

# Day 9 Quiz

10.07.2024

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- Q1.** What is the difference between regression problems and classification problems?
- Q2.** What is a binary variable and how do we represent it mathematically?
- Q3.** A person wants to predict whether an individual on the Titanic ship died or not (binary outcome). The person proposes using a classification tree to predict this. Choose 3 features which might be relevant and design a very basic classification tree with 2 layers (i.e. only three splits!).
- Q4.** How do we determine what outcome to assign to each leaf in our classification tree? HINT: This happens at the training stage.
- Q5.** Now imagine we were doing a regression tree (e.g. house price prediction). How would we determine what value to assign to each leaf in our tree?
- Q6.** What is a random forest and how is it different to a decision tree?
- Q7.** What is deep learning?
- Q8.** Draw a simple neural network for the Titanic classification task described in Q3. Use the same features you proposed in Q3. Your neural network should have three layers (input, hidden and output). The hidden layer should have 8 neurons. Make sure to note the dimensionality of the data at each layer.