



AI CoE Recruitment Coding Challenge

Thank you very much for applying to Deloitte! The next part of the interview process consists of completing this coding challenge.

Question 1

The MNIST handwritten digit dataset is one of the most commonly used datasets for image classification. You can access the dataset here: <http://yann.lecun.com/exdb/mnist/>. It is also available in many ML packages such as TensorFlow, PyTorch, FastAI. Feel free to directly load the dataset via either source. After obtaining the data, design a neural network architecture to perform digit recognition and share your code implementing the NN and appropriate performance metrics on the test set.

We encourage you to write your code using basic Object Oriented Programming (OOPs) concepts.

Question 2

Company XYZ is a major credit card company. They have found that their existing fraud detection system is slow to recognize new patterns of fraud and is costing them lots of money. They have contracted Deloitte to implement an algorithm that returns all transactions that seem unusual and are worth being investigated further. They have provided two tables: Table "cc_info" which contains general information about the credit card and its holder, and "transactions" which contains information about each transaction that happened between August 1st and October 30th for credit cards in the cc_info table. Your task is to design and implement a neural-network based solution that will return all transactions that seem to be fraudulent and require further investigation.

We encourage you to write your code using basic Object Oriented Programming (OOPs) concepts.



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