**🌟 Introduction to Python**

Python is World’s most popular programming language. It is a beginner-friendly programming language widely used in web development, artificial intelligence, data analysis, automation, networking, and many other fields.

**🚀 What Can You Do with Python?**

* Web Development
* Automation
* Backend API Development
* AI and Machine Learning
* Data Analysis
* Web Scripting
* Game Development
* Cloud Computing
* Cybersecurity
* QA Testing
* Networking
* Internet of Things (IoT), etc.

**🌟 Why Learn Python?**

* Easy to Learn: Start coding quickly, even if you're a beginner
* Global Opportunities: Python skills are in demand worldwide
* Top Companies Use Python: Google, Facebook, NASA, and more
* Great Salary: Python developers earn an average of $126,952 annually in the US (according to Indeed.com)

**🌐 Python is Used By:**

* Google
* Instagram
* Netflix
* NASA
* And almost every tech company you can think of!

**🖥️ Installing Python**

Let's get Python up and running on your machine!

**On Windows:**

1. Download Python from the official website: [python.org/downloads](https://www.python.org/downloads/)

2. Run the installer.

3. Check the box that says “Add Python to PATH”.

4. Click "Install Now".

5. Open Command Prompt and type `python --version` to check the installation.

**On Mac:**

1. Download Python from the official website: [python.org/downloads](https://www.python.org/downloads/)

2. Run the installer.

3. Open Terminal and type `python3 --version` to check the installation.

**On Linux:**

1. Open Terminal.

2. Type `sudo apt-get update`.

3. Type `sudo apt-get install python3`.

4. Type `python3 --version` to check the installation.

**💻 Installing Visual Studio Code (VS Code)**

VS Code is a great code editor to write Python. Let's get it set up!

**On Windows:**

1. Download VS Code from the official website: [code.visualstudio.com](https://code.visualstudio.com/)

2. Run the installer.

3. Open Visual Studio Code.

4. Click on Extensions.

5. Search for "Python".

6. Click "Install".

**On Mac:**

1. Download VS Code from the official website: [code.visualstudio.com](https://code.visualstudio.com/)

2. Run the installer.

3. Open Visual Studio Code.

4. Click on Extensions.

5. Search for "Python".

6. Click "Install".

**On Linux:**

1. Download VS Code from the official website: [code.visualstudio.com](https://code.visualstudio.com/)

2. Run the installer.

3. Open Visual Studio Code.

4. Click on Extensions.

5. Search for "Python".

6. Click "Install".

🏃‍♂️ **Running Python Code in VS Code**

Let's write and run your first Python code in VS Code!

1. Create a folder named `python-course`.

2. Open Command Prompt at the folder location.

3. Type `code .` to open VS Code.

4. Create a new file with a `.py` extension (e.g., `hello.py`).

5. Write your Python code in the file:

|  |
| --- |
| print("Hello, World!") |

6. Save the file.

7. Open Command Prompt and type `python hello.py` to run the code.

**🎉 Python Examples**

**Example 1: Print Your Name**

|  |
| --- |
| print("John Doe") |

**Example 2: Print Your Name and Address**

|  |
| --- |
| print("John Doe")  print("123 Main Street")  print("New York, NY 10001") |

**🧙 Escape Characters in Python**

Escape characters let you include special characters in strings. Here are some handy ones:

|  |  |
| --- | --- |
| Escape Character | Description |
| \n | New Line |
| \t | Tab |
| \“ | Double Quotes |
| \’ | Single Quotes |
| \\ | Backslash |

**💡 Challenge 1: Write About Yourself**

Write a little about yourself using 10 different print statements. Have fun and be creative!

Day 2

**🌟 Variables In Python**

Variables are like containers that store data values. In Python, you don’t need to declare the type of a variable, as the language is dynamically typed. This means you can just assign a value to a variable, and Python will handle the rest.

**Syntax**

|  |
| --- |
| **variable\_name = value** |

**🚀 Why Use Variables?**

* **Store Data:** Variables allow you to store data that can be used and manipulated throughout your code.
* **Readability:** They make your code more readable by giving meaningful names to data.
* **Flexibility:** Variables enable you to easily update and manage data values.

**🚀 Rules For Variable Name**

* Variable names are case sensitive, i.e., a and A are different.
* A variable name can consist of letters and alphabets.
* A variable name cannot start with a number.
* Keywords are not allowed to be used as a variable name.
* Blank spaces are not allowed in a variable name.

**🎉 Variable Examples**

**Example 1: Storing a Name**

|  |
| --- |
| name = "John Doe"  print(name) |

**Example 2: Print Your Name and Address**

|  |
| --- |
| age = 30  print(age |

**Example 3: Print Your Full Name From First and Last Name**

|  |
| --- |
| first\_name = "Bishworaj"  last\_name = "Poudel"  print(f"My full name is {first\_name} {last\_name}") |

**Example 4: Find Difference Between Income and Expenses**

|  |
| --- |
| income = 70000  expenses = 41000  print(f"Income is Rs. {income}")  print(f"Expenses is Rs. {expenses}")  print(f"Balance is Rs. {income-expenses}") |

**Example 5: Basic Calculation in Python Session**

|  |
| --- |
| num1 = 10  num2 = 3  sum = num1 + num2  # 13  diff = num1 - num2 # 7  mul = num1 \* num2 # 30  div = num1 / num2 # 3.333333  # Mod is remainder after division  mod = num1 % num2  intdiv = num1 // num2  cube = num1 \*\* 3  print(f"Sum is {sum} and diff is {diff}")  print(f"Mul is {mul}")  print(f"Div is {div}")  print(f"Mod is {mod}")  print(f"Int div is {intdiv}")  print(f"Cube is {cube}") |

**💡 Challenge 2: Your Finance Manager**

Write down what you spend each day from Sunday to Saturday, add them up to find the total for the week, and figure out the average amount spent per day.

Day 3