README:

1. The assignment is compressed in .tar file. You need to unzip it first to view the document. Inside the folder, there are 3 separate codes (.ipynb) format, one report (.PDF) and one README file (.PDF)

PRE_REQUISITE TO RUN THE CODE.

1. You need to have Jupyter Notebooks to run .ipynb file. The best way to do is by installing Anaconda. Anaconda is the most widely used Python distribution for data science and comes pre-loaded with all the most popular libraries and tools.
   a. Download the latest version of Anaconda for Python 3.8.
   b. Install Anaconda by following the instructions on the download page and/or in the executable.
2. If you are a more advanced user with Python already installed and prefer to manage your packages manually, you can just use pip: pip3 install Jupyter
3. You need to upload the file in current directory of your Jupyter Notebooks to run the code.
4. You also need to setup the environment for Deep learning. Fort that you need to install Tesorflow and Keras in your system. It's only used for getting the MNIST dataset. You can manually install them by using PIP.

THINGS TO DO IN THE CODE.

1. In all the file (.ipnyb) there is a function called main(). In the main function you can change the value of Learning rate and Number of iteration.
2. The 1st file is "Problem 1 report.ipynb", you need to change the value of Learning rate and Number of iteration.
3. The 2nd file is "Problem 2 report.ipynb", you need to run only the main function to execute.
4. The 3rd file is "Problem 3 report.ipynb", you need to run only the main function to execute. You can chose either ReLU or Sigmoid in main function as activation.