Customer segmentation is a process to dividing customers into groups which possess common characteristics based on their age, gender, profession as well as interests. By doing so will enable the company to gain insights of customer's needs or preferences, therefore the company will design a marketing strategy to target the most profitable segments.

Recently, there has been a decline in revenue for the bank and investigation has been carried out to identify the root of the problem. The bank found out that the reduce in revenue is mainly due to decrement of the deposition of money into the bank by the clients. Hence, the bank decided to conduct marketing campaigns to persuade more clients to deposit money into the bank.

The purpose of marketing campaign is to collect customer's needs and overall satisfaction. There are a few essential aspects of the marketing campaign namely, customer segmentation, promotional strategy, and etc. Correctly identified strategy may help to expand and grow the bank's revenue.

You are provided a dataset containing details of marketing campaigns done via phone with various details for customers such as demographics, last campaign details etc. **Hence, your job as data analysts cum deep learning engineer is to develop a deep learning model to predict the outcome of the campaign.**

The criteria of the project are as follows:

1) Develop a deep learning model using TensorFlow which only comprises of Dense, Dropout, and Batch Normalization layers.
2) The **accuracy** of the model must be more than 70%.
3) Display the training loss and accuracy on TensorBoard
4) Create modules (classes) for repeated functions to ease your training and testing process

Files to be submitted and uploaded to GitHub and LMS (submission link will be given on the assessment day):

1) Training, deployment scripts and classes (GitHub and LMS)
2) Dataset (.csv file) (GitHub and LMS)
3) Saved model in .h5 format and scalers (if any) in .pkl file format. (GitHub and LMS)
4) Training process plotted using Tensorboard can be snipped and saved as image file format (LMS) and use EarlyStopping callback to prevent overfitting.

5) The architecture of the model should be plotted using plot_model function and saved as .png file format. Include the image in README.md and also upload to LMS. <mark>(GitHub and LMS)</mark>
6) Performance of the model and the reports can be snipped and saved as image file to be included in the zip folder for LMS submission. <mark>(LMS and GitHub)</mark>
7) Include your GitHub URL directing to your assessment 2 in a text file then submit to LMS. <mark>(LMS)</mark>
8) **Don't forget to credit/cite the source of the data on your GitHub page**

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*Please zip all the required files into one folder then submit to LMS.

**Please save the dataset and model in 2 different folders to GitHub.

Complete the assessment and submit the files to LMS and GitHub by 5pm. Good Luck!!!

	100%	50%	0%
Task Completion (30%)	Scripts can be executed without any error on trainer's local machine.	-	Scripts fail to be executed on trainer's local machine.
Project requirements (30%)	Able to achieve the objectives of the project using relevant and appropriate approach.	Able to achieve the objectives of the project but using inappropriate approach such as brute forcing the solution.	Fail to achieve the objectives of the project.
Exploratory data analysis (30%)	Demonstrates strong understanding on the objectives of the project and performs relevant approach to process the data. Necessary data processing techniques such as, data loading, data cleaning, features selection and data preprocessing are performed and well justified.	Shows comprehensive understanding of the objectives of the project but uses incorrect or irrelevant approach to process the data. For example, removing NaN data when there are limited amount of samples in the dataset.	Shows limited understanding of the objectives of the project. Absence of data processing section in the code.
Code readability (5%)	Involves the usage of functions or methods for repeated tasks. Codes are easily readable and justified by including comments and description texts.	Minimal usage of functions or methods for repeated tasks. Available comments and descriptions but lack of details.	No usage of functions or methods for repeated tasks. Codes are difficult to read and understand. Missing descriptions and comments.
GitHub repo (4%)	Detailed and clear instructions of the project on README.md. Results such as graphs are also included in README.md as part of the project description.	Project successfully uploaded to GitHub repo but with incomplete README.md. Missing descriptions, instructions, and results.	Fails to upload project to GitHub repo and missing README.md
PEP8 compliance (1%)	Fully complies with PEP 8 Standard	Partially complies with PEP 8 Standard	Fails to comply with PEP 8 Standard
Total (100%)			