Experiment 1: Case Study on PyTorch

AIM: The aim of this assignment is to explore PyTorch in detail, understand its architecture, ecosystem, and applications.

Problem Definition:

1. Choose one application area of PyTorch (e.g., Computer Vision, NLP, Reinforcement Learning, or another relevant domain).
2. Justify why you selected this application.
3. Define the software requirements (Python version, PyTorch version, libraries, etc.).
4. Define the hardware requirements (minimum and recommended specs).
5. Identify the dataset you will use and explain why.
6. Specify the evaluation metrics you plan to use (accuracy, F1 score, loss curves, etc.).

Report of the Case Study:

Your report should include the following sections:

- Introduction: Overview of PyTorch and motivation for the chosen application.
- Objectives: Clearly stated aims of your study.
- Requirements: Software, hardware, dataset, and evaluation metrics.
- Implementation: A step-by-step outline of how you would implement your model in PyTorch.
- Results: Present expected or actual outcomes (training curves, accuracy, screenshots, etc.).
- Discussion: Analyze the strengths, weaknesses, and challenges faced.
- Conclusion & Future Scope: Suggest improvements or research extensions.