Day 7 - 06th June 2025

Java

| Java basics | Data Types, Variables, Operators, Control Statements, Loops, Arrays, Classes, Objects, |
| --- | --- |

Open labs

Then check for Java version

In cmd type

Java –version

or

Java -v

17 installed

Plz check for any of the ide’s is installed

Eclipse

Or intellij

Or vs code

Variable

X, y, name, age,

int —> data type

int age; ====> variable declaration

char name;

Assign value to a variable

age = 10;

name = ‘k’;

Declaring and assigning value to a variable

int age = 20;

char name =’M’;

Types of data types👍

Primitive

Int, char, float…

and non primitive

String, array…

Methods:

Public ===> anyone can access… ===> access modifiers in java (access specifiers in c++)

main ====> boss of your program ===> entry and exit point of the program

static ===> fixed ===> retains its value.. Variables X Static

Void ===> return type ====> return 0 value ===> success

Or

int add() {

int x =20;

return x;

}

public static void main(String[] args){

//body of the main

}

===============================

Try in c

================================

int add(){

int x = 10;

static int y = 20;

x++;

y++;

printf(“%d”, x);

printf(“%d”, y);

}

main(){

add(); ===>

add();

add();

}

—----$$$$$$$$$$$$$$$$$$------------------

#include <stdio.h>

int add()

{ int x=10;

static int y=20;

x++;

y++;

printf("%d\n",x);

printf("%d\n",y);

}

void main() {

add();

add();

add();

}

======================================================

**Task001:**

Wap to display greetings

**Code**

class hello {

public static void main(String[] args) {

System.out.println("hi,how are you ?");

System.out.println("I'm fine and you?");

}

}

Task002:

Wap to create a add method and call the method 3 times ..

Hint in method add declare variables and display them

**Code**

public class Main {

public static void add() {

int a = 10;

System.out.println("a = " + a );

}

public static void main(String[] args) {

add();

add();

add();

}

}

Task003

Write a Program in Java to Add two Numbers.

Input: 2 3

Output: 5

**Code**

public class Main {

// Method to add two numbers and display the result

public static void add() {

int a = 2;

int b = 3;

int sum = a + b;

System.out.println("Sum: " + sum);

}

public static void main(String[] args) {

// Calling the add() method three times

add();

}

}

Task004

Write a Program to Swap Two Numbers

Input: a=2 b=5

Output: a=5 b=2

**Code**

public class SwapNumbers {

public static void main(String[] args) {

int a = 2;

int b = 5;

//Before swapping

System.out.println("Before swapping: a = " + a + ", b = " + b);

int temp = a;

a = b;

b = temp;

//After swapping

System.out.println("After swapping: a = " + a + ", b = " + b);

}

}

Task005

Create a code in which you have 4 methods add, subtract, multiply and divide (return type int) with a main [method..to](http://method..to) call all the other methods

Out put:

Main started

Sum of 2 numbers is …..

Diff of 2 numbers is —-

Product of 2 numbers ….

Division of 2 numbers is ….

Main ended

// Online Java Compiler

// Use this editor to write, compile and run your Java code online

// Online Java Compiler

// Use this editor to write, compile and run your Java code online

**Code**

public class Main {

// Method to add two numbers and display the result

static void add() {

int a = 2;

int b = 3;

int sum = a + b;

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

}

static void subtract() {

int a = 2;

int b = 3;

int Sub = a - b;

System.out.println("Diff of numbers is " + Sub);

}

static void Mul() {

int a = 2;

int b = 3;

int mul = a \* b;

System.out.println("Product of numbers is " + mul);

}

static void divide() {

int a = 2;

int b = 3;

int div = a / b;

System.out.println("Division of numbers is " + div);

}

public static void main(String[] args) {

// Calling the add() method three times

add();

subtract();

Mul();

divide();

}

}

Task006

Write a program to check if a is greater or b.. Use ternary op

**Code**

public class Main {

public static void main(String[] args) {

int a = 10;

int b = 5;

String result = (a > b) ? "a is greater than b" : "a is not greater than b";

System.out.println(result);

}

Task007

Write a program to take input from the user and display it to the user

Input:

Id : Prasunamba

Pwd: 123456789

Output:

Hi ,

Your login id is Prasunamba

And your pwd is \*\*\*\*\*\*\*\*\*

HInt :

For scanner … import java.util.scanner;

Scanner sc = new Scanner([System.in](http://system.in));

Id = sc.nexLine();

**Code**

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Id : ");

String id = sc.nextLine();

System.out.print("Pwd: ");

String pwd = sc.nextLine();

// Create a masked password using '\*' characters

String maskedPwd = "\*".repeat(pwd.length());

// Display the formatted output

System.out.println("\nHi,\n");

System.out.println("\tYour login id is " + id);

System.out.println("And your pwd is " + maskedPwd);

sc.close(); // Always good to close the scanner

}

}

Task008

Write a program to create a class named Customer

Call the customer class in Task008 class using an object.

Hint

In the main method

Class Customer{

void accept(){

sysout(“accept customer called”);

}

Void display(){

sysout(“display customer called”);

}

}

Public class Test008{

psvm(String[] args){

Customer cobj = new Customer();

cobj.accept();

cobj.display();

}

}

**Code**

public class Test008 {

// Inner Customer class

class Customer {

void accept() {

System.out.println("accept customer called");

}

void display() {

System.out.println("display customer called");

}

}

public static void main(String[] args) {

Test008 outer = new Test008();

Customer cobj = outer.new Customer(); // Create inner class object

cobj.accept();

cobj.display();

}

}

Task009:

Wap to check the greater of 2 numbers

Hint:

Use if else

If ( num1 > num2){

sout(“num1 is greater”);

}

Else {

sout(“num2 is greater”);

}

**Code**

import java.util.Scanner;

public class Task009 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

// Input two numbers from the user

System.out.print("Enter first number (num1): ");

int num1 = sc.nextInt();

System.out.print("Enter second number (num2): ");

int num2 = sc.nextInt();

// Check which number is greater

if (num1 > num2) {

System.out.println("num1 is greater");

} else if (num2 > num1) {

System.out.println("num2 is greater");

} else {

System.out.println("Both numbers are equal");

}

sc.close();

}

}

task 010

Wap to check greater of 3 numbers

Hint 👍

Use elseif

**Code**

import java.util.Scanner;

public class Task010 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

// Input three numbers from the user

System.out.print("Enter first number (num1): ");

int num1 = sc.nextInt();

System.out.print("Enter second number (num2): ");

int num2 = sc.nextInt();

System.out.print("Enter third number (num3): ");

int num3 = sc.nextInt();

// Logic to find the greatest number

if (num1 > num2 && num1 > num3) {

System.out.println("num1 is greatest");

} else if (num2 > num1 && num2 > num3) {

System.out.println("num2 is greatest");

} else if (num3 > num1 && num3 > num2) {

System.out.println("num3 is greatest");

} else {

System.out.println("There is a tie between two or more numbers");

}

sc.close();

}

}

Task11:

Wap to check if week days

1 ===> sunday

2 ===> monday

So on

8 and above ===> invalid input

Hint : use Switch case

import java.util.Scanner;

public class Task011 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

// Ask user to enter a number

System.out.print("Enter a number (1 to 7): ");

int day = sc.nextInt();

// Use switch to map numbers to days

switch (day) {

case 1:

System.out.println("Sunday");

break;

case 2:

System.out.println("Monday");

break;

case 3:

System.out.println("Tuesday");

break;

case 4:

System.out.println("Wednesday");

break;

case 5:

System.out.println("Thursday");

break;

case 6:

System.out.println("Friday");

break;

case 7:

System.out.println("Saturday");

break;

default:

System.out.println("Invalid input");

}

sc.close();

}

}

Task 012

Wap to check loginid and password validation

Hint use while loop

Scanner sc = new Scanner(System.in);

String loginid = “Prasunamba”

String pwd = “12345867”

Int Count = 0;

While (loginid == “Prasunamba” && pwd == “12345867”){

sout(“ you have logged in for ”+ count++ +” times”);

sout(“enter ur login id and password”);

loginid = sc.NextLine();

pwd = sc.NextLine();

}

import java.util.Scanner;

public class LoginValidation {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

final String correctLoginId = "Pratheesh";

final String correctPwd = "112788416";

int count = 0;

String loginid = "";

String pwd = "";

while (true) {

System.out.print("Enter your login ID: ");

loginid = sc.nextLine();

System.out.print("Enter your password: ");

pwd = sc.nextLine();

if (loginid.equals(correctLoginId) && pwd.equals(correctPwd)) {

System.out.println("You have logged in for " + (++count) + " times");

} else {

System.out.println("Invalid login ID or password. Exiting...");

break;

}

}

sc.close();

}

}

Using while loop

import java.util.Scanner;

public class LoginWhileLoop {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

String loginid = "";

String pwd = "";

int count = 0;

while (true) {

System.out.print("Enter your login ID: ");

loginid = sc.nextLine();

System.out.print("Enter your password: ");

pwd = sc.nextLine();

if (loginid.equals("Pratheesh") && pwd.equals("12345867")) {

System.out.println("You have logged in for " + (++count) + " times");

} else {

System.out.println("Invalid login ID or password. Exiting...");

break;

}

}

sc.close();

}

}

Using do-while loop

import java.util.Scanner;

public class LoginDoWhileLoop {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

String loginid;

String pwd;

int count = 0;

do {

System.out.println("You have logged in for " + (++count) + " times");

System.out.print("Enter your login ID: ");

loginid = sc.nextLine();

System.out.print("Enter your password: ");

pwd = sc.nextLine();

} while (loginid.equals("Pratheesh") && pwd.equals("12345867"));

System.out.println("Invalid login ID or password. Exiting...");

sc.close();

}

}

Task 13:

Wap to display numbers from 10 to 1 .. skip 7 and 5.

for(int i= 10; i >0; i–){

If ( i == 5 || i == 7){

Continue;

sout(i);

}

**Code**

public class Main {

public static void main(String[] args) {

for (int i = 10; i > 0; i--) {

if (i == 5 || i == 7) {

continue;

}

System.out.println(i);

}

}

}

Task 014:

Arrays:

Try the below code and display the output…

Now play with it try to access arr of 5th index and see the output…and try to access arr of -1 index and see the output..

package Arrays;

public class Demo01 {

public static void main(String[] args) {

// TODO Auto-generated method stub

char[] arr = {'a','e','i','o','u'};

System.out.println(arr);

String[] names = {"Meena", "Tina", "Veena", "heena"};

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

names[1]= "Reena";

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

System.out.println(names.length);

System.out.println(names[4]);

//Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException

}

}

**Code**

package Arrays;

public class Demo01 {

public static void main(String[] args) {

char[] arr = {'a','e','i','o','u'};

System.out.println(arr); // Prints: aeiou

String[] names = {"Meena", "Tina", "Veena", "heena"};

System.out.println(names[0]); // Meena

names[1] = "Reena";

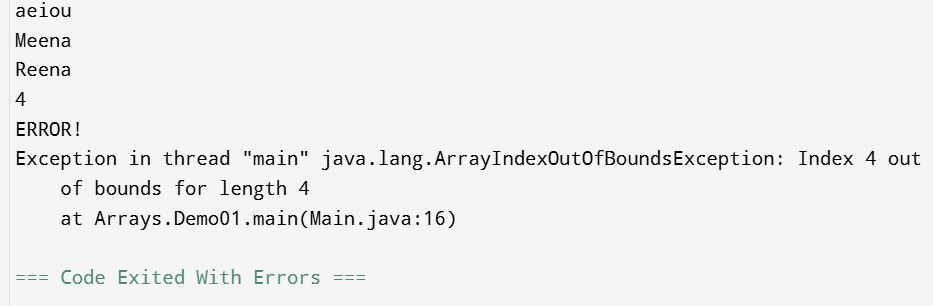
System.out.println(names[1]); // Reena

System.out.println(names.length); // 4

System.out.println(names[4]);

}

}



Task 015:

String – non primitive data gtype —> collection of characters or any value within “ ”

– immutable ⇒ cannot be changed

package StringHandling;

public class Demo01 {

public static void main(String[] args) {

String str1 = "Java Strings "; // String literal

String str2 = new String(str1); // Using new keyword (creates a new object)

String str3 = new String("are easy to learn ");

char ch[] = {'S', 't', 'r' ,'i', 'n', 'g'}; // Character array

String str4 = new String(ch); // Convert char array to string

System.out.println(str1 + "\n" + str2 + "\n" + str3 + "\n" + str4);

}

}

Task 016

Enums or Enumerations – part of collection framework

What is the output of the below code snippet

### **First Code Snippet**

enum color {

red, blue, green, yellow

}

public class Main {

public static void main(String[] args) {

color c1 = color.yellow;

System.out.println(c1);

}

}

### **Second Code Snippet**

enum Weekdays {

Sunday, Monday, Tuesday

}

public class Main {

public static void main(String[] args) {

Weekdays c1 = Weekdays.Tuesday;

System.out.println(c1);

}

}

Task 017:

Getter and setter

Create a program name Person.java

public class person {

public String name;

public void setName(String name) {

this.name = name;

}

public String getName() {

return name;

}

public static void main(String[] args) {

person s = new person();

s.setName("Siri");

System.out.println("Name: " + s.getName());

}

}

public class task018 {

public static void main(String[] args) {

person myObj = new person();

myObj.name = "Pratheesh";

System.out.println(myObj.name);

}

}

Task 018

Now create one more program named Task018.java

public class Main {

public static void main(String[] args) {

Person myObj = new Person();

myObj.setName("John");

System.out.println(myObj.getName());

}

}

public class person {

public String name;

public void setName(String name) {

this.name = name;

}

public String getName() {

return name;

}

public static void main(String[] args) {

person s = new person();

s.setName("Siri");

System.out.println("Name: " + s.getName());

}

}

public class task019 {

public static void main(String[] args) {

person myObj = new person();

myObj.setName("Pratheesh");

System.out.println(myObj.getName());

}

}

Task019.java

Enums – understand the code   
import java.util.HashMap;

import java.util.Map;

public class task016\_1 {

public static void main(String[] args) {

// Lookup examples

Element e1 = Element.valueOfLabel("Helium");

System.out.println("Found by label: " + e1);

Element e2 = Element.valueOfAtomicNumber(10);

System.out.println("Found by atomic number: " + e2);

Element e3 = Element.valueOfAtomicWeight(1.008f);

System.out.println("Found by atomic weight: " + e3);

}

}

enum Element {

H("Hydrogen", 1, 1.008f),

HE("Helium", 2, 4.0026f),

LI("Lithium", 3, 6.94f),

BE("Beryllium", 4, 9.0122f),

B("Boron", 5, 10.81f),

C("Carbon", 6, 12.011f),

N("Nitrogen", 7, 14.007f),

O("Oxygen", 8, 15.999f),

F("Fluorine", 9, 18.998f),

NE("Neon", 10, 20.180f);

public final String label;

public final int atomicNumber;

public final float atomicWeight;

private static final Map<String, Element> BY\_LABEL = new HashMap<>();

private static final Map<Integer, Element> BY\_ATOMIC\_NUMBER = new HashMap<>();

private static final Map<Float, Element> BY\_ATOMIC\_WEIGHT = new HashMap<>();

static {

for (Element e : values()) {

BY\_LABEL.put(e.label, e);

BY\_ATOMIC\_NUMBER.put(e.atomicNumber, e);

BY\_ATOMIC\_WEIGHT.put(e.atomicWeight, e);

}

}

Element(String label, int atomicNumber, float atomicWeight) {

this.label = label;

this.atomicNumber = atomicNumber;

this.atomicWeight = atomicWeight;

}

public static Element valueOfLabel(String label) {

return BY\_LABEL.get(label);

}

public static Element valueOfAtomicNumber(int number) {

return BY\_ATOMIC\_NUMBER.get(number);

}

public static Element valueOfAtomicWeight(float weight) {

return BY\_ATOMIC\_WEIGHT.get(weight);

}

}

Arrays

Task 020:

Create an array of your name

public class task020 {

public static void main(String[] args) {

// Initialize char array with name

char[] Name = {'P', 'r', 'a', 't', 'h', 'e', 'e', 's', 'h'};

// Print the array reference (not contents)

System.out.println(Name); // prints the letters as a string because it's char[]

// Length of the array

int n = Name.length;

System.out.println("There are " + n + " letters in my name");

// Print each letter with a for loop

System.out.print("Letters: ");

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

System.out.print(Name[i] + " ");

}

System.out.println();

// Shallow copy example (just copying reference)

char[] shallowCopy = Name;

shallowCopy[0] = 'X'; // Modify shallowCopy will affect original

System.out.print("After shallow copy modification, Name: ");

for (char c : Name) System.out.print(c + " ");

System.out.println();

// Deep copy example (new array with copied contents)

char[] deepCopy = new char[n];

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

deepCopy[i] = Name[i];

}

deepCopy[0] = 'P'; // revert first letter in deep copy

System.out.print("Deep copy array: ");

for (char c : deepCopy) System.out.print(c + " ");

System.out.println();

System.out.print("Original Name array after deep copy modification: ");

for (char c : Name) System.out.print(c + " ");

System.out.println();

}

}