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| **LAB No-1** |

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| **Subject: LAB Machine learning** |

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**EXPERIMENT 01:**

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| Introduction to machine learning and setting the environment. |

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| **OBJECTIVES:** |

* Understand the basic concepts and types of Machine Learning (ML).
* Explore real-world applications of ML.
* Learn the standard ML workflow (data collection, preprocessing, training, evaluation).
* Set up the Python programming environment for ML (e.g., Anaconda, Jupiter Notebook).
* Install and configure essential ML libraries (NumPy, Pandas, Scikit-learn, Matplotlib).
* Run a basic ML example to test the setup.

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| **Introduction:** |

**What is machine learning?**

**Machine Learning (ML)** is a branch of artificial intelligence (AI) that allows computers to **learn from data and make decisions or predictions without being explicitly programmed** .Instead of writing code with specific instructions, you give a machine learning model **data**, and it **learns patterns** from that data to perform tasks like classification, prediction, or detection.

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| **procedure:** |

**How to setting the environment using anaconda prompt:**

Step-by-Step: Setting the Environment using Anaconda Prompt:

#### **1. Open Anaconda Prompt**

* Go to **Start Menu**
* Search for **“Anaconda Prompt”**
* Click to open it

#### **2. Create a New Environment**

condo create --name ml env python=2.7

* mlenv is the name of your environment (you can change it).
* python=3.9 specifies the Python version.

Press Y when prompted to proceed.

3. Activate the Environment:

conda activate ml\_env

4. Install Essential Machine Learning Libraries

This command installs:

* **NumPy** – for numerical operations
* **Pandas** – for data handling
* **Matplotlib** – for data visualization
* **Scikit-learn** – for ML algorithms
* **Jupyter** – for running notebooks

5. Launch Jupyter Notebook:

We used this is a path for launching jupter notebook:

jupyter notebook --notebook-dir="D:\Data folder\dsplabs\ELECTRICAL ENGINEERING\SEMESTER 8th\Lab- machine learninng"

**Implementation the above step:**

Show environment use this command:

**i)conda env list**

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**ii)conda activate f\_machine:**

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**ii)launch Jupiter note book.**

jupyter notebook --notebook-dir="D:\Data folder\dsplabs\ELECTRICAL ENGINEERING\SEMESTER 8th\Lab- machine learninng"

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**Conclusion:**

In this lab, we gained a basic understanding of machine learning, its types, and real-world applications. We also successfully set up a Python-based machine learning environment using Anaconda. Essential libraries like NumPy, Pandas, Matplotlib, and Scikit-learn were installed, and Jupyter Notebook was launched to begin experimenting with ML code. This setup provides a strong foundation for developing and testing machine learning models in future labs.