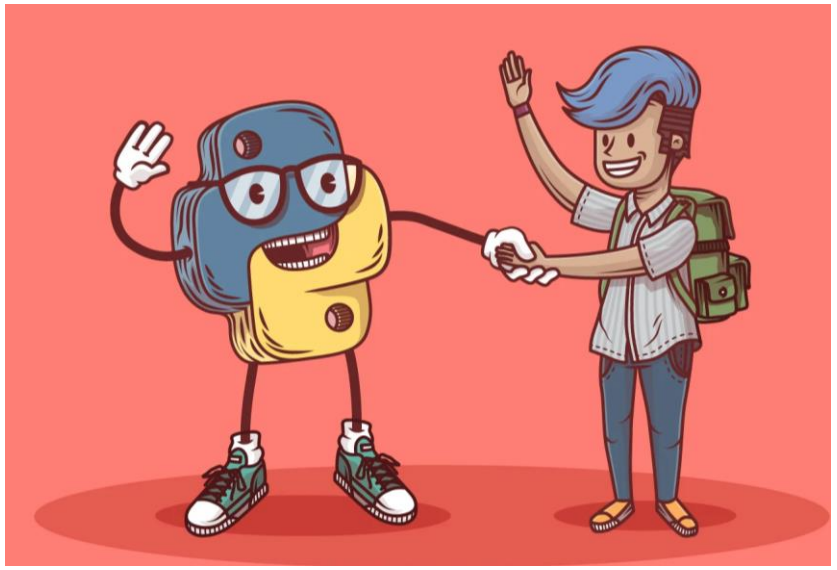


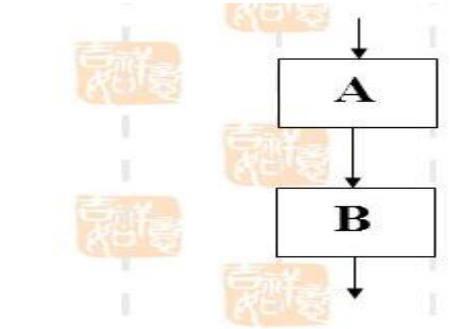
Programming Constructs

Programming Constructs:-

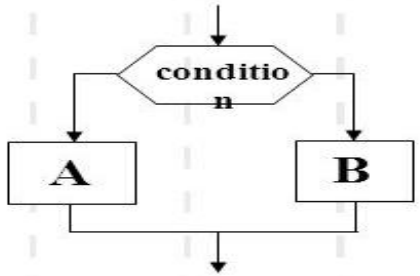
- These are the building blocks, used to create a program.
- Programming Constructs are of three types:-
  - Sequential Constructs
  - Selective Constructs
  - Iterative Constructs

Types of constructs

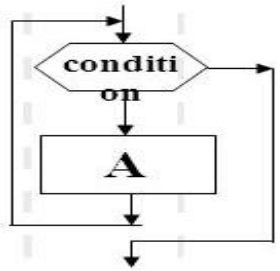
- Sequential Constructs:- When the set of statements are executed one after the other, they are called Sequential Constructs.
- Selective Constructs:- When the set of statements are executed depending upon certain conditions, it is called selective constructs. It's types are:-
  - Only If
  - If-else
  - Multiple If-Else
  - Nested if-else
  - Switch case



Sequential structure



Selection Structure



Selection Structure

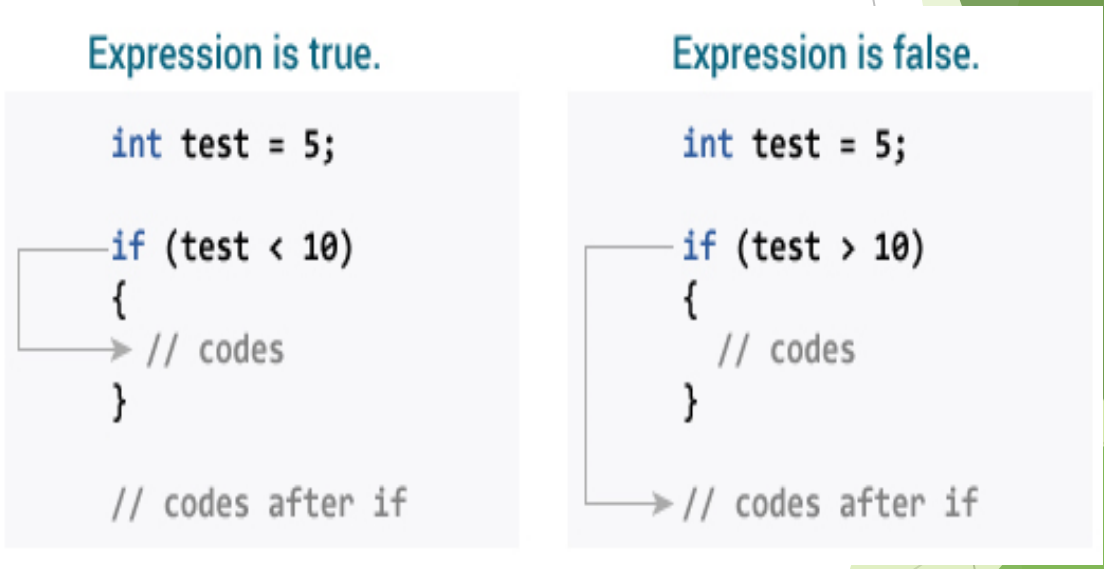
This is the picture showing the working of sequential structure and selection structure of a program.

Only If Statement

Syntax:-

```
if (condition)
{
    block of statements…
}
```

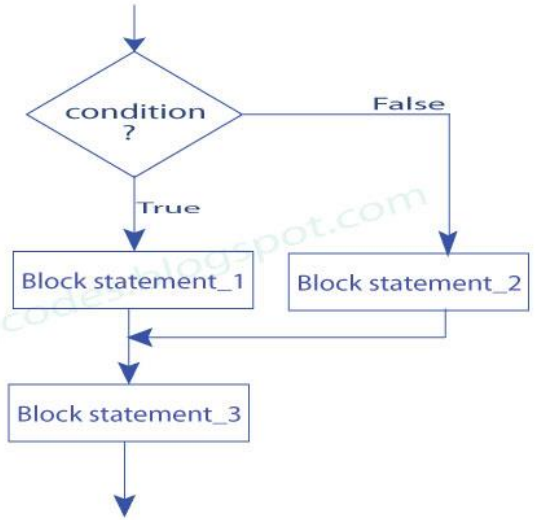
Working:-



If-else Statement

Syntax And Working

```
if(condition)
{
  block statement_1
}
else
{
  bolck statement_2
}
bolck statement_3
```



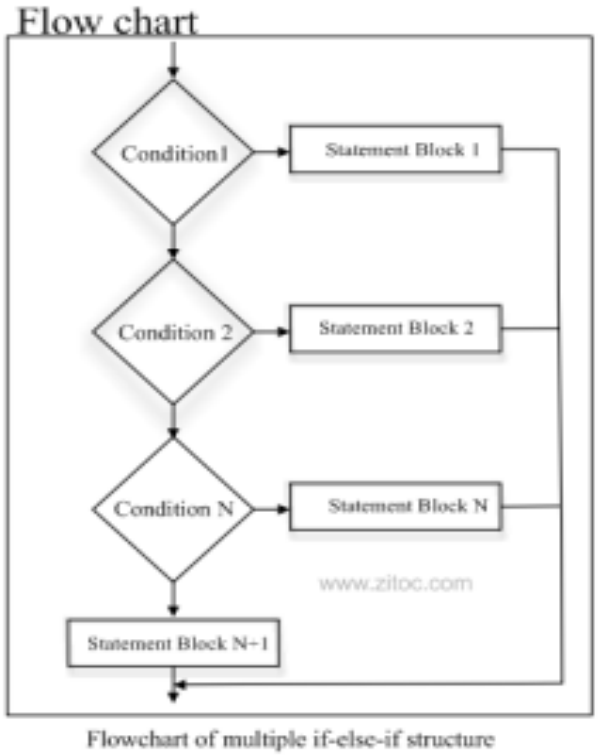
Example

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

    int user = 17;

    if (user <= 18) {
        System.out.println("User is 18 or younger");
    }
    else {
        System.out.println("User is older than 18");
    }
}
```

Multiple If-else statement

- It is Multi branch statement used to evaluate more than one conditions.

```
if (condition)
    {
    Body part code runs on if
    condition true.
    } elseif (condition)
    {
    Body part code runs on
    elseif condition true.
    } else {
    Body part code runs on
    both if and elseif
    condition false.
    }
```



Flowchart of multiple if-else-if structure

- Example :

```
if (score >= 90)
      printf("A\n");
else if (score >= 80)
      printf("B\n");
else if (score >= 70)
      printf("C\n");
else if (score >= 60)
      printf("D\n");
else
      printf("F\n");
```

Programs to practice

1. WAP to input a number and check positive or negative.
2. WAP to input a number and check even or odd.
3. WAP to input a number and check one digit or more than one digit.
4. WAP to input two numbers and print the absolute difference between them.
5. WAP to input three numbers and print the largest of them.

Assignment problems

1. WAP to input a number whether it is one digit, two digit, three digit or more than three digit.
2. WAP to input three numbers and print the largest of them.
3. WAP to input day number and print the respective day of the week.
4. WAP to input a number and print it in words.

Programs Covered In Class

WAP to input a number and check positive or negative.

```
import java.util.*;
class positive_negative
{
    void main()
    {
        int a;
        Scanner sc= new Scanner(System.in);
        a= sc.nextInt();
        if(a>=0)
        {
            System.out.println("Number is positive");
        }
        else
        {
            System.out.println("Number is negative");
        }
    }
}
```

WAP to input a number and check even or odd.

```
import java.util.*;
class even_odd
{
    void main()
    {
        int a;
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter a number");
        a= sc.nextInt();
        if(a%2==0)
        {
            System.out.println("Number is even");
        }
        else
        {
            System.out.println("Number is odd");
        }
    }
}
```

Programs Covered In Class

WAP to input a number and check positive or negative.

```
import java.util.*;
class digit
{
    void main()
    {
        int a;
        Scanner sc= new Scanner(System.in);
        a=sc.nextInt();
        if(a>=0&&a<10)
        {
            System.out.println("One digit number");
        }
        else
        {
            System.out.println("More than one digit");
        }
    }
}
```

WAP to input two numbers and print the absolute difference between them.

```
import java.util.*;
class absolute_difference
{
    void main()
    {
        int a,b,c;
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter two numbers");
        a= sc.nextInt();
        b= sc.nextInt();
        if(a<b)
        {
          c= b-a;
          System.out.println("The absolute difference is:"+c);
        }
        else
        {
            c=a-b;
            System.out.println("The absolute difference is:"+c);
        }
    }
}
```

Programs Covered In Class

WAP to input three numbers and print the largest of them.

```
import java.util.*;
class largest
{
    void main()
    {
        int a,b,c;
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter three numbers");
        a= sc.nextInt();
        b= sc.nextInt();
        c=sc.nextInt();
        if(a>b&&a>c)
        {
            System.out.println(a+" is greatest");
        }
        else if(b>a&&b>c)
        {
            System.out.println(b+" is greatest");
        }
        else
        {
            System.out.println(c+" is greatest");
        }
    }
}
```