**ASSIGNMENT 1**

**1)**

**import** java.util.Scanner;

**public** **class** hello {

**public** **static** **void** main(String args[])

{

**int** n, nu, num=0, rem;

Scanner scan = **new** Scanner(System.***in***);

System.***out***.print("Enter any Positive Number : ");

n = scan.nextInt();

nu = n;

**while**(nu != 0)

{

rem = nu%10;

num = num + rem\*rem\*rem;

nu = nu/10;

}

**if**(num == n)

{

System.***out***.print("Armstrong Number");

}

**else**

{

System.***out***.print("Not an Armstrong Number");

}

}

}

**2)**

**public** **class** hello

{

**public** **static** **void** main(String[] args)

{

**int** n, sum,rem;

**for**(**int** i = 100 ; i <= 999 ; i++)

{

n = i;

sum = 0;

**while**(n != 0)

{

rem = n % 10;

sum = sum + rem\*rem\*rem;

n = n / 10;

}

**if**(sum == i)

System.***out***.println(i);

}

}

}

**3)**

**import** java.util .\*;

**class** hello

{

**public** **static** **void** main (String argu[ ])

{

**double** pr, rate, t, sim,com;

Scanner sc=**new** Scanner (System. ***in***);

System.***out***.println("Enter the amount:");

pr=sc.nextDouble();

System. ***out***. println("Enter the No.of years:");

t=sc.nextDouble();

System. ***out***. println("Enter the Rate of interest");

rate=sc.nextDouble();

sim=(pr \* t \* rate)/100;

com=pr \* Math.*pow*(1.0+rate/100.0,t) - pr;

System.***out***.println("Simple Interest="+sim);

System.***out***. println("Compound Interest="+com);

}

}

**4)**

**import** java.util .\*;

**class** hello

{

**public** **static** **void** main (String argu[ ])

{

**int** a,b,c;

Scanner scan = **new** Scanner(System.***in***);

System.***out***.print("Enter your sub1 marks : ");

a = scan.nextInt();

System.***out***.print("Enter your sub2 marks : ");

b = scan.nextInt();

System.***out***.print("Enter your sub3 marks : ");

c = scan.nextInt();

**if**(a >=60 && b >=60 && c>=60)

System.***out***.println("passed");

**if**((a>=60 &&b>=60 && c<60)||(b>=60 && c>=60 && a<60)||(a>=60&&c>=60&& b<60))

System.***out***.println("promoted");

**if**((a<60 &&b<60 && c>=60)||(b<60 && c<60 && a>=60)||(a<60&&c<60&& b>=60)||(a<60&&b<60&&c<60))

System.***out***.println("Failed");

}}

**5**

**import** java.util .\*;

**class** hello

{

**public** **static** **void** main (String argu[ ])

{

**int** a,b,c;

Scanner scan = **new** Scanner(System.***in***);

System.***out***.print("Enter your CTC : ");

a = scan.nextInt();

**if**(a >=0 && a<=180000)

System.***out***.println("No tax payment");

**if**(a >180000 && a<=300000)

System.***out***.println("You have to pay 10% of your CTC");

**if**(a >300000 && a<=500000)

System.***out***.println("You have to pay 20% of your CTC");

**if**(a >500000 && a<=1000000)

System.***out***.println("You have to pay 30% of your CTC");

**if**(a>1000000)

System.***out***.println("value exceeds 10lakh");

}}

**6**

**import** java.util .\*;

**class** hello

{

**public** **static** **void** main (String argu[ ])

{

**int** a,b,i,j=3;

String u="bharath",p="qwerty",un,ps;

aa:

**for**(i=0;i<=2;i++)

{

Scanner scan = **new** Scanner(System.***in***);

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

un = scan.next();

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

ps = scan.next();

**if**(un.equals(u) && ps.equals(p))

{

System.***out***.println("welcome");

**break** aa;

}

**else**

System.***out***.println("Contact admin");

System.***out***.println(--j+" more trail");

}

}

}

**7)**

**import** java.util .\*;

**class** hello

{

**public** **static** **void** main (String argu[ ])

{

**int**[] num = {5,12,14,6,78,19,1,23,26,35,37,7,52,86,47};

**int** numo,j;

Scanner scan = **new** Scanner(System.***in***);

System.***out***.print("Enter the number : ");

numo = scan.nextInt();

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

**if**(numo == num[i]) {

System.***out***.println("Array contains the given element");

**break**;

}

**if**(i==14)

{

System.***out***.println("Array does not contains the given element");

}

}

}

}

**8)**

**class** hello

{

**public** **static** **void** main (String argu[ ])

{

**int**[] num = {5,12,14,6,78,19,1,23,26,35,37,7,52,86,47};

**int** temp;

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

{

**for**(**int** j=1+i;j<num.length;j++)

{

**if**(num[i]>num[j])

{

temp=num[i];

num[i]=num[j];

num[j]=temp;

}

}

}

System.***out***.println();

System.***out***.println("Elements of array sorted in ascending order: ");

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

System.***out***.print(num[n] + " ");

}

}

}

**9**

**import** java.util.Scanner;

**public** **class** hello

{

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

Scanner in = **new** Scanner(System.***in***);

System.***out***.print("Enter number of students: ");

**int** n = in.nextInt();

String name[] = **new** String[n];

**int** totalmarks[] = **new** **int**[n];

**double** averages[] = **new** **double**[n];

**int** grandTotal = 0;

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

**int** sub1,sub2,sub3,total;

**double** average;

in.nextLine();

System.***out***.print("Enter name of student " + (i+1) + ": ");

name[i] = in.nextLine();

System.***out***.print("Enter total marks of subject 1 " + (i+1) + ": ");

sub1 = in.nextInt();

System.***out***.print("Enter total marks of subject 2 " + (i+1) + ": ");

sub2 = in.nextInt();

System.***out***.print("Enter total marks of subject 3 " + (i+1) + ": ");

sub3 = in.nextInt();

total=sub1+sub2+sub3;

average=total/3;

totalmarks[i] = total;

averages[i] = average;

grandTotal += totalmarks[i];

}

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

System.***out***.print("The total marks for each student is " +totalmarks[i]+"\n");

}

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

System.***out***.print("The total marks for each student is " +averages[i]+"\n");

}

}

}

**ASSIGNMENT 2**

**1)**

**import** java.util .\*;

**class** hello

{

**public** **static** **void** main (String args[ ])

{

ABC obj1=ABC.*getInstance*();

//ABC obj2= new ABC();

}

}

**class** ABC{

**static** ABC *obj*=**new** ABC();

**private** ABC()

{

System.***out***.println("hi");

}

**public** **static** ABC getInstance()

{

System.***out***.println("hii");

**return** *obj*;

}

}

**2)**

**class** Employee

{

String name;

**int** salary;

Employee()

{

name = **null**;

salary = 0;

}

Employee (String name, **int** salary)

{

**this**.name = name;

**this**.salary = salary;

}

**int** getSalary()

{

**return** salary;

}

}

**class** Manager **extends** Employee

{

**int** inc;

Manager()

{

**super**();

inc = 0;

}

Manager(String n, **int** sal, **int** i)

{

**super**(n, sal);

inc = i;

}

**int** getSalary()

{

**return** (**super**.getSalary()+inc);

}

}

**class** Labour **extends** Employee {

**int** ot;

Labour()

{

**super**();

ot = 0;

}

Labour(String n, **int** sal, **int** j)

{

**super**(n, sal);

ot = j;

}

**int** getSalary()

{

**return** (**super**.getSalary()+ot);

}

}

**class** hello

{

**public** **static** **void** main(String[] args)

{

Manager m1 = **new** Manager("Bharath",20000,3000);

System.***out***.println("Salary of Manager= "+m1.getSalary());

Labour l1 = **new** Labour("Srinivas",15000,5000);

System.***out***.println("Salary of Labour= "+l1.getSalary());

}

}

**3)**

**package** bharath;

**public** **class** Main {

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

BankAccount cust1 = **new** SavingsAccount();

BankAccount cust2 = **new** CurrentAccount();

**int** total;

total=cust1.Money()+ cust2.Money();

System.***out***.println("Total money in the bank: " + total);

}

}

**package** bharath;

**public** **class** CurrentAccount **extends** BankAccount {

**int** cashCredit;

**int** Money(){

**int** savings=50000;

cashCredit=400000;

**return** savings+cashCredit;

}

}

**package** bharath;

**public** **class** SavingsAccount **extends** BankAccount {

**int** fd;

**int** Money(){

**int** saving=10000;

fd=2000000;

**return** fd+saving;

}

}

**package** bharath;

**public** **class** BankAccount {

**int** Money(){

**return** 0;

}

}

**5)**

**public** **abstract** **class** shape {

**public** **abstract** **void** draw ();

}

**public** **class** line **extends** shape{

**public** **void** draw() {

System.***out***.println("line is drawn");

}

}

**public** **class** rectangle **extends** shape{

**public** **void** draw() {

System.***out***.println("rectangle is drawn");

}

}

**public** **class** cube **extends** shape{

**public** **void** draw() {

System.***out***.println("cubes is drawn");

}

}

**public** **class** main {

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

line myline = **new** line();

rectangle myrectangle = **new** rectangle();

cube mycubes = **new** cube();

myline.draw();

myrectangle.draw();

mycubes.draw();

}

}

**package** bharath;

**public** **class** Main {

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

//here we get an error when we use persistence class directly since it is abstract

//we need to make an object of either filepersistence or db

Persistance obj1=**new** Persistance();

obj1.persist();

//Persistance pers;

//pers.persist();

}

}

**package** bharath;

**public** **class** FilePersistance **extends** Persistance{

@Override

**void** persist() {

System.***out***.println("File persistence");

}

}

**package** bharath;

**public** **class** DatabasePersistance **extends** Persistance{

@Override

**void** persist() {

System.***out***.println("Database persistence");

}

}

**package** bharath;

**abstract** **public** **class** Persistance {

**abstract** **void** persist();

}

**7)**

**package** bharath;

**import** java.util.Scanner;

**public** **class** Main {

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

String role,prod,prodowner;

**int** amt,items;

**int** candytotal=40,cookietotal=50,ictotal=60;

Double total;

**int** totalitems;

Scanner sc= **new** Scanner(System.***in***);

System.***out***.println("Are you customer or owner?");

role=sc.nextLine();

**switch** (role){

**case** "owner"->{

System.***out***.println("Add items to storage, select Cookie, Candy, or Ice Cream");

prodowner = sc.nextLine();

**switch** (prodowner) {

**case** "Candy" -> {

System.***out***.println("Enter amount of candies: ");

items = sc.nextInt();

totalitems=items+candytotal;

System.***out***.println("Total candies are: " + totalitems);

}

**case** "Cookie" -> {

System.***out***.println("Enter amount of cookies: ");

items = sc.nextInt();

totalitems=items+cookietotal;

System.***out***.println("Total cookies are: " + totalitems);

}

**case** "Ice Cream" -> {

System.***out***.println("Enter amount of ice creams: ");

items = sc.nextInt();

totalitems=items+ictotal;

System.***out***.println("Total icecreams are: " + totalitems);

}

**default** -> System.***out***.println("Invalid input enter Candy, Cookie, or Ice Cream");

}

}

**case** "customer"-> {

System.***out***.println("Enter product Candy, IceCream or Cookie");

prod = sc.nextLine();

**switch** (prod) {

**case** "Candy" -> {

DessertItem candy = **new** Candy();

System.***out***.println("Enter amount of candies: ");

amt = sc.nextInt();

total = (**double**) (candy.getCost() \* amt \* 60);

System.***out***.println("Total cost with inclusive tax in Indian Rupee " + total);

}

**case** "Cookie" -> {

DessertItem cookie = **new** Cookie();

System.***out***.println("Enter amount of cookies: ");

amt = sc.nextInt();

total = (**double**) (cookie.getCost() \* amt \* 70);

System.***out***.println("Total cost with inclusive tax in Indian Rupee " + total);

}

**case** "Ice Cream" -> {

DessertItem ic = **new** IceCream();

System.***out***.println("Enter amount of ice creams: ");

amt = sc.nextInt();

total = (**double**) (ic.getCost() \* amt);

System.***out***.println("Total cost with inclusive tax in Indian Rupee " + total);

}

**default** -> System.***out***.println("Invalid input enter Candy, Cookie, or Ice Cream");

}

}

**default**-> {

System.***out***.println("Error enter customer or owner");

}

}

}

}

**package** bharath;

**public** **class** Candy **extends** DessertItem{

@Override

**int** getCost() {

**return** 5;

}

}

**package** bharath;

**public** **class** Cookie **extends** DessertItem{

@Override

**int** getCost() {

**return** 3;

}

}

**package** bharath;

**abstract** **public** **class** DessertItem {

**abstract** **int** getCost();

}

**package** bharath;

**public** **class** IceCream **extends** DessertItem{

@Override

**int** getCost() {

**return** 30;

}

}