**Program**

* Set of instructions to complete a certain task

**Information & Algorithm**

- Operations

- Decisions

- Iteration

**WAP to calculate two user given numbers according to given operation.**

Step1: Ask a number with user as num1

Step2: Ask operation with user as oper

Step3: Ask 2nd number with user as num2

Step4: If oper is addition

num1+num2

if oper is subtraction

num1-num2

Step5: Show output

**WAP to show multiplication table of a given number**

Step1: num = 5

Step2: do num\*i, from i=1 to i=10

**Programming Language**

C C++ C# Java PHP Python Perl

* High Level Language
* Compiler/Interpreter
* Machine Level Language (binary (0,1))

**Web Application**

1. Front

HTML CSS Bootstrap JavaScript jQuery

AJAX

React JS Vue JS

React Native, Flutter

1. Back

Python – Django/Flask

PHP – Laravel / CI

ASP

1. Data

Mysql, mssql, oracle, sqlite

**IDE (Integrated Development Environment)**

* Text Editor
* Compiler/Interpreter
* Debugger

Pycharm, VS Code

**Variables & Data types**

String

name = 'ram kumar'

Numeric(integer, float)

age = 25

salary = 50000.0

Boolean

is\_married = False

Rules for naming variable

1. Should not start with a number
2. No special characters
3. Space is not allowed, we can use underscore to connect multiple words
4. Case sensitive

Type Casting

c = float(input('Enter a number'))

d = float(input('Enter 2nd number'))

print(c+d)

**Operator**

|  |  |
| --- | --- |
| Arithmetic | **+ - \* / \*\* % //** |
| Assignment | **= += -+ \*= /= \*\*= %= //=** |
| Relational | **== < > <= >= !=** |
| Logical | **or and not(!)** |
| Concatenation | **+ ,** |
| Membership | **in not in** |
| Identity | **is is not** |

**Conditional/Decision Making Statement/Selection**

1. if …

a = 10

b = 10

if a==b:

    print('Given numbers are equal')

1. if … else …

a = 10

b = 20

if a==b:

    print('Given numbers are equal')

else:

    print('Given numbers are not equal')

1. if … elif … else …

a = 10

b = 20

if a>b:

    print('A is greater')

elif b>a:

    print('B is greater')

else:

    print('Given numbers are equal')

**Looping Statements**

1. for

for i in range(10):

    print(i)

for i in range(1, 11):

    print(i)

for i in range(1, 11, 3):

    print(i)

for i in range(10, 0, -1):

    print(i)

1. while

i = 1

while i <= 10:

    print(i)

    i += 1

i = 10

while i >= 1:

    print(i)

    i -= 1