



PNS SCHOOL OF ENGINEERING & TECHNOLOGY
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**LECTURE
NOTES ON
PYTHON PROGRAMMING LAB**

**DEPARTMENT OF COMPUTER SCIENCE &
ENGINEERING**

3rd SEMESTER

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Introduction to Python

Step 1: Install Python

 **Download Python:**

Go to: <https://www.python.org/downloads/>

 **Installation Steps:**

- 1. Choose the latest Python 3.x version.**
 - 2. Check the box: Add Python to PATH ☒**
 - 3. Click Install Now.**
 - 4. After installation, open CMD and run:**
`python --version`
`pip --version`
You should see version numbers printed.
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Step 2: Install IDEs

Option 1: PyCharm (Beginner-friendly for Python only)

•  **Download:**

<https://www.jetbrains.com/pycharm/download>

- **Choose Community Edition (free).**
 - **Install and run PyCharm.**
 - **On first launch, configure interpreter:**
 - **Go to File > Settings > Project > Python Interpreter**
 - **Select the Python version installed.**
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Option 2: VS Code (Lightweight, multi-language)

-  **Download:** <https://code.visualstudio.com/>
 - **Install it, then:**
 - 1. Open VS Code**
 - 2. Go to Extensions (Ctrl+Shift+X)**
 - 3. Install:**
 -  **Python**
 -  **Jupyter (optional)**
 - 4. Set interpreter:**
 - **Ctrl+Shift+P → "Python: Select Interpreter" → Choose installed Python**
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Option 3: Jupyter Notebook (Best for Data

Science / Labs)

- ***Requires Python & pip installed.***
 - ***Run this in CMD or terminal:***
pip install notebook
jupyter notebook
 - ***A browser window will open. Create a new Python notebook.***
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Option 4: Spyder (Scientific IDE, like MATLAB)

pip install spyder

spyder

Or install via Anaconda (recommended for data science):



<https://www.anaconda.com/products/distribution>

2. Write simple Python scripts to demonstrate Variable declaration

Declaring variables

name = "Ram"

age = 25

height = 5.4

is_student = True

Printing variables

print("Name:", name)

print("Age:", age)

print("Height:", height)

print("Is Student:", is_student)

Output:

Name: Ram

Age: 25

Height: 5.4
Is Student: True

3.Data types & operators in python

Data Types in Python

```
a = 10          # int  
b = 3.14       # float  
c = "Hello"    # str  
d = True       # bool  
e = [1, 2, 3]   # list  
f = (4, 5, 6)   # tuple  
g = {1: "one"}  # dict  
h = {1, 2, 3}   # set
```

Printing data types

```
print(type(a))  
print(type(b))  
print(type(c))  
print(type(d))  
print(type(e))  
print(type(f))  
print(type(g))  
print(type(h))
```

Output:

```
<class 'int'>  
<class 'float'>  
<class 'str'>  
<class 'bool'>  
<class 'list'>  
<class 'tuple'>  
<class 'dict'>  
<class 'set'>
```

4.operators in Python

```
a = 10  
b = 3
```

```
print("Addition:", a + b)    # Output: 13
```

```
print("Subtraction:", a - b) # Output: 7  
print("Multiplication:", a * b) # Output: 30  
print("Division:", a / b) # Output:  
3.3333333333333335 (float division)  
print("Floor Division:", a // b) # Output: 3 (rounds  
down to the nearest whole number)  
print("Modulus:", a % b) # Output: 1  
(remainder of the division)  
print("Exponentiation:", a ** b) # Output: 1000  
(10 to the power of 3)
```