Experiment No.1

Aim: Study of Anaconda IDE and it's Installation.

Theory: Anaconda is a popular distribution of Python and R used for data science, machine learning, and scientific computing. It comes with pre-installed libraries, tools, and IDEs like Jupyter Notebook and Spyder, making it easier to manage environments and packages.

- Key Features of Anaconda:

1. **Conda Package Manager:** Simplifies package installation and environment management.

2. **Integrated Development Environments (IDEs):**

-Spyder: A lightweight Python IDE that comes with Anaconda.

- Jupyter Notebook: A web-based interactive computing environment where you can create notebooks containing live code, visualizations, and text.

3**. Pre-installed Libraries:** Anaconda includes over 1,500 popular data science and machine learning libraries such as NumPy, pandas, Matplotlib, TensorFlow, and more.

4. **Environment Management**: You can create isolated environments for different projects with specific package versions to avoid conflicts.

- Installing Anaconda:

1. Download Anaconda:

- Visit [Anaconda's official website](https://www.anaconda.com/products/individual) and download the installer for your operating system (Windows, macOS, or Linux).

- Choose the version appropriate for your system, such as 64-bit or 32-bit.

2. Install Anaconda:

- Windows:

- Run the downloaded `.exe` installer.

- Follow the setup instructions, making sure to check "Add Anaconda to my PATH environment variable" if prompted (optional, but helpful for command-line use).

- **macOS**:

- Open the downloaded `.pkg` file and follow the installation instructions.

Linux:

- Open a terminal, navigate to the location of the downloaded `.sh` file, and run:

  ```bash
  bash Anaconda3-x.x.x-Linux-x86_64.sh
  ```

- Follow the on-screen instructions.

3. Verify the Installation:

- Open a terminal or command prompt and type the following command to verify that Anaconda is installed correctly:

  ```bash
  conda --version
  ```

- You can also launch the Anaconda Navigator, which is a graphical interface for managing environments and packages.

4. Test Your Installation:

- Create a new environment with Python 3.x:

  ```bash
  conda create -n myenv python=3.x
  ```

- Activate the environment:

  - On Windows:

    ```bash
    conda activate myenv
    ```

  - On macOS/Linux:

    ```bash
    source activate myenv
    ```

- Run Jupyter Notebook or Spyder from the terminal:

```bash
jupyter notebook
```

or

```bash
spyder
```

After installation, you can start coding with the IDEs provided, install additional libraries using `conda install`, and explore Anaconda's ecosystem.