Python Basics — Environment Setup & Package Check

Goal

Set up Python on your machine, install the required packages, and run a small script that **asserts** everything is installed correctly. If the checks pass, you're ready for the next assignments. Please write a short report showing an screenshot of the successful run of the script. Save your report as `python_basics_report.pdf` and upload it to the assignment submission page, together with the completed `python_basics_setup.py` file.

Part 1 — Install Python

Install Python **3.10+**.

Recommended options:

- **macOS**: Homebrew `python@3` (or download from python.org)
- **Windows**: python.org installer (check "Add Python to PATH")
- **Linux**: your distro package manager (or python.org)

Verify your install:

```
python3 --version
```

On Windows this might be:

```
python --version
```

Part 2 (Optional) — Create a virtual environment

If you plan to have multiple projects using python on your machine, it's a good idea to create a virtual environment for each project to avoid package version conflicts. This is optional. On macOS/Linux:

```
python3 -m venv .venv
source .venv/bin/activate
python -m pip install --upgrade pip
```

On Windows it might be different.

Part 3 — Install required packages

Install:

- `pandas`

- numpy
- matplotlib
- scikit-learn (import name is sklearn)
- torch
- torchvision (PyTorch vision package)

Using pip:

```
python -m pip install numpy pandas matplotlib scikit-learn torch
torchvision
```

Note: Installing torch/torchvision can be platform-specific (CPU vs CUDA). If the pip command above fails, use the official selector:

```
https://pytorch.org/get-started/locally/
```

Part 4 — Assignment: write a package-check function

Open python_basics_setup.py and complete the TODO.

Requirements:

1. Implement assert_required_packages() function. Inside you should verify all required packages are installed.
2. You can use assert so the program stops if anything is missing.
3. Print a success message if everything passes.

Run it:

```
python python_basics_setup.py
```

Grab a screenshot of the successful run.

What to submit

- python_basics_setup.py
- python_basics_report.pdf (with screenshot)