Cairo University **Faculty of Computers and Artificial Intelligence**

Third year (2022-2023) **Supervised learning (Spring 2023)**

Assignment 1

➢ Delivery Notes:

- This is a group task of 3 members (at most)
- All students should work and fully understand everything in the code.
- **All students should have the same TA section**
- Due date is on April 16th until 6:00 AM
- No Built-in Functions is allowed
- No late submission is allowed.
- Submission will be through google classroom
- No submission through e-mails.
- The submitted files should be named Assignment1_firstStudentID_SecondStudentID_ ThirsStudentID.ipynb
- **Do not send your code** to anyone**,** so that no other student would take your files and submit it under their names.
- **In case of Cheating, you will get a zero grade whether you give the code to someone or take the code from someone or from the Internet**
- Make sure that your notebook **has a clear and visible output** and that your code **is clean and understandable**.

Task:

1. Load MNIST dataset.
2. Subset your data to use only class 0 and class1 for the next steps.
3. Standardize your dataset
4. Divide data into training and validation set using 10-fold cross validation method
5. Implement Logistic Regression with different values for learning rate
6. Report difference accuracy for the different learning rate.