Sequence of Instructions

Program

A program is a sequence of instructions given to a computer.

Defining a Variable

A variable gets created when you assign a value to it for the first time.

Code

PYTHON

```
age = 10
```

Printing Value in a Variable

Code

PYTHON

```
age = 10
print(age)
```

Output

```
10
```

Code

PYTHON

```
age = 10
print("age")
```

Output

```
age
```

Variable name enclosed in quotes will print variable rather than the value in it.
If you intend to print value, do not enclose the variable in quotes.

Order of Instructions

Python executes the code line-by-line.

Code

PYTHON

```
print(age)
age = 10
```

Output

```
NameError: name 'age' is not defined
```

Variable

`age` is not created by the time we tried to print.

Spacing in Python

Having spaces at the beginning of line causes errors.

Code

PYTHON

```
a = 10 * 5
b = 5 * 0.5
 b = a + b
```

Output

```
File "main.py", line 3
    b = a + b
    ^
IndentationError: unexpected indent
```

Variable Assignment

Values in the variables can be changed.

Code

PYTHON

```
a = 1
print(a)
a = 2
print(a)
```

Output

```
1
2
```

Examples of Variable Assignment

Code

PYTHON

```
a = 2
print(a)
a = a + 1
print(a)
```

Output

```
2
3
```

Code

PYTHON

```
a = 1
b = 2
a = b + 1
print(a)
print(b)
```

Output

```
3
2
```

Expression

An expression is a valid combination of values, variables and operators.

Examples

a * b

a + 2

5 * 2 + 3 * 4

BODMAS

The standard order of evaluating an expression

- ***Brackets*** (B)
- ***Orders*** (O)
- ***Division*** (D)
- ***Multiplication*** (M)
- ***Addition*** (A)

- *Subtraction* (S)

Step by Step Explanation

```
(5 * 2) + (3 * 4)
(10) + (12)
22
```

Code

PYTHON

```python
print(10 / 2 + 3)
print(10 / (2 + 3))
```

Output

```
8.0
2.0
```

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