 14/8/2022

## CLASS, ATTRIBUTE,OBJECT,METHOD

Main.java

public class Main {

public static void main(String[]args) {

Student ob=new Student();

ob.name="HISHAM";

ob.id="213-15-4270";

ob.age=22;

ob.display();

}

}

Student.java

public class Student {

String name,id;

int age;

void display() {

System.out.println(name);

System.out.println(id);

System.out.println(age);

}

}

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## ****CONSTRUCTOR OVERLOAD****

Main.java:-

public class Main {

public static void main(String[]args){

Teacher t1= new Teacher("HISHAM","CSE",22);

t1.display();

}

}

Teacher.java:-

public class Teacher {

String name,dept;

int age;

Teacher(String n,String d,int a){

name=n;

dept=d;

age=a;

}

void display() {

System.out.println("Name is:- "+name);

System.out.println("Depaartment:- "+dept);

System.out.println("Age is:- "+age);

}

}

Main.java:-

public class Main {

public static void main(String[]args){

Teacher t1= new Teacher();

Teacher t= new Teacher ("arh","cse");

t.display();

Teacher t2=new Teacher("ASKFJ","CSE",33);

t2.display();

}

}

Teacher.java:-

public class Teacher{

String name,dept;

int age;

Teacher(){

System.out.println("No info");

}

Teacher (String m, String i){

name=m;

dept=i;

}

Teacher(String n,String d,int a){

name=n;

dept=d;

age=a;

}

void display() {

System.out.println("Name is:- "+name);

System.out.println("Depaartment:- "+dept);

System.out.println("Age is:- "+age);

}

}

Main.java:-

public class Main {

public static void main(String[]args){

Teacher t1= new Teacher();

Teacher t2=new Teacher("ASKFJ","CSE",33);

t2.display();

}

}

Teacher.java:-

public class Teacher{

String name,dept;

int age;

Teacher(){

System.out.println("No info");

}

Teacher(String n,String d,int a){

name=n;

dept=d;

age=a;

}

void display() {

System.out.println("Name is:- "+name);

System.out.println("Depaartment:- "+dept);

System.out.println("Age is:- "+age);

}

}

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## ****RETURN VALUE OF METHOD****

Main.java

......................

public class Main

{

public static void main(String[] args) {

Test a=new Test();

int result=a.square1();

System.out.println(result);

Test.java

.................

public class Test{

int square1(){

return 3\*3;

}

}

Main.java

public class Main

{

public static void main(String[] args) {

Test a=new Test();

System.out.println(a.square1());

System.out.println(a.square2(5));

}

}

Test.java

public class Test{

int square1(){

return 3\*3;

}

int square2(int n){

return n+n;

}

}

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## ****STATIC****

public class Student

static String varsity\_name="DIU";

}

public class Test {

public static void main(String[]args) {

System.out.println("University name: "+Student.varsity\_name);

}

}

public class Student {

static int id;

static String name;

static void display() {

System.out.println("ID:"+id);

System.out.println("Name: "+name);

}

static {

id=123;

name="Hisham";

System.out.println("Hello World");

}

}

public class Test {

public static void main(String[]args) {

Student.display();

}

}

public class test {

public static void main(String[] args) {

Student ob=new Student();

ob.show(); //for non-static method object needs to be created first

Student.display(); //static metods can be directly called with class

}

}

class Student {

void show() {

System.out.println("It is a non-static method");

}

static void display() {

System.out.println("It is a static Method");

}

}

public class test {

public static void main(String[] args) {

Student ob=new Student();

ob.show();

Student.display();

}

}

class Student {

int a=5;

static int b=8;

void show() { //non-static methods can be used with both static and non-static stuffs

display();

System.out.println("Non-Static Method");

System.out.println(a);

System.out.println(b);

}

static void display() { //can not add anything non-staic i.e can't print a here.

System.out.println("Static Method");

System.out.println(b);

}

}

public class Test {

public static void main(String[]args) {

Student ob=new Student("Hisham","213-15-4270",21);

ob.show();

Student ob1=new Student("Arnob","214-15-4270",22);

ob1.show();

}

}

public class Student {

String name,id;

int age;

static String varsity\_name="DIU";

Student(String n,String i,int a){

name=n;

id=i;

age=a;

}

void show() {

System.out.println("Name:- "+name);

System.out.println("ID:- "+id);

System.out.println("Age:- "+age);

System.out.println("Varsity:- "+varsity\_name);

}

}

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## ****ARRAY , SCANNER****

import java.util.Scanner;

public class Test {

public static void main(String[]args)

{

Scanner input=new Scanner(System.in);

System.out.println("Enter the size of the array: ");

int size = input.nextInt();

int []arr=new int[size];

System.out.println("Enter the values of the array: ");

for(int i=0;i<size;i++)

{

arr[i]=input.nextInt();

}

for(int i=0;i<size;i++)

{

System.out.println("The value of the array ["+i+"]: "+arr[i]);

}

}

}

public class test {

public static void main(String[]args)

{

int []arr={10,20,30,40,50};

for (int i : arr) //for(i=0;i<arr.length;i++)

{

System.out.println("The value of array: " + i); //+arr[i]

}

}

}

import java.util.Scanner;

public class test {

public static void main(String[]args)

{

double d=100.04;

int i=(int)d; //needed only when going from bigger data type to smaller data type (otherwise it's called auto-conversion)

System.out.println("Double value "+d); //precedence:

System.out.println("Integer value "+i); //double > float > long > int > short > byte

}

}

public class Test {

public static void main(String[]args) {

System.out.println(Math.sqrt(16));

System.out.println(Math.abs(-40.2));

System.out.println(Math.pow(3,3));

System.out.println(Math.PI);

System.out.println(Math.min(4,2));

System.out.println(Math.max(4,2));

System.out.println(Math.floor(2.6));

System.out.println(Math.ceil(2.4));

System.out.println(Math.exp(1));

System.out.println(Math.round(4.2));

System.out.println(Math.random());

}

}

import java.util.Scanner;

public class Sum {

public static void main(String[]args) {

Scanner input=new Scanner(System.in);

System.out.println("Enter the first number:-");

int a=input.nextInt();

System.out.println("Enter the second number:-");

int b=input.nextInt();

System.out.println("The sum of two numbers:-"+(a+b));

}

}

import java.util.Scanner;

public class Sum {

public static void main(String[]args) {

Scanner input=new Scanner(System.in);

System.out.println("Enter the first number:-");

double a=input.nextDouble();

System.out.println("Enter the second number:-");

double b=input.nextDouble();

System.out.println("Enter the third number:-");

double c=input.nextDouble();

System.out.println("The product of three numbers:-"+(a\*b\*c));

}

}

import java.util.Scanner;

public class Test{

public static void main(String[]args) {

Scanner input=new Scanner(System.in);

System.out.println("Enter name: ");

String a= input.next();

System.out.println("Enter age: ");

int b= input.nextInt();

System.out.println("Enter cgpa: ");

double c=input.nextDouble();

System.out.println("Enter dept: ");

String d=input.next();

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

System.out.println("age= "+b);

System.out.println("cgpa= "+c);

System.out.println("dept= "+d);

}

}

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## ****Encapsulation****

public class test {

public static void main(String[]args){

person myObj=new person();

myObj.setInfo("Hisham",123);

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

System.out.println("Name: "+myObj.getId());

}

}

class person{

private String name;

int id;

public void setInfo(String n,int i){

name=n;

id=i;

}

public String getName(){

return name;

}

public int getId(){

return id;

}

}

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## ****Inheritance****

public class Employee {

float salary=400000;

}

class Programmer extends Employee{

float bonus=10000;

public static void main(String args[]) {

Programmer p=new Programmer();

System.out.println("Programmer salary is:"+p.salary);

System.out.println("bonus of Programmeris:"+p.bonus);

}

}

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## ****Inheritance****

public interface A {

public void M();

}

public interface B {

public void M();

}

public class C implements A,B{

public void M() {

System.out.println("okey");

}

}

public class test extends C{

public static void main(String[]args) {

C obj=new C();

obj.M();

}

}

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## ****Abstraction****

// 100% abstraction

public class car extends vehicle {

public void move(){

System.out.println("Car moves faster");

}

public static void main(String[]args){

car c1=new car();

c1.move();

}

}

abstract class vehicle{

public abstract void move();

}

public class car2 extends vehicle{

public void move(){

System.out.println("Car moves faster");

}

public static void main(String[]args){

car2 c1=new car2();

c1.move();

c1.carry();

}

}

abstract class vehicle{

public abstract void move();

public void carry(){

System.out.println("All vehicle carry loads");

}

}

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## ****Exception Handling****

package GGG;

public class PCA {

public static void main(String[]args) {

try {

int b=50/0;

}

catch(ArithmeticException e) {

System.out.println(e);

}

System.out.println("Hi");

}

}

package gggg;

public class PCA {

public static void main(String[]args) {

int x=10;

int y=0;

try {

int r=x/y;

System.out.println(r);

}

catch(NullPointerException r) {

System.out.println(r);

}

finally {

System.out.println("Hi");

}

System.out.println("Hello");

}

}

package gggg;

public class PCA {

static void vd(int age) {

if(age<18)

throw new ArithmeticException("not valid");

else

System.out.println("welcome to vote");

}

public static void main(String[]args) {

vd(13);

System.out.println("rest of the code");

}

}