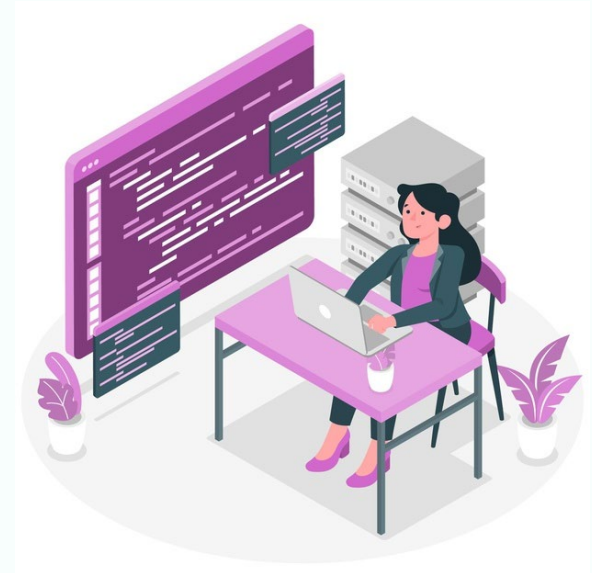
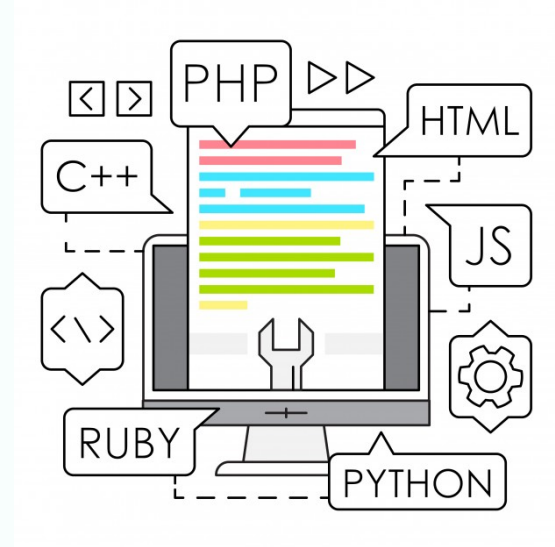


Basic Concepts of Programming

Ritwik Raj
Great Learning



Variable

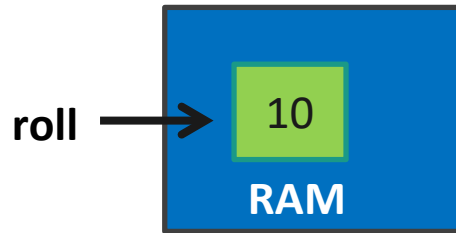


Variable

It is a **symbolic name or reference** to some kind of information.

A variable is a virtual container whose value can change over a period of time.

```
int roll = 10; // roll is a variable
```



Programming language	Code
Python	<pre>1 x = 5 2 y = "Ritwik" 3 print(x) 4 print(y)</pre>
Java	<pre>1 String name = "Ritwik"; 2 System.out.println(name);</pre>
C++	<pre>1 int myNum = 15; 2 cout << myNum;</pre>
C	<pre>1 int a=10,b=20; 2 float f=20.8; 3 char c='A';</pre>

Conditional Statements

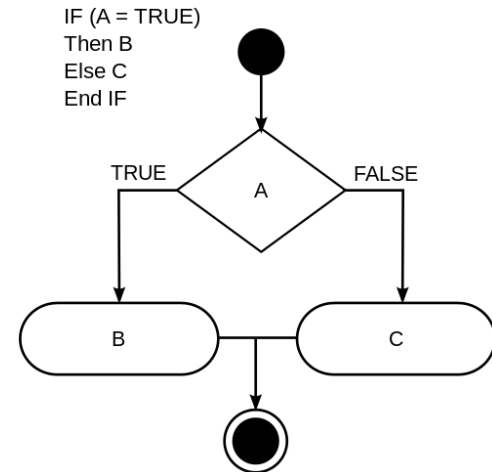


Conditional Statements

These are **expressions** that ask the program to determine **if a variable is true or false**

There are two possible ways:

1. True – Action1
2. False – Action2



Programming language	Code
Python	<pre>1 a = 434 2 b = 37 3 if b > a: 4 print("b is greater than a") 5 elif a == b: 6 print("a and b are equal") 7 else: 8 print("a is greater than b")</pre>
Java	<pre>1 public class Main { 2 public static void main(String[] args) { 3 int time = 17; 4 if (time < 10) { 5 System.out.println("Good morning."); 6 } else if (time < 20) { 7 System.out.println("Good day."); 8 } else { 9 System.out.println("Good evening."); 10 } 11 } 12 }</pre>

Programming language	Code
C++	<pre>1 #include <iostream> 2 using namespace std; 3 int main() { 4 int time = 22; 5 if (time < 10) { 6 cout << "Good morning."; 7 } else if (time < 20) { 8 cout << "Good day."; 9 } else { 10 cout << "Good evening."; 11 } 12 return 0; 13 }</pre>
C	<pre>1 #include <stdio.h> 2 int main(){ 3 int age; 4 printf("Enter your age?"); 5 scanf("%d",&age); 6 if(age>=18){ 7 printf("You are eligible to vote..."); 8 } 9 else{ 10 printf("Sorry ... you can't vote"); 11 } 12 }</pre>



Looping and Iteration

Looping and Iteration

Iteration is any time a **program repeats a process or sequence.**

Loops are a common type of iterations

EXAMPLE :

```
for(int i=1;i<=10;i++){  
    System.out.println(i);  
}
```

EXAMPLE :

```
int i=1;  
while(i<=10){  
    System.out.println(i);  
    i++;  
}
```

EXAMPLE :

```
int i=1;  
do{  
    System.out.println(i);  
    i++;  
}while(i<=10);  
}
```

Programming language	Code
Python	<pre>1 fruits = ["apple", "banana", "cherry"] 2 for x in fruits: 3 print(x)</pre>
Java	<pre>1 for (int i = 0; i < 5; i++) { 2 System.out.println(i); 3 }</pre>
C++	<pre>1 for (int i = 0; i < 5; i++) { 2 cout << i << "\n"; 3 }</pre>
C	<pre>1 for(i=1;i<=10;i++){ 2 printf("%d \n",i); 3 }</pre>

Datatypes



Datatypes



Data types **help classify what information a variable can hold** and what can be done with it.

Numbers

Decimal

Booleans

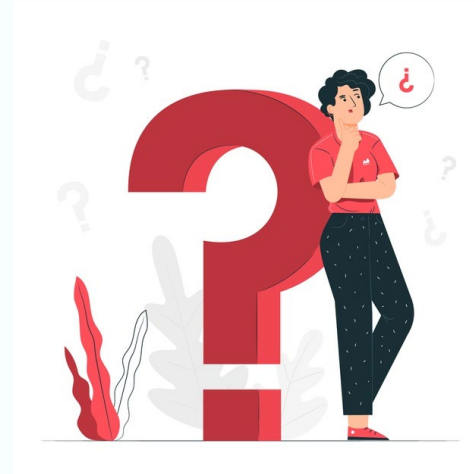
Characters

Strings

Programming language	Code
Python	<pre> Text Type: str Numeric Types: int, float, complex Sequence Types: list, tuple, range Mapping Type: dict Set Types: set, frozenset Boolean Type: bool Binary Types: bytes, bytearray, memoryview </pre>
Java	<pre> byte 1 byte short 2 bytes int 4 bytes long 8 bytes float 4 bytes double 8 bytes boolean 1 bit char 2 bytes </pre>

Programming language	Code
C++	<pre>int 4 bytes float 4 bytes double 8 bytes boolean 1 bit char 1 bytes</pre>
C	<pre>Basic Data Type - int, char, float, double Derived Data Type - array, pointer, structure, union Enumeration Data Type - enum Void Data Type - void</pre>

Functions



Functions

These are **self contained modules of code** that accomplish a particular task.

Methods with no return type :

```
public void add(int num1, int num2){  
    int sum = num1 + num2;  
    System.out.println("Sum of two numbers are : "+sum);  
}
```

Methods with return type :

```
public int add(int num1, int num2){  
    int sum = num1 + num2;  
    return sum;  
}
```

Programming language	Code
Python	<pre>1 def my_function(): 2 print("Hello from a function")</pre>
Java	<pre>1 public class Main { 2 static void myMethod() { 3 // code to be executed 4 } 5 }</pre>
C++	<pre>1 void myFunction() { 2 // code to be executed 3 }</pre>
C	<pre>1 void hello(){ 2 printf("hello c"); 3 }</pre>

Have a Great Learning

All the Best !!

Thank You!