SGC Agenda - Session 3

The session will be conducted when students will be in the sixth week of course 3, machine learning - II. The broad breakdown of the concepts taught in this module can be found in the DS Curriculum attached here. Special instructions have been provided in the detailed lesson plan as per the following personas:

Group Persona Category	Work Ex.	Background
ET (Experienced-Tech)	High (> 7-8)	Technical
NET (Non-Experienced-Tech)	Low (< 7-8)	Technical
ENT (Experienced-Non-Tech)	High (> 7-8)	Non-Technical
NENT (Non-Experienced-Non-Tech)	Low (< 7-8)	Non-Technical

Objective

Since the learners have gone through the module on advanced regression which covers both generalised and regularised regression, the instructor will recap the topics so as to clarify any lingering doubts in the minds of the learner. Apart from that, the session will provide learners with a fresh perspective of looking and regularised regression models.

Agenda

1. Part-I: Introduction + Recap (20 mins)
2. Part II: Focused teaching (50 mins)
3. Part-IV: Doubt Resolution (20 mins)

Element Name	Colour Code
Doubt Resolution/P2P	
Focused Teaching	
Personalised Feedback	
Career Guidance	
Flip Classroom	
Miscellaneous	

Detailed Lesson Plan

Component	Instruction Task/Learner Task	Time (mins)	#Questions	Element of Engagement
Part-I: Introduction (20 mins)	Greet the learners and gather feedback from the learners regarding their learnings in the past two weeks. Set the agenda for the session *(Keep the introductions a bit brief as the focused teaching component might consume a fair amount of time.)*	20	-	Social Support
Part-II: Focused Teaching (50 mins)	A quick recap of the main concepts taught in Advanced Regression, like: • What is the difference between Generalised & Regularized Regression • What is Lasso & Ridge regression • What are the effects of Lasso & ridge regression on parameters • What is Elastic Net • Different model selection criteria such as r-squared, adjusted r-squared, AIC and BIC • Feature Selection	50	10	Content + Task-Support
Part-III: Doubt Resolution (15 mins)	Clear the doubts that the learners might have (they will be asked to come up with a list of doubts which will be made available to you beforehand). *Don't spend too much time on unnecessary or vaguely-constructed doubts. Also, urge the other students on the call to answer their peers' doubts to induce peer interactions.*	20	-	Doubt Resolution

Questions

Please find a broad pool of questions below. This pool might contain two kinds of questions:

- Most frequent doubts that our learners face in these topics
- Common interview questions from these topics

Please try and address at least 4-5 of these during the session irrespective of whether the students ask their own doubts or not. Some of these might be covered as a part of the doubts coming from the students, so please make sure there aren't any repetitions from your side.

- Why is regularisation important for regression models?
- Why is Lasso regression used for subset selection while Ridge is not?
- Explain the hyperparameter in lasso and ridge regression.
- What makes generalised linear models 'linear'?