    - Purposefully make mistakes and ask the learners to point out the error and debug for you. Let them point out and build the basic idea for the solution.
    - Ask focused questions to gauge if learners are understanding
    - Set the expectation that errors are important of the learning process and emphasis on the importance of debugging.
    - Note questions parked if any. Resolve or answer later in slack or in the coming session

Next Session	
● Concept - Summarizing data with statistics (30 mins) ● Key topics to be highlighted - highlight where they would need to spend more time and importance w.r.t Data Science. ○ Introduction to types of data ○ Measures of Central Tendency ○ Measures of Dispersion ○ Skewness, Kurtosis and Correlation	