## AI Summer School - Day 1: Environment Setup (Windows + pip)

Step 1: Install Python and Add to PATH

- Go to https://www.python.org/downloads/
- Click "Download Python 3.11.x"
- Check "Add Python to PATH" before clicking Install Now
- Confirm installation using:

```
python --version
pip --version
```

Step 2: Create a Virtual Environment

```
python -m venv ai_project
```

Step 3: Activate the Environment

```
ai_project\Scripts\activate
```

Step 4: Install Libraries

```
pip install numpy pandas matplotlib seaborn scikit-learn streamlit jupyterlab xgboost
```

Step 5: Test Environment

```
import numpy as np
import pandas as pd
from sklearn.linear_model import LinearRegression
```

Step 6: Run JupyterLab

```
jupyter lab
```

Step 7: Save Environment

```
pip freeze > requirements.txt
```

Step 8: Reinstall Environment

```
pip install -r requirements.txt
```

Step 9: Reactivate Later

```
ai_project\Scripts\activate
```

Summary Table

| Task | Command |
|---|---|

| | |
|---|---|
| Create venv | python -m venv ai_project |
| Activate venv | ai_project\Scripts\activate |
| Install libraries | pip install ... |
| Save environment | pip freeze > requirements.txt |
| Restore environment | pip install -r requirements.txt |

Review Questions

1. Why add Python to PATH?
2. Why use a virtual environment?
3. Name 3 key AI libraries.
4. What is requirements.txt for?
5. How do you re-activate a venv?