Intro to Programming with Python

Software

Software is a set of instructions to the hardware.

Programming

Programming means writing the instructions to create a software.

Code

The instructions that we write to create software is called **Code**.

Syntax

Similar to Grammar rules in English, Hindi, each programming language has a unique set of rules. These rules are called the **Syntax** of a Programming Language.

Why Python

Python is an easy to learn, powerful programming language. With Python, it is possible to create programs with minimal amount of code. Look at the code in Java and Python used for printing the message **"Hello World"**

Java:

class Main {

```java
    public static void main(String[] args) {

        System.out.println("Hello World");

    }

}
```

Python:

```python
print("Hello World")
```

Applications of Python

Python is a versatile language which has applications in almost every field

- **Artificial intelligence (AI)**
- **Machine Learning (ML)**
- **Big Data**
- **Smart Devices/Internet of Things (IoT)**
- **Cyber Security**
- **Game Development**
- **Backend Development, etc.**

Career Opportunities

Python developers have plenty of opportunities across the world

- **DevOps Engineer**
- **Software Developer**
- **Data Analyst**

- **Data Scientist**

- **Machine Learning (ML) Engineer**

- **AI Scientist, etc.**

Hello World Program in Python

Here is a simple Python code that you can use to display the message "Hello World"

Code

print("Hello World!")

Output

Hello World!

Possible Mistakes

Possible mistakes you may make while writing Python code to display the message "Hello World"

- **Spelling Mistake in print**

  prnt("Hello World!")

- **Uppercase 'P' in Print**

  Print("Hello World!")

- **Missing quotes**

  print(Hello World!)

- **Missing parentheses**

  print("Hello World!"

Printing Without Quotes

If we want to print the numerical result of 2 + 5, we do not add quotes.

Code

```
print(2 + 5)
```

Output

7

If we want to print the exact message "2 + 5", then we add the quotes.

Code

print("2 + 5")

Output

2 + 5

Calculations with python

Addition

Addition is denoted by

+ sign. It gives the sum of two numbers.

Code

```
print(2 + 5)
print(1 + 1.5)
```

Output

```
7
2.5
```

Subtraction

Subtraction is denoted by

- sign. It gives the difference between two numbers.

Code

```
print(5 - 2)
```

Output

```
3
```

Multiplication

Multiplication is denoted by

* sign.

Code

```
print(2 * 5)
print(5 * 0.5)
```

Output

10

2.5

Division

Division is denoted by

/ sign.

Code

```
print(5 / 2)
print(4/2)
```

Output

2.5

2.0