SESSION PLAN 13	
Session Name	Regularization

Learning Outcomes

- Understand the intuition behind gradient descent
- Understand bias-variance trade-off in data
- Use regularization to get an optimized model
- Apply cross-validation and hyperparameter tuning techniques to further improve the results

Prerequisites for the Student

- Regularization

Student Activities

- Discussion with Mentor what they have learned.
- Overview of Regularization
    - Gradient Descent
    - Bias-Variance Trade-off
    - Lasso and Ridge regression
    - Cross-validation and Hyperparameter tuning
- Good blog on Gradient Descent:- https://towardsdatascience.com/gradient-descent-in-a-nutshell-eaf8c18212f0
- Ask learners How Cross validation help in optimizing the model?
- When and where to choose L1 and L2 regularization?
- What's the relation of bias-variance to overfitting and underfitting?
- Difference between parameters and Hyper-parameters?
- Practice problem on Regularization
    - Refer the GitHub repo for problems
- Quiz on Regularization.
- Code Along
- Questions and Discussion on doubts - AMA

Next Session

- Concept - EDA and Data Pre-processing
- Key topics to be highlighted - highlight where they would need to spend more time and importance w.r.t Data Science.
    - Data Cleaning
    - Data Transformation
    - Data Exploration