ASSIGNMENT-1

What is java

Java is popular programming language, created in 1995

Java woks on different platforms

It is one of the most popular programming language in the world

It is open source and free to use

It is secure, fast and powerful

As java is close to C++,it makes it easy for programming

Java is ofen referred to as WORA (write once and Run Anywhere)in which we can execute the

Program in any device.

DATA TYPES IN JAVA

1. BYTE

Size =1 byte

Byte can stores whole numbers from -128 to 127

2. SHORT

Size =2 bytes

Short can store whole numbers from -32,76 to 32,767

3. INT

Size = 4 bytes

Int can store whole numbers from -2,147,483,648 to 2,147,483,647

4. LONG

Size = 8 bytes

Long can store whole numbers from -9,223,,372,036,854,775,808 to 9,223,372,036,854,775,807

5.FLOAT

Size = 4 bytes

Float can store fractional numbers. It can stores from 6 to 7 decimal digits

6.DOUBLE

Size = 8 bytes

Double stores fractional numbers. It can stores upto 15 decimal digits

7.BOOLEAN

Size = 1 bit

Boolean stores TRUE or FALSE values 1 = TRUE, 0 = FALSE

8.CHAR

Size = 2 bytes

Char can stores character/ASCII values

VARIABLES IN JAVA

In Java, Variables are the data containers that save the data values during Java program execution. Every Variable in Java is assigned a data type that designates the type and quantity of value it can hold. A variable is a memory location name for the data.

Char name=”sai”

Here char = data type

Name = vaiable name

Sai = value that is stored in char variable

CONDITIONAL STATEMENTS

In programming, we use the statements to run a block of code among more than one alternatives.

For example, assigning grades (A, B, C) based on the percentage obtained by a student.

if the percentage is above **90**, assign grade **A**

if the percentage is above **75**, assign grade **B**

if the percentage is above **65**, assign grade **C**

**IF Statement:**

**We use if statement to specify a block of java code to be executed if a condition is True**

**SAMPLE CODE : if (20 > 18 ){**

**System.out.println(“20 Is greater than 18”);**

**ELSE statement :**

**We use else statement to specify a block of code to be executed if the condition is false**

**SAMPLE COSE :**

**Int a=4;**

**If (a%2==0);{**

**System.out.println(“Number is even”);**

**} else;**

**System.out.println(“Numbe is odd”);**

}

IF-ELSE-IF ladder:

The if-else if ladder statement followed by multiple else-if statements

SAMPLE CODE

String city = “Mumbai”;

If (city == “Raipur”){  
System.out.println(“city is Raipur”);

}else if(city = “Delhi”);{

System.out.println(“city is Delhi”);

}else if(city = “Mumabi”);{

System.out.println(“city is Mumbai”)

}else(city = “Noida”);{

System.out.println(“city is Noida”);

}

System.out.println(“city”);

OUTPUT ; Mumbai

NESTED IF-STATEMENTS

In nested if statements, the if statements can contain a if or if-else statement inside

Another if or else if statement.

SAMPLE CODE: if (n1 >= n2) {

if (n1 >= n3) {

largest = n1;

} else {

largest = n3;

}

} if (n2 >= n3) {

largest = n2;

}else {

largest = n3;

}

} System.out.println("Largest Number: " + largest);

}

SWITCH statement:

The switch statement allows us to execute a block of code among many alternatives.

SAMPLE CODE:

switch (number) {

case 1:

size = "Small";

break;

case 2:

size = "Medium";

break;

// match the value of week

case 3:

size = "Large";

break;

case 4:

size = "Extra Large";

break;

default:

size = "Unknown";

break;

}

System.out.println("Size: " + size);

}

}

LOOPM STATEMENTS:

In computer programming, loops are used to repeat a block of code.

In Java, there are three types of loops.

for loop

[while loop](https://www.programiz.com/java-programming/do-while-loop#syntax-while)

[do...while loop](https://www.programiz.com/java-programming/do-while-loop#do-while-loop)

sample code:

int sum =0;

for(int j=1; j<=10; j++){  
 sum=sum+j;

}

system.out.println(“sum of 10 natural numbers” + sum);

}

WHILE LOOP

Java while loop is used to run a specific code until a certain condition is met.

Sample code”:

Int i=0;

S.O.Pln(“ printing the list of first 10 even numbers”;)

While(i<=10){

S.O.Pln(i);

i=i+2;}

DO-WHILE loop:

The do-while loop is similar to while loop. However, the body of do-while loop is executed once before the test expression is checked.

Sample code:

int i = 1, n = 5;

do {

System.out.println(i);

i++;

} while(i <= n);

  }

}

STINGS :

n object-oriented programming, the immutable string or objects that cannot be modified once it is created. But we can only change the reference to the object. We restrict to change the object itself. The String is immutable in Java because of the security, synchronization and concurrency, caching, and class loading. The reason of making string final is to destroy the immutability and to not allow others to extend it.

The String objects are cached in the String pool, and it makes the String immutable. The cached String literals are accessed by multiple clients.String pool: -

String pool is a special area in the java memory where the jvm stores a pool of string literals to promote reusability and save memory.

Example:

-

String n1 = “Vamshi”;

String n2 = “Vamshi”;

name1 == name2 //true

The String is safe for multithreading because of its immutableness. Different threads can access a single “String instance”. It removes the synchronization for thread safety because we make strings thread-safe implicitly.

Immutability gives the security of loading the correct class by Classloader. For example, suppose we have an instance where we try to load java.sql.Connection class but the changes in the referenced value to the myhacked.The connection class does unwanted things to our database.

ARRAYS:

An array is a collection of similar types of data.

For example, if we want to store the names of 100 people then we can create an array of the string type that can store 100 names.

String array = new string[100];

Sample code:

int[] age = {12, 4, 5, 2, 5};

System.out.println("Accessing Elements of Array:");

System.out.println("First Element: " + age[0]);

System.out.println("Second Element: " + age[1]);

System.out.println("Third Element: " + age[2]);

System.out.println("Fourth Element: " + age[3]);

System.out.println("Fifth Element: " + age[4]);

 }

}

ACCESS MODIFIERS:

In Java, access modifiers are used to set the accessibility (visibility) of classes, interfaces, variables, methods, constructors, data members, and the setter methods. For example,

class Animal {

public void method1() {...}

private void method2() {...}

}

In the above example, we have declared 2 methods: method1() and method2(). Here,

method1 is public - This means it can be accessed by other classes.

method2 is private - This means it can not be accessed by other classes.

TYPE CONVERSION:

The process of converting the value of one data type (int, float, double, etc.) to another data type is known as typecasting.

In Java, there are 13 types of type conversion. However, in this tutorial, we will only focus on the major 2 types.

1. Widening Type Casting

2. Narrowing Type Casting.

TRACE OFF:

The process of debugging the code for better understanding and error solving is know as trace off.