Day 1

20-09-2022

Software

Application software : This type of software mainly use to develop the application.

System software : Operating system : it is to run the machine. OS window, unix, linux etc.

Programming language :

C 1970

C++ 1980

Java 1990

Python

C#

JavaScript

Go lang

Etc

What is Java ?

Java is pure object oriented and platform independent programming language.

object : object is any real world entity.

Properties or state --🡪 have -🡪 name, age, weight, color, height etc.

Person

Behavior -🡪 do/does -🡪 teaching, sleeping, eating etc

Bank

Place

Car

Customer

Employee

class : blue print of object or template of object.

syntax of class

class ClassName {

property or variable or fields

behavior – function / methods

}

IDE

class

Java software

JDK : Java Development kit : which help to develop the application

JRE : Java run time environment :which help to run the application.

javac ProgramName.java : to compile the program

java classname : it is use to run the program

Day 2

22-09-2022

Variables : variable is a name which hold value and value can change during the execution of a program.

a=10;

name =”Raj Deep”;

Data types : data type is a type of data which tells what type of value it can hold.

2 types

1. Primitive data types : it is use to store only value.
2. Non primitive data types or reference data type: it use to store value as well as reference of another value.

Primitive data types :

8 types

1. byte 1 byte : -128 to 127 range
2. short 2 byte
3. int 4 byte
4. long 8 byte : without decimal
5. float 4 byte
6. double 8 byte : with decimal
7. char 2 byte : any single character a to z or symbol or number
8. boolean 1 bit : true or false

Operator : Operator is use to do some mathematical operation on variable.

1. Arithmetic operator : +, -, \*, /, %(remainder)
2. Conditional operator : >, >=, <, <=, ==, !=
3. Logical operator : && (and), || (or) , !(negation)

&& if all condition is true then result is true

|| if any condition is true then result is true

1. Assignment operator : =

int a=10;

int b = 40+60;

int c+d = 100+400; Error

1. Increment and decrement

int a=10;

a = a+1;

or

a++ increment the value by one

a= a-1;

or

a-- decrement the value by one

a=10;

c=30;

value a 10;

value c 30;

a = c; assigning the value of c in a variable

a == c; comparing the value of a and c

a = c+d; error

a+b == c+d comparing

Day 3

27-09-2022

Conditional statement

1. If statement

if(condition) {

true block

}

1. If else

if(condition) {

}else {

}

1. If else if
2. Switch statement

**If and else example**

class IfStatement {

public static void main(String args[]) {

int age = 25;

if(age>21) {

System.out.println("You can vote!");

}else {

System.out.println("You Can't vote");

}

System.out.println("Finish");

}

}

If else if program

class IfElseIfStatement {

public static void main(String args[]) {

int m1=70, m2=90,m3=50;

int total = m1+m2+m3;

int avg = total/3;

if(avg>90) {

System.out.println("A++ Grade");

}else if(avg>75) {

System.out.println("A Grade");

}else if(avg >65){

System.out.println("B Grade");

}else {

System.out.println("C Grade");

}

System.out.println("Thank You!");

}

}

switch : in switch user can take decision which block want to execute.

Syntax

switch(variableName){

case label1: block1;

break;

case label2: block2;

break;

case label3: block3;

break;

default : defaultblock

break;

}

switch, case, break and default are keywords

in Switch we can use variable of type int or char or String etc.

class SwitchStatement {

public static void main(String args[]) {

int choice = 5;

switch(choice) {

case 1: System.out.println("First block");

System.out.println("First block finish");

break;

case 2: System.out.println("Second block");

System.out.println("Second block finish");

break;

case 3: System.out.println("Third block");

System.out.println("Third block finish");

break;

default : System.out.println("Wrong choice");

break;

}

System.out.println("Finish");

}

}

Taking the value through keyboards in Java

1. Using Scanner class
2. Using DataInputStream
3. Using BufferedReader
4. Command Line Arguments.

Scanner : Scanner is pre-defined class part of util package which provided lot of pre defined methods which help to take the value through keywords.

Syntax to create the Scanner class object

Scanner sc =new Scanner(System.in);

sc.nextByte();

sc.nextShort()

sc.nextInt()

sc.nextLong();

sc.nextFloat();

sc.nextDouble();

sc.nextBoolean();

sc.nextChar() no methods

Scanner class with switch statement

import java.util.\*;

class InputValue {

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

/\*System.out.println("Enter the value of a");

int a = sc.nextInt();

System.out.println("Enter the value of b");

int b = sc.nextInt();

int sum = a+b;

System.out.println("Sum is "+sum);\*/

//System.out.println("Value of a is "+a);

int choice,a,b,sum,sub;

System.out.println("1:Add 2:Sub");

System.out.println("Plz enter your choice");

choice = sc.nextInt();

switch(choice) {

case 1: System.out.println("Enter the value of a");

a = sc.nextInt();

System.out.println("Enter the value of b");

b = sc.nextInt();

sum = a+b;

System.out.println("Sum of two number is "+sum);

break;

case 2: System.out.println("Enter the value of a");

a = sc.nextInt();

System.out.println("Enter the value of b");

b = sc.nextInt();

sub = a-b;

System.out.println("Sub of two number is "+sub);

break;

default : System.out.println("Wrong choice");

break;

}

System.out.println("Finish");

}

}

Looping : Looping is use to execute set of statement again and again till the condition become false.

While loop

Do while loop

For loop

Initialization : start and end position

Condition : true

Body of the loop

Increment or decrement the value

While loop

Initialization

while(condition) { entry loop

do the task

increment or decrement

}

Do while loop

Initialization

do {

do the task

increment or decrement

}while(); exit loop

For loop

1 2 4

for(initialization;condition; increment/ decrement) {

body of for loop 3

}

Initialization only once

Check the condition if condition is true then body of the loop and increment or decrement and then again check the condition till condition become false. – 2,3,4

Day 4

29-09-2022

Reference data types : it is use to store the value as well as reference of another data type.

array

class : user defined or pre-defined class

interface : user defined or pre defined interface

array: array is known as reference data type which is use to store more than one value of same type

int a=10;

syntax to declare the array

datatype arrayName[];

int abc[]; // array declaration

int xyz[]={10,20,30,40,50,60}; // array declaration with memory creation array index position start from zero.

System.out.println(a);

System.out.println(xyz);

System.out.println(xyz[0]);

System.out.println(xyz[1]);

System.out.println(xyz[2]);

Array example

class ArrayDemo {

public static void main(String args[]) {

int a=10;

a=20;

int abc[];

int xyz[]={10,20,30,40,50,100,12,34,54,34,23,56,78,90,45,67,100,10,200,300,400};

System.out.println(a);

//System.out.println(xyz);

System.out.println(xyz[0]);

System.out.println(xyz[1]);

System.out.println(xyz[2]);

System.out.println("Size of the array "+xyz.length);

System.out.println("Retrieve the elements from array using loop");

int searchNumber = 10;

int flag = 0;

for(int i=0 ; i<xyz.length ; i++){

//System.out.println(xyz[i]);

if(searchNumber ==xyz[i]){

flag++;

//break;

}

}

if(flag>0){

System.out.println("Element is present and it present number of times are "+flag);

}else {

System.out.println("Element not present");

}

}

}

Syntax for array memory creation

datatype arrayName[]=new DataType[size];

int abc[]=new int[10]; default 0

float xyz[]=new float[20]; float 0.0

class ArrayMemoryCreation {

public static void main(String args[]) {

int abc[]={100,200,300,400};

int num[]=new int[10];

System.out.println("Size of array is "+num.length);

System.out.println("Size of array is "+abc.length);

System.out.println("Value in zero index position "+num[0]);

System.out.println("Value in 2 index position "+num[2]);

System.out.println("Value in 9 index position "+num[9]);

//System.out.println("Value in 10 index position "+num[10]);

num[0]=100;

num[1]=200;

System.out.println(num[0]);

System.out.println(num[1]);

}

}

import java.util.\*;

class ArrayMemoryCreation {

public static void main(String args[]) {

/\*int abc[]={100,200,300,400};

int num[]=new int[10];

System.out.println("Size of array is "+num.length);

System.out.println("Size of array is "+abc.length);

System.out.println("Value in zero index position "+num[0]);

System.out.println("Value in 2 index position "+num[2]);

System.out.println("Value in 9 index position "+num[9]);

//System.out.println("Value in 10 index position "+num[10]);

num[0]=100;

num[1]=200;

System.out.println(num[0]);

System.out.println(num[1]);\*/

Scanner obj = new Scanner(System.in);

System.out.println("How many number do you want store");

int n = obj.nextInt();

int num[]=new int[n];

System.out.println("Plz enter number one by one");

for(int i=0;i<num.length;i++) {

num[i]=obj.nextInt();

}

int sum=0;

System.out.println("All elements are ");

for(int i=0;i<num.length;i++) {

//System.out.println(num[i]);

sum = sum + num[i]; // sum = 0+1, sum = 1+10

}

System.out.println("Sum of all numbers are "+sum);

}

}

String : String is a pre-defined or also known as reference data types.

Syntax to create the String class object.

String name = “Raj Deep”;

String msg = “Welcome to Java Training”;

import java.util.\*;

class StringDemo {

public static void main(String args[]) {

/\*String name = "Raj Deep";

String msg = "Welcome to Java Training";

System.out.println(name);

System.out.println(msg);

Scanner obj = new Scanner(System.in);

System.out.println("Plz enter your name");

//String fname = obj.next(); // it is use to scan the value through keyword, only one word.

String fname = obj.nextLine(); // more than one word till hit enter key

System.out.println("your name is "+fname);\*/

Scanner obj = new Scanner(System.in);

System.out.println("How many names do you want to store");

int n = obj.nextInt();

String names[]=new String[n];

System.out.println("Enter the names one by one");

for(int i=0;i<n;i++){

names[i]=obj.next();

}

System.out.println("All names are");

for(int i=0;i<n;i++) {

System.out.println(names[i]);

}

}

}

1. Create the Java Application to store more than one students details like sid, sname,age.
2. Create another Java application to store more than one students details like sid, sname,age, marks(array of array).