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**Assignments**

***Day 1*** :-

***Assignment :-***

***Que 1***. Accept 2 integer values from command line argument. Compute it's addition & average. (Hint : Integer.parseInt)

***Ans :-***

class AddAvg

{

public static void main(String[]args)

{

int num1,num2,num3,num4;

num1=Integer.parseInt(args[0]);

num2=Integer.parseInt(args[1]);

num3=num1+num2;

System.out.println("Addition is="+num3);

num4=num3/2;

System.out.println("Average is="+num4);

}

}

***Que 2***. Accept radius from command line argument. Compute area of circle & display result on console. . //take radius as double type (Hint : Double.parseDouble)

***Ans :-***

class Areaofcircle

{

public static void main(String[]args)

{

double result,r;

r=Double.parseDouble(args[0]);

result=(3.14\*r\*r);

System.out.println("Area of Circle is="+result);

}

}

***Que 3.*** Accept length & breadth from command line argument type. Compute area of rectangle & display result on console. //take length & breadth as double (Hint : Double.parseDouble)

***Ans :-***

class Areaofrect

{

public static void main(String[]args)

{

double len,bred,result;

len=Double.parseDouble(args[0]);

bred=Double.parseDouble(args[1]);

result=len\*bred;

System.out.println("Area of Rectangle is="+result);

}

}

***Day 2*** :-

***Assignment Set 1 :-***

***Que 1***. Finding area and perimeter of rectangle or circle.

***Ans :-***

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

**public** **class** AreaPerimeterOfRect {

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

{

**double** Area,Wid,Len,Perimeter;

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

System.***out***.println("Enter Width and Length");

Wid=sc.nextDouble();

Len=sc.nextDouble();

Area=Wid\*Len; // Area of Rectangle

Perimeter=2\*(Len+Wid); //Perimeter of Rectangle

System.***out***.println("Area of Rectangle is = "+Area);

System.***out***.println("Perimeter of Rectancle is= "+Perimeter);

sc.close();

}

}

***Output :-***

Enter Width and Length

33

44

Area of Rectangle is = 1452.0

Perimeter of Rectancle is= 154.0

***Que 2***. Check if the given number is even or odd.

***Ans :-***

**import** java.util.Scanner;

**public** **class** EvenOdd

{

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

{

**int** num;

System.***out***.println("Enter the Positive Number only");

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

num=sc.nextInt();

**if**(num%2==0)

System.***out***.println("Number is Even " +num);

**else**

System.***out***.println("Number is Odd "+num);

sc.close();

}

}

***Output :-***

Enter the Positive Number only

554

Number is Even 554

***Que 3***. Calculating total salary based on basic. If basic <=5000 da, ta and hra will be 10%,20% and 25% respectively otherwise da, ta and hra will be 15%,25% and 30% respectively.

***Ans :***-

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

**public** **class** Salary {

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

{

**double** bSal,totSal,da,ta,hra;

System.***out***.println("Enter BAsic Salary:- ");

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

bSal=sc.nextDouble();

**if**(bSal<5000)

{

da=bSal\*10/100;

ta=bSal\*20/100;

hra=bSal\*25/100;

totSal=bSal+da+ta+hra;

System.***out***.println("Total Salary is :- "+totSal);

}

**else**

{

da=bSal\*15/100;

ta=bSal\*25/100;

hra=bSal\*30/100;

totSal=bSal+da+ta+hra;

System.***out***.println("Total Salary is :- "+totSal);

}

sc.close();

}

}

***Output :***-

Enter BAsic Salary:-

30000

Total Salary is :- 51000.0

***Que 4***.Write a program to find minimum of three numbers using nested if-else. Also try same program using ternary operator also.

***Ans :***-

**import** java.util.Scanner;

**public** **class** Small\_ter

{

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

{

**int** num1,num2,num3,small;

System.***out***.println("Enter 3 number to compare for smallest one:- ");

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

num1=sc.nextInt();

num2=sc.nextInt();

num3=sc.nextInt();

small = num1 < num2 ? ( num1 < num3 ? num1 : num3) : (num2 < num3 ? num2 : num3) ;

System.***out***.println("Small Number is = "+small);

sc.close();

}

}

***Output :***-

Enter 3 number to compare for smallest one:-

4

6

3

Small Number is = 3

***Que 5***. Accept a number with 1 or 2 digit from user and display it in words.

***Ans :-***

**import** java.util.Scanner;

**public** **class** diplay\_one\_two {

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

{

**int** digit;

System.***out***.println("Enter Digit e.g. 1/2/3/4/5/6/ ");

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

digit=sc.nextInt();

**switch**(digit)

{

**case** 1: System.***out***.println("ONE");

**break**;

**case** 2: System.***out***.println("TWO");

**break**;

**case** 3: System.***out***.println("THREE");

**break**;

**case** 4: System.***out***.println("FOUR");

**break**;

**case** 5: System.***out***.println("FIVE");

**break**;

**case** 6: System.***out***.println("SIX");

**break**;

**default**:

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

}

sc.close();

}

}

***Output :-***

Enter Digit e.g. 1/2/3/4/5/6/

2

TWO

***Que 6***.Accept 3 subject marks from user and find percentage, and total with grade.

***Ans :-***

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

**public** **class** Per\_Tot\_Grad {

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

{

**int** s1,s2,s3;

**double** Total,Perct;

**char** Grade;

System.***out***.println("Enter 3 Subjects Marks ");

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

s1=sc.nextInt();

s2=sc.nextInt();

s3=sc.nextInt();

Total=s1+s2+s3;

Perct=(Total/300)\*100;

**if**(Perct>80)

Grade='A';

**else** **if**(Perct>60)

Grade='B';

**else** **if**(Perct>40)

Grade='C';

**else**

Grade='D';

System.***out***.println(" Total is = "+Total);

System.***out***.println(" Percentage is = "+Perct);

System.***out***.println(" Grade is = "+Grade);

sc.close();

}

}

***Output :-***

Enter 3 Subjects Marks

22

33

44

Total is = 99.0

Percentage is = 33.0

Grade is = D

***Que 7***.Accept 2 no. from user for division if second no. is zero then print an error message

***Ans :-***

**import** java.util.Scanner;

**public** **class** Division {

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

{

**float** num1,num2,division;

System.***out***.println("Enter 2 Numbers");

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

num1=sc.nextInt();

num2=sc.nextInt();

**if**(num2==0)

{

System.***out***.println(" --:Error:-- ");

}

**else** {

division=num1/num2;

System.***out***.println("Division is = "+division );}

sc.close();

}

}

***Output :-***

Enter 2 Numbers

4

0

--:Error:--

***Assignment Set 2 :-***

***Que 1***.Write a program to find factorial of a given number.

***Ans :-***

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

**public** **class** FactofNum {

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

{

**int** num,fact=1;

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

System.***out***.println("Enter Number for Factorial :- ");

num=sc.nextInt();

**while**(num!=0)

{

fact=num\*fact;

num--;

}

System.***out***.println("Factorial is :- "+fact);

sc.close();

}

}

***Output :-***

Enter Number for Factorial :-

6

Factorial is :- 720

***Que 2***.Write a program to find m to the power n

***Ans :-***

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

**public** **class** Power\_of {

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

{

**int** base = 0, power = 0;

System.***out***.println("Enter Base and Power :-");

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

base=sc.nextInt();

power=sc.nextInt();

**long** result = 1;

**while** (power != 0)

{

result \*= base;

--power;

}

System.***out***.println("Answer = " + result);

sc.close();

}

}

***Output :-***

Enter Base and Power :-

2

3

Answer = 8

***Que 3***.Check if number is a prime number or not.

***Ans :-***

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

**public** **class** Prime\_Num {

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

{

**int** num = 0;

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

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

num=sc.nextInt();

**boolean** flag = **false**;

**for**(**int** i = 2; i <= num/2; i++)

{

// condition for nonprime number

**if**(num % i == 0)

{

flag = **true**;

**break**;

}

}

**if** (!flag)

System.***out***.println(num + " is a Prime Number.");

**else**

System.***out***.println(num + " is Not a Prime Number.");

sc.close();

}

}

***Output :-***

1. Enter the Number :-

34

34 is Not a Prime Number.

1. Enter the Number :-

5

5 is a Prime Number.

***Que 4***. Sum of series :

1+2+3+….+n

***Ans :-***

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

**public** **class** Sum\_of\_Series

{

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

{

**int** num =0, sum = 0;

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

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

num=sc.nextInt();

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

{

sum += i; // sum = sum + i;

}

System.***out***.println("Sum = " + sum);

sc.close();

}

}

***Output :-***

Enter the Number :-

6

Sum = 21

***Que 5***.Check whether the number is palindrome or not?

***Ans :-***

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

**public** **class** Palindrome {

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

{

**int** n,r,sum=0,temp; //n is the number variable to be checked for palindrome

System.***out***.println("Enter number for Palindrome :-");

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

n=sc.nextInt();

temp=n;

**while**(n>0)

{

r=n%10; // taking last digit

sum=(sum\*10)+r;

n=n/10; //skipping last digit

}

**if**(temp==sum)

System.***out***.printf("Number is Palindrome :- %d = %d ", sum,temp );

**else**

System.***out***.println("Number is Not Palindrome ");

sc.close();

}

}

***Output :-***

Enter number for Palindrome :-

242

Number is Palindrome :- 242 = 242

***Que 6***.Write a program, which reads a number and find the sum of digits of the number.

***Ans :-***

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

**public** **class** Sum\_of\_digit {

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

{

**int** num, rem, sum = 0;

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

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

num = sc.nextInt();

**while**(num > 0)

{

rem = num % 10;

sum = sum + rem;

num = num / 10;

}

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

sc.close();

}

}

***Output :-***

Enter the number:555

Sum of Digits:15

***Que 7.***Use same code above and find the sum of product of digits of the number till result calculated is a single digit number.

***Ans :-***

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

**public** **class** Sum\_of\_Product {

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

{

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

**int** prod=1,prod1=1,r,num,num1;

System.***out***.println("Enter The 2 Numbers :-");

num=sc.nextInt();

num1=sc.nextInt();

**while**(num!=0)

{

r=num%10;

prod=prod\*r;

num=num/10;

}

**while**(num1!=0)

{

r=num1%10;

prod1=prod1\*r;

num1=num1/10;

}

System.***out***.println("Prod=" +prod+ " Prod1=" +prod1);

sc.close();

}

}

***Output :-***

Enter The 2 Numbers :-

22

33

Prod=4 Prod1=9

***Que 8***.Find reverse number of any digit input number from user.

***Ans :-***

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

**public** **class** Reserve\_no {

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

{

**int** n, reverse = 0;

System.***out***.println("Enter an integer to reverse");

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

n = sc.nextInt();

**while**(n != 0)

{

reverse = reverse \* 10;

reverse = reverse + n%10;

n = n/10;

}

System.***out***.println("Reverse of the number is " + reverse);

sc.close();

}

}

***Output :-***

Enter an integer to reverse

344

Reverse of the number is 443

***Que 9***.Check if a number is Armstrong number.

***Ans :-***

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

**public** **class** Armstrong\_no {

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

{

**int** num =0, number, temp, total = 0;

System.***out***.println("Enter The Number :- ");

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

num=sc.nextInt();

number = num;

**while** (number != 0)

{

temp = number % 10;

total = total + temp\*temp\*temp;

number /= 10;

}

**if**(total == num)

System.***out***.println(num + " is an Armstrong number");

**else**

System.***out***.println(num + " is not an Armstrong number");

sc.close();

}

}

***Output :-***

Enter The Number :-

23

23 is not an Armstrong number

***Que 10***.Write a program, which reads two numbers and find the sum of product of digits of the number.

***Ans :-***

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

**public** **class** Sum\_of\_Product {

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

{

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

**int** prod=1,prod1=1,r,num,num1;

System.***out***.println("Enter The 2 Numbers :-");

num=sc.nextInt();

num1=sc.nextInt();

**while**(num!=0)

{

r=num%10;

prod=prod\*r;

num=num/10;

}

**while**(num1!=0)

{

r=num1%10;

prod1=prod1\*r;

num1=num1/10;

}

System.***out***.println("Prod=" +prod+ " Prod1=" +prod1);

sc.close();

}

}

***Output :-***

Enter The 2 Numbers :-

22

33

Prod=4 Prod1=9

***Day 3*** :-

***Assignment Set 1 :-***

***Que 1***. Create a java application for the following. Create a Customer class , with data members (all private : tight encapsulation) name(String),email(String),age(int), acBalance(double). Add 2 methods to Customer Class as,

1.1 void setData() ... take user i/p using scanner & store details in customer

1.2 void display() ...show customer details on console

1.1 Create a TestCustomer class . Use scanner to accept user i/ps.

1.2 Create 2 customers customer1, customer2.

1.3 accept & display customer details.

***Ans :-***

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

**public** **class** Customer

{

**private** String name;

**private** String email;

**private** **int** age;

**private** **double** acBalance;

**void** setData()

{

System.***out***.println("Enter Name");

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

name=sc.next();

System.***out***.println("Enter email");

email=sc.next();

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

age=sc.nextInt();

System.***out***.println("Enter Account Balance");

acBalance=sc.nextDouble();

}

**void** display()

{

System.***out***.println("\nName:- "+name+ "\nEmail:- "+email+"\nAge:- "+age+ "\nAccount Balance:-"+acBalance+"\n");

}

};

//Main Tester

**public** **class** TestCustomer {

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

{

Customer c1;

c1=**new** Customer();

Customer c2;

c2=**new** Customer();

c1.setData();

c2.setData();

c1.display();

c2.display();

}

};

***Output :-***

Enter Name

Girish

Enter email

naranje.girish17@gmail.com

Enter age

25

Enter Account Balance

2044

Enter Name

Girishkumar

Enter email

naranje.girish@gmail.com

Enter age

26

Enter Account Balance

1100

Name:- Girish

Email:- naranje.girish17@gmail.com

Age:- 25

Account Balance:-2044.0

Name:- Girishkumar

Email:- naranje.girish@gmail.com

Age:- 26

Account Balance:-1100.0

***Que 2.*** Create a java application for the following. Create a Student class , with data members (all private : tight encapsulation) name(String),stream(String),age(int), degreePer(double). Add 2 methods to StudentClass as,

1.1 void setData() ... take user i/p using scanner & store details in student

1.2 void display() ...show student details on console

1.1 Create a TestStudent class . Use scanner to accept user i/ps.

1.2 Create 2 students student1, student2

1.3 accept & display customer details.

***Ans :-***

**package** Student;

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

**public** **class** Student

{

**private** String name;

**private** String stream;

**private** **int** age;

**private** **double** degreePer;

**void** setData()

{

System.***out***.println("Enter Student -:Name");

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

name=sc.next();

System.***out***.println("Enter Student -:Stream");

stream=sc.next();

System.***out***.println("Enter Student -:Age");

age=sc.nextInt();

System.***out***.println("Enter Student -:Degree Percent");

degreePer=sc.nextDouble();

}

**void** display()

{

System.***out***.println("1) Name= " +name+ "\n2) Stream= " +stream+ "\n3) Age= " +age+ "\n4) Degree Perctent= " +degreePer+ "\n");

}

}

//Main Tester

**package** Student;

**public** **class** TestStudent {

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

{

Student s1;

s1=**new** Student();

Student s2;

s2=**new** Student();

s1.setData();

s1.display();

s2.setData();

s2.display();

}

}

***Output :-***

Enter Student -:Name

Girish

Enter Student -:Stream

eDAC

Enter Student -:Age

25

Enter Student -:Degree Percent

64

1) Name= Girish

2) Stream= eDAC

3) Age= 25

4) Degree Perctent= 64.0

Enter Student -:Name

Girishkumar

Enter Student -:Stream

eDAC

Enter Student -:Age

26

Enter Student -:Degree Percent

70

1) Name= Girishkumar

2) Stream= eDAC

3) Age= 26

4) Degree Perctent= 70.0

***Assignment Set 2 :-***

***Que 1***. Display Stationary menu to user. Assign fixed prices to items. User will select items from menu along with the quantity. (eg 1. Pen 2. Pencil 3. PaperRim 4. NoteBook.......10 . Generate Bill ) When user enters 'Generate Bill' option, display total bill & exit. (Can use System.exit(0) to terminate java app or simply exit=true )

***Ans :***-

**package** Stationary;

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

**public** **class** Stationary

{

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

{

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

**boolean** f=**false**;

**int** Bill=0;

**int** quantity;

**do**

{

System.***out***.println("Select Stationary Item:");

System.***out***.println(" MENU:=> \t1. BLUE Pen 10$ \t"

+ "2. RED Pen 10$ \t"

+ "3. PaperRim 20$\t"

+ "4. NoteBook 60$\t"

+ "5. Pencil 5$"

+"\n6. BLACK Pen 10$ \t"

+ "7. Pouch 5$\t"

+ "8. Eraser 3$\t"

+ "9. Riffle 5$\n"

+ "10. Generate Bill \t"

+ "11. Exit \n"

+ "\nEnter What You Want:");

**int** choice=sc.nextInt();

**switch**(choice)

{

**case** 1 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=10\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 2 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=10\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 3 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=20\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 4 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=60\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 5 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=5\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 6 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=10\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 7 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=5\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 8 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=3\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 9 : System.***out***.println("Enter Quantity:- ");

quantity=sc.nextInt();

Bill=5\*quantity;

System.***out***.println("Blue Pen => "+Bill+"\n");

**break**;

**case** 10 : System.***out***.println("Your Bill :- "+Bill+"\n\n");

**break**;

**case** 11: System.***out***.println("\n Thank you");

f=**true**;

System.*exit*(0);

**default**:

System.***out***.println(" Enter Valid Choice");

}

}**while**(!f);

sc.close();

}

}

***Output :-***

Select Stationary Item:

MENU:=> 1. BLUE Pen 10$ 2. RED Pen 10$ 3. PaperRim 20$ 4. NoteBook 60$ 5. Pencil 5$

6. BLACK Pen 10$ 7. Pouch 5$ 8. Eraser 3$ 9. Riffle 5$

10. Generate Bill 11. Exit

Enter What You Want:

1

Enter Quantity:-

5

Blue Pen => 50

Select Stationary Item:

MENU:=> 1. BLUE Pen 10$ 2. RED Pen 10$ 3. PaperRim 20$ 4. NoteBook 60$ 5. Pencil 5$

6. BLACK Pen 10$ 7. Pouch 5$ 8. Eraser 3$ 9. Riffle 5$

10. Generate Bill 11. Exit

Enter What You Want:

10

Your Bill :- 50

Select Stationary Item:

MENU:=> 1. BLUE Pen 10$ 2. RED Pen 10$ 3. PaperRim 20$ 4. NoteBook 60$ 5. Pencil 5$

6. BLACK Pen 10$ 7. Pouch 5$ 8. Eraser 3$ 9. Riffle 5$

10. Generate Bill 11. Exit

Enter What You Want:

11

Thank you

***Que 2***. Use Scanner to accept 2 i/ps Check it's data type . If its integer , accept ints n compute it's average. Otherwise , print error message eg : Invalid 1st number or Invalid 2nd number (Hint : sc.hasNextInt() , sc.nextInt())

***Ans*** :-

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

**public** **class** Scanner\_for\_2\_int\_input {

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

{

System.***out***.println("Avg of Two Number =>");

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

//int a=sc.nextInt();

//int b=sc.nextInt();

System.***out***.println("Enter First Number:- ");

**if**(sc.hasNextInt())

{

**int** a=sc.nextInt();

System.***out***.println("Enter Second Number:- ");

**if**(sc.hasNextInt())

{

**int** b=sc.nextInt();

**int** total=a+b;

**float** avg=total/2f;

System.***out***.println("The Average of Two Numbers is => "+avg);

}

**else**

{

System.***out***.println("ERROR :- Second Number is Not Integer");

}

}

**else**

{

System.***out***.println("ERROR:- First Number is Not Integer");

}

sc.close();

}

}

***Output :-***

1. Avg of Two Number =>

Enter First Number:-

2

Enter Second Number:-

4

The Average of Two Numbers is => 3.0

1. Avg of Two Number =>

Enter First Number:-

2

Enter Second Number:-

2.0

ERROR :- Second Number is Not Integer

***Day 4*** :-

***Assignment Set 1 :-***

***Que 1.*** Construct a simple Java class: MyDate which has attributes - day, month and year.1.Create accessor and mutator methods.2.Create a constructor and overload it for zero arg & parameterised constructors.

In main method,

1. Create an object and initialize it through zero arg constr. Print the date.

2. Create an object and initialize using parameterized constructor . Print the date.

3. Create an object with zero arg constr. and initialize it using mutator methods and accesse it using accessor methods. Print the date.

***Ans :-***

**package** My\_Date;

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

**public** **class** My\_Date

{

**private** **int** date=00;

**private** String month="null";

**private** **int** year=0000;

**void** myDate()

{

**this**.date=01;

**this**.month="Jan";

**this**.year=2020;

}

**void** myDate(**int** date, String month ,**int** year)

{

**this**.date=date;

**this**.month=month;

**this**.year=year;

}

**void** setDate()

{

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

System.***out***.println("\n 1) Date 2) Month 3) Year pls Enter");

System.***out***.println("\nEnter 1) Date ");

**this**.date=sc.nextInt();

System.***out***.println("\nEnter 2) Month ");

**this**.month=sc.next();

System.***out***.println("\nEnter 3) Year ");

**this**.year=sc.nextInt();

//sc.close();

}

**void** getDate()

{

System.***out***.println("\nDate is ="+date+" "+month+" "+year);

}

}

//Main Tester

**package** My\_Date;

**public** **class** Test\_Date {

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

{

//My\_Date d3 = new My\_Date();

//d3.setDate();

//d3.getDate();

My\_Date d1=**new** My\_Date();

My\_Date d2 = **new** My\_Date();

d1.myDate();

d2.myDate();

d1.getDate();

d2.getDate();

d1.myDate(22, "july", 1995);

d2.myDate(21,"march",1994);

d1.getDate();

d2.getDate();

d1.setDate();

d2.setDate();

d1.getDate();

d2.getDate();

}

}

***Output :-***

Date is =1 Jan 2020

Date is =1 Jan 2020

Date is =22 july 1995

Date is =21 march 1994

1) Date 2) Month 3) Year pls Enter

Enter 1) Date

17

Enter 2) Month

Oct

Enter 3) Year

2020

1) Date 2) Month 3) Year pls Enter

Enter 1) Date

16

Enter 2) Month

Nov

Enter 3) Year

2021

Date is =17 Oct 2020

Date is =16 Nov 2021

***Assignment Set 2 :-***

***Que 2.*** Construct a simple Java class: Account which has attributes - no,acholdername,actype,balance;

1.Create accessor and mutator methods.

2.Create a constructor and overload it for zero arg & parameterised constructors.

3.Write a method calInterest in this class. signature for method, double calInterest(){...}

Note : if actype is saving interestrateis 7% else it is 6%.

In main method,

1. Create an object and initialize it through zero arg constr. Calculate interest .Print the Account Details with updated Balance.

2. Create an object and initialize using parameterized constructor .Calculate interest. Print the Account Details with Updated Balance.

***Ans :-***

**package** Account;

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

**public** **class** Account

{

//acno,acholdername,actype,balance

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

**private** **int** acno;

**private** String acholdername;

**private** String actype;

**private** **double** balance;

**private** **double** bal\_new;

**public** Account(**int** acno, String acholdername, String actype, **double** balance)

{

**this**.acno = acno;

**this**.acholdername = acholdername;

**this**.actype = actype;

**this**.balance = balance;

}

**public** Account()

{

acno = 0;

acholdername = "-";

actype = "-";

balance = 0;

}

/\*\*

\* **@return** the balance

\*/

**public** **double** getBalance()

{

System.***out***.println("balance :"+balance);//if want to return balance then comment this whole line

**return** balance;

}

/\*\*

\* **@param** balance the balance to set

\*/

**public** **void** setBalance(**double** balance)

{

**this**.balance = balance;

}

**public** **void** setAccount() // set parameters for object

{

System.***out***.println("\nEnter A/c no := ");

**this**.acno = sc.nextInt();

System.***out***.println("\nEnter Name := ");

**this**.acholdername = sc.next();

System.***out***.println("\nEnter a/c type := ");

**this**.actype = sc.next();

System.***out***.println("\nEnter Balance := ");

**this**.balance = sc.nextDouble();

}

**public** **double** calInterest() //updates main balance

{

**if**(actype.equals("saving"))

bal\_new = **this**.balance + (**this**.balance \* 0.07);

**else**

bal\_new = **this**.balance + (**this**.balance \* 0.06);

**return** bal\_new;

}

**public** **void** printDetails() //class-method to print parameters

{

System.***out***.println("A/c Details :\nA/c no: "+**this**.acno+",Name: "

+**this**.acholdername+",Type: "+**this**.actype+",Balance: "+**this**.balance);

}

}

//Main Tester

**package** Account;

**public** **class** TestAccount {

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

{

**double** new\_balance;

Account a1, a2;

a1 = **new** Account(); //calls default constructor

a2 = **new** Account(2509,"nitin","current",2000.0); //calls parameterized constructor

a1.setBalance(1000); //getter method for balance

a1.getBalance(); //setter method for balance

a1.printDetails();

new\_balance = a1.calInterest(); //gives account balance after update

System.***out***.println("Updated balance :"+new\_balance);

a2.printDetails();

new\_balance = a2.calInterest();

System.***out***.println("Updated balance :"+new\_balance);

}

}

***Output :-***

balance :1000.0

A/c Details :

A/c no: 0,Name: -,Type: -,Balance: 1000.0

Updated balance :1060.0

A/c Details :

A/c no: 2509,Name: Rambo,Type: Saving,Balance: 2000.0

Updated balance :2120.0

***Day 5*** :-

***Assignment Set 1 :-***

***Que 1***. Create a class Shape with data members dim1,dim2. Write getters and setters for all the data members. Create Default and Parameterized constructors. Also add the showDetails method to get details of any shape. Add method for calArea & calPerimeter. Implement constructor chaining.

In main Tester,

--Create shapes objects like square,rectangle...

--Initialise objects created with user input through constructors...

--Print shape details also.

***Ans :-***

**package** box.first;

**public** **class** Box

{

**double** length,height,width;

String color;

Box() // default c

{

length=5.0;

height=5.0;

width=5.0;

color="Black";

}

Box(**double** length,**double** height,**double** width, String color) // parameterised c

{

**this**.length=length;

**this**.height=height;

**this**.width=width;

**this**.color=color;

}

Box(**double** dim,String color) // chaining chaining

{

**this**(dim,dim,dim ,color);

}

**public** String display() //display method

{

**return** ("1)length = "+length+ "\t2)Height = " +height+ "\t3)Width = "+width+ "\t4)Color= "+color);

}

// setter Getter

**public** **double** getLength()

{

**return** length;

}

**public** **void** setLength(**double** length)

{

**this**.length = length;

}

**public** **double** getHeight()

{

**return** height;

}

**public** **void** setHeight(**double** height)

{

**this**.height = height;

}

**public** **double** getWidth()

{

**return** width;

}

**public** **void** setWidth(**double** width)

{

**this**.width = width;

}

**public** String getColor()

{

**return** color;

}

**public** **void** setColor(String color)

{

**this**.color = color;

}

}

//main Tester

**package** box.first;

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

**public** **class** TestBox {

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

{

// Scanner Open

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

**double** l;

**double** h;

**double** w;

String c;

Box b1; // for default constructor

Box b2; // for parameter constr call

Box b3; // for Chaining Constr call

Box b4; // for user input by setter getter

Box b5; // for user input by using method

// def const call

b1=**new** Box();

System.***out***.println("Default constr:-");

System.***out***.println(b1.display()+"\n");

// paramt constr call

b2=**new** Box(1.1, 2.2, 3.3, "Blue");

System.***out***.println("Paramterise constr;-");

System.***out***.println(b2.display()+"\n");

// Chaining Constr call

b3=**new** Box(6.0, "Yello");

System.***out***.println("Chaining constr:-");

System.***out***.println(b3.display()+"\n");

// user input by method

b5=**new** Box();

{

System.***out***.println("Enter Lenght:");

b5.length=sc.nextDouble();

System.***out***.println("Enter Height:");

b5.height=sc.nextDouble();

System.***out***.println("Enter Width:");

b5.width=sc.nextDouble();

System.***out***.println("Enter Color:");

b5.color=sc.next();

}

System.***out***.println(b5.display()+"\n");

// getter setter user input

b4=**new** Box();

System.***out***.println("Enter box details:");

l=sc.nextDouble();

h=sc.nextDouble();

w=sc.nextDouble();

c=sc.next();

b4.setLength(l);

b4.setHeight(h);

b4.setWidth(w);

b4.setColor(c);

System.***out***.println(b4.getLength());

System.***out***.println(b4.getHeight());

System.***out***.println(b4.getWidth());

System.***out***.println(b4.getColor());

// Scanner close

sc.close();

}

}

***Output :-***

Default constr:-

1)length = 5.0 2)Height = 5.0 3)Width = 5.0 4)Color= Black

Paramterise constr;-

1)length = 1.1 2)Height = 2.2 3)Width = 3.3 4)Color= Blue

Chaining constr:-

1)length = 6.0 2)Height = 6.0 3)Width = 6.0 4)Color= Yello

Enter Lenght:

3

Enter Height:

4

Enter Width:

2

Enter Color:

blue

1)length = 3.0 2)Height = 4.0 3)Width = 2.0 4)Color= blue

Enter box details:

33

22

5

Red

33.0

22.0

5.0

Red

***Que 2***. Create a class Person with data members as name, age, city. Write getters and setters for all the data members. Create Default and Parameterized constructors. Also add the showDetails method to get details of any person.

***Ans*** :-

**package** person.third;

**public** **class** Person

{

String name,city;

**int** age;

//Default constr

Person()

{

name="luyi";

age=23;

city="HongKong";

}

//Parameterized constr

Person(String name,**int** age,String city)

{

**this**.name=name;

**this**.age=age;

**this**.city=city;

}

//Show Details

String showDetails()

{

**return** ("Name is "+name+ "\nAge is "+age+ "\nCity is "+city+ "\n");

}

// Getter Setter

**public** String getName() {

**return** name;

}

**public** **void** setName(String name) {

**this**.name = name;

}

**public** **int** getAge() {

**return** age;

}

**public** **void** setAge(**int** age) {

**this**.age = age;

}

**public** String getCity() {

**return** city;

}

**public** **void** setCity(String city) {

**this**.city = city;

}

}

//Main Tester

**package** person.third;

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

**public** **class** TestPerson

{

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

{

String n;

**int** a;

String c;

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

// Default

Person p1=**new** Person();

System.***out***.println(p1.showDetails());

//Parameterized

Person p2=**new** Person("john", 25, "London");

System.***out***.println(p2.showDetails());

//User input

Person p3=**new** Person();

System.***out***.println("Enter Name :-");

n=sc.next();

System.***out***.println("Enter Age :-");

a=sc.nextInt();

System.***out***.println("Enter City :-");

c=sc.next();

//.out.println(p3.showDetails()+"\n");

// Setter Getter

p3.setName(n);

p3.setAge(a);

p3.setCity(c);

System.***out***.println(p3.getName());

System.***out***.println(p3.getAge());

System.***out***.println(p3.getCity());

Person p4=**new** Person();

System.***out***.println("Enter details Below :");

System.***out***.println("Enter Name:");

p4.name=sc.next();

System.***out***.println("Enter Age:");

p4.age=sc.nextInt();

System.***out***.println("Enter City:");

p4.city=sc.next();

System.***out***.println(p4.showDetails());

sc.close();

}

}

***Output :-***

Name is luyi

Age is 23

City is HongKong

Name is john

Age is 25

City is London

Enter Name :-

Girish

Enter Age :-

25

Enter City :-

Nagpur

Girish

25

Nagpur

Enter details Below :

Enter Name:

Girishkumar

Enter Age:

24

Enter City:

Chandrapur

Name is Girishkumar

Age is 24

City is Chandrapur

***Assignment Set 2 :-***

***Que 1***. Create a class that captures planets. Each planet has a name, a distance from the sun, and its ravity relative to Earth’s gravity. For distance and gravity, use the type double which captures real numbers. Make objects for Earth and your favorite non-earth planet.

Write getters and setters for all the data members.

Create Default and Parameterized constructors.

Also add the showDetails method to get details of any planet.

Add method for calDistance between two planets.

Implement constructor chaining.

In main Tester,

--Create objects like earth ,mars etc....

--Initialise objects created with user input through constructors...

--- calculate distance between any set of planets .

--Print planets details also.

***Ans :-***

**package** planet.fourth;

**import** java.util.Scanner;

**public** **class** Planet

{

// Data

String name;

**double** distance,gravity,distance1,distance2;

//Default Constr

Planet()

{

name="default\_planets";

distance=0.00;

gravity=0.00;

}

//Parameterized Constr

Planet(String name,**double** distance ,**double** gravity)

{

**this**.name=name;

**this**.distance=distance;

**this**.gravity=gravity;

}

// Constructor Chaining

Planet(String name,**double** distance)

{

**this**(name,distance,distance);

}

//Showing details

**void** showDetails()

{

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

System.***out***.println("\nEnter the Palent Details");

name=s.next();

distance=s.nextDouble();

gravity=s.nextDouble();

}

// Distance Calculation

**void** calDistance()

{

System.***out***.println("\nEnter the Distance of Earth and Other Planet ");

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

distance1=s.nextDouble();

distance2=s.nextDouble();

System.***out***.println("\nDistance Between Both Palents From Sun="+(distance1-distance2));

}

// Distance display

**double** caldis(**double** dis)

{

**return** **this**.distance-dis;

}

//Display result

**void** display()

{

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

System.***out***.println("\nDetails of Planets \n1.Name="+name+"\n2.Distance="+distance+"\n3.Gravity"+gravity);

}

//Getter Setter

**public** String getName()

{

**return** name;

}

**public** **void** setName(String name)

{

**this**.name = name;

}

**public** **double** getDistance()

{

**return** distance;

}

**public** **void** setDistance(**double** distance)

{

**this**.distance = distance;

}

**public** **double** getGravity()

{

**return** gravity;

}

**public** **void** setGravity(**double** gravity)

{

**this**.gravity = gravity;

}

}

//main Tester

**package** planet.fourth;

**import** java.util.Scanner;

**public** **class** TestPlanet

{

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

{

**boolean** flag=**false**;

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

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

Planet []p=**new** Planet[s.nextInt()];;

**do**

{

System.***out***.println("\nEnter the choice");

System.***out***.println("1.Create array\t2.Input Data\t3.CalDistance\t4.Display Gravity >9 \t5.Display all planets \t6.Exit");

**int** choice =s.nextInt();

**switch**(choice)

{

**case** 1:

System.***out***.println("\n(Its already done u prosede from case 2 :-)");

**break**;

**case** 2:

System.***out***.println("\nEnter the data for planets Name, Distance, Gravity");

**for**(**int** i=0;i<=p.length-1;i++)

{

p[i]=**new** Planet(s.next(),s.nextDouble(),s.nextDouble());

System.***out***.println("Enter the data for Planets Name, Distance, Gravity ");

}

**break**;

**case** 3:

**double** dis=p[1].caldis(p[0].distance);

System.***out***.println("\nThe distance between"+p[1]+"and"+p[0]+"="+dis);

**break**;

**case** 5 :

**for**(**int** i=0;i<=p.length-1;i++)

{

p[i].display();

}

**break**;

**case** 4 :

**for**(**int** i=0;i<=p.length-1;i++)

{

**if**(p[i].gravity>9.0)

{

System.***out***.println("\nPlanet have lesee than 9.0 gravity"+p[i].name);

}

}

**break**;

**case** 6 :

flag=**true**;

System.*exit*(0);

**break**;

**default** :

System.***out***.println("Enter the valid case");

}

}**while**(!flag);

s.close();

}

}

***Output :-***

Enter the size of array

2

Enter the choice

1.Create array 2.Input Data 3.CalDistance 4.Display Gravity >9 5.Display all planets 6.Exit

2

Enter the data for planets Name, Distance, Gravity

earth

22

50

Enter the data for Planets Name, Distance, Gravity

mars

66

20

Enter the data for Planets Name, Distance, Gravity

Enter the choice

1.Create array 2.Input Data 3.CalDistance 4.Display Gravity >9 5.Display all planets 6.Exit

3

The distance betweenplanet.fourth.Planet@55f96302andplanet.fourth.Planet@3d4eac69=44.0

Enter the choice

1.Create array 2.Input Data 3.CalDistance 4.Display Gravity >9 5.Display all planets 6.Exit

4

Planet have lesee than 9.0 gravityearth

Planet have lesee than 9.0 gravitymars

Enter the choice

1.Create array 2.Input Data 3.CalDistance 4.Display Gravity >9 5.Display all planets 6.Exit

5

--------------------------------------------------

Details of Planets

1.Name=earth

2.Distance=22.0

3.Gravity50.0

--------------------------------------------------

Details of Planets

1.Name=mars

2.Distance=66.0

3.Gravity20.0

Enter the choice

1.Create array 2.Input Data 3.CalDistance 4.Display Gravity >9 5.Display all planets 6.Exit

6

***Day 6*** :-

***Assignment Set 1 :-***

***Que 1.*** Accept no of values / size from User(using scanner) to store double type data. Create suitable array & display it using for-loop, to confirm default values. Accept actual data from User(scanner) & store it in the array. Display array data using for loop.

***Ans :-***

**package** array.primitive;

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

**public** **class** ArrayP {

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

{

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

System.***out***.println("Enter The Size of Array :- ");

**double** arr[]=**new** **double**[sc.nextInt()];

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

{

System.***out***.println("Default Values :- "+arr[i]);

}

System.***out***.println("\nEnter you Data :- ");

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

{

arr[i]=sc.nextDouble();

}

**for**(**double** a : arr)

{

System.***out***.println("User Values is :- " + a);

}

sc.close();

}

}

***Output :-***

Enter The Size of Array :-

3

Default Values :- 0.0

Default Values :- 0.0

Default Values :- 0.0

Enter you Data :-

3.5

4.9

5.0

User Values is :- 3.5

User Values is :- 4.9

User Values is :- 5.0

***Que 2***. Accept no of values / size from User(using scanner) to store int type data. Create suitable array. Accept actual data from User(scanner) & store it in the array. Display array data using for loop. Input a number from user to search in given array & display result .

--if found its location'

--else not found.

***Ans :-***

**package** array.primitive;

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

**public** **class** ArraySearchNo {

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

{

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

System.***out***.println("Enter the size of an array :=> ");

**double** arr[]=**new** **double**[sc.nextInt()];

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

{

System.***out***.println("\nEnter data for "+(i+1));

arr[i]=sc.nextDouble();

}

**for**(**double** val:arr)

{

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

}

System.***out***.println("\nEnter the search value");

**double** search=sc.nextInt();

**boolean** flag=**false**;

**for**(**int** j=0;j<arr.length;j++)

{

**if**(arr[j]==search)

{

System.***out***.println(search+" is present at location in array "+(j+1));

flag=**true**;

**break**;

}

}

**if**(flag==**false**)

{

System.***out***.println(search+" doesn't exist in array.");

}

sc.close();

}

}

***Output :-***

Enter the size of an array :=>

4

Enter data for 1

2

Enter data for 2

4

Enter data for 3

3

Enter data for 4

2

2.0

4.0

3.0

2.0

Enter the search value

2

2.0 is present at location in array 1

***Assignment Set 2 :-***

***Que 1***. copy Planet class you created for Day 5 assignments. If not first create it.

1.1 Now create array of objects type of Planets to store details of all planets.

1.2 Input all data from User(use Scanner).

1.3 Also calsulate distance between any two planets that user input .

1.4 Display all Planets having gravity >9.0 .

1.5 Display all planets details using for-each loop.

***Ans :-***

**package** com.planets.details;

**public** **class** Planet

{

**private** String name;

**private** **double** distanceFromSun, relativeGravity;

Planet()

{

**this**("",0,0);

}

Planet(String name, **double** distanceFromSun, **double** relativeGravity)

{

**this**.name = name;

**this**.distanceFromSun = distanceFromSun;

**this**.relativeGravity = relativeGravity;

}

**public** String getName() {

**return** name;

}

**public** **void** setName(String name) {

**this**.name = name;

}

**public** **double** getDistanceFromSun() {

**return** distanceFromSun;

}

**public** **void** setDistanceFromSun(**double** distanceFromSun) {

**this**.distanceFromSun = distanceFromSun;

}

**public** **double** getRelativeGravity() {

**return** relativeGravity;

}

**public** **void** setRelativeGravity(**double** relativeGravity) {

**this**.relativeGravity = relativeGravity;

}

**public** String showDetails()

{

String details;

details = "The planet "+getName()+" has relative gravity "+getRelativeGravity()+" and it's distance from the sun is "+getDistanceFromSun();

**return** details;

}

**public** **double** calDistance(**double** distance)

{

**double** distBetweenPlanets = getDistanceFromSun() - distance;

**if**(distBetweenPlanets>0)

{

**return** distBetweenPlanets;

}

**else** **return**(distBetweenPlanets \* (-1));

}

}

//Main Tester

**package** com.planets.details;

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

**public** **class** TestPlanet

{

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

{

String planet1, planet2;

**int** loc1=-1, loc2=-1, choice = 0;

**boolean** flag = **false**;

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

System.***out***.println("Enter the number of planets whose details are to be entered");

Planet planet[] = **new** Planet[input.nextInt()];

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

{

System.***out***.println("Enter the name of the planet, it's distance from the sun and relative gravity respectively");

planet[i] = **new** Planet(input.next(), input.nextDouble(),input.nextDouble());

}

**do**

{

System.***out***.println("Enter your choice: 1 For Calculate distance between planets, 2 For displaying all the planets having relative gravity greater than 9, 3 For Printing all the details of the planets and 0 to exit");

choice = input.nextInt();

**switch**(choice)

{

**case** 0: **break**;

**case** 1: System.***out***.println("Enter the planets between whose distance is to be calculated:");

planet1 = input.next();

planet2 = input.next();

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

{

**if**(((planet[i].getName()).equals(planet1)))

{

loc1=i;

}

**if**(((planet[i].getName()).equals(planet2)))

{

loc2=i;

}

}

**if**(loc1==-1)

System.***out***.println("Planet "+planet1+" is not found the array");

**else** **if**(loc2==-1)

System.***out***.println("Planet "+planet2+" is not found the array");

**else**

System.***out***.println(planet[loc1].calDistance(planet[loc2].getDistanceFromSun()));

**break**;

**case** 2: **for**(**int** i=0;i<planet.length;i++)

{

**if**(planet[i].getRelativeGravity()>9)

{

System.***out***.println("The planets having relative gravity greater than 9 are: "+(planet[i].getName()));

flag = **true**;

}

}

**if**(flag==**false**)

System.***out***.println("No planet has/have relative gravity greater than 9");

**break**;

**case** 3: System.***out***.println("The planet details are: ");

**for**(Planet details : planet)

{

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

}

**break**;

**default**: System.***out***.println("Invalid choice");

}

}**while**(choice!=0);

input.close();

}

}

***Output:-***

Enter the number of planets whose details are to be entered

2

Enter the name of the planet, it's distance from the sun and relative gravity respectively

earth

33

50

Enter the name of the planet, it's distance from the sun and relative gravity respectively

mars

330

20

Enter your choice: 1 For Calculate distance between planets, 2 For displaying all the planets having relative gravity greater than 9, 3 For Printing all the details of the planets and 0 to exit

1

Enter the planets between whose distance is to be calculated:

2

3

Planet 2 is not found the array

Enter your choice: 1 For Calculate distance between planets, 2 For displaying all the planets having relative gravity greater than 9, 3 For Printing all the details of the planets and 0 to exit

2

The planets having relative gravity greater than 9 are: earth

The planets having relative gravity greater than 9 are: mars

Enter your choice: 1 For Calculate distance between planets, 2 For displaying all the planets having relative gravity greater than 9, 3 For Printing all the details of the planets and 0 to exit

3

The planet details are:

The planet earth has relative gravity 50.0 and it's distance from the sun is 33.0

The planet mars has relative gravity 20.0 and it's distance from the sun is 330.0

Enter your choice: 1 For Calculate distance between planets, 2 For displaying all the planets having relative gravity greater than 9, 3 For Printing all the details of the planets and 0 to exit

0

***Day 7*** :-

***Assignment Set 1 :-***

***Que 1***. Calculate sum & average of numbers of Matrix.[ using 2DArray]

***Ans :-***

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

**public** **class** SumAndAvg

{

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

{

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

System.***out***.println("Enter Number Row :- ");

**int** row=sc.nextInt();

System.***out***.println("\tEnter Number Column :- ");

**int** col=sc.nextInt();

**int** arr[][] = **new** **int**[row][col];

**int** count=0;

**double** sum=0;

**double** avg=0;

**for**(**int** i = 0; i < row; i++)

{

System.***out***.println("\tEnter Column values:- ");

**for**(**int** j = 0; j < arr[0].length; j++)

{

arr[i][j]=sc.nextInt();

}

}

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

{

**for**(**int** j = 0; j < arr[0].length; j++)

{

sum = sum+arr[i][j];

count++;

}

}

System.***out***.println("Sum = " + sum);

avg = sum/count;

System.***out***.println("Average = " + avg);

sc.close();

}

}

***Output :-***

Enter Number Row :-

3

Enter Number Column :-

3

Enter Column values:-

1

2

3

Enter Column values:-

4

5

6

Enter Column values:-

7

8

9

Sum = 45.0

Average = 5.0

***Que 2***. Reverse an array[1D] physical or actual elements to reverse not just printing

***Ans :-***

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

**public** **class** ReverseArray

{

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

{

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

System.***out***.println("Enter Size of Array :- ");

**int** size=sc.nextInt();

**int** arr[]=**new** **int**[size];

//Taking input

System.***out***.println("Enter Values of Array :- ");

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

{

System.***out***.print("\tEnter Values :- ");

arr[i]=sc.nextInt();

}

//Printing

System.***out***.print("Entered Array are :- ");

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

{

System.***out***.print("\t"+arr[i]);

}

//Swapping

**for**(**int** i=0,j=arr.length-1;i<=j;i++,j--)

{

**int** temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

//printing

System.***out***.print("\nReverse Array are :- ");

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

{

System.***out***.print("\t"+arr[i]);

}

sc.close();

}

}

***Output :-***

Enter Size of Array :-

5

Enter Values of Array :-

Enter Values :- 1

Enter Values :- 2

Enter Values :- 3

Enter Values :- 4

Enter Values :- 5

Entered Array are :- 1 2 3 4 5

Reverse Array are :- 5 4 3 2 1

***Que 3***. Sort an array in ascending order.[1D]

***Ans :-***

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

**public** **class** AssendingArray

{

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

{

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

System.***out***.print("Enter Size of Array :");

**int** size=sc.nextInt();

**int** arr[]=**new** **int**[size];

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

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

{

System.***out***.print("\tEnter Values :- ");

arr[i] = sc.nextInt();

}

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

{

**for** (**int** j = i + 1; j <size; j++)

{

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

{

**int** temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

}

System.***out***.print("Ascending Order:");

**for** (**int** i = 0; i < size - 1; i++)

{

System.***out***.print("\t" +arr[i]);

}

System.***out***.print("\t" +arr[size -1]);

sc.close();

}

}

***Output :-***

Enter Size of Array :5

Enter all the elements:

Enter Values :- 5

Enter Values :- 75

Enter Values :- 44

Enter Values :- 3

Enter Values :- 2

Ascending Order: 2 3 5 44 75

***Que 4***. Add two Matrix using Multi-dimensional Arrays

***Ans :-***

**public** **class** Add2Matrix

{

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

{

**int** rows=2,cols=4;

**int**[][] matrixA = { {1, 1, 1, 1}, {2, 2, 2, 2} };

**int**[][] matrixB = { {0, 1, 2, 3}, {3, 4, 5, 6} };

**int**[][] sum = **new** **int**[rows][cols];

**for**(**int** i = 0; i < rows; i++)

{

**for** (**int** j = 0; j < cols; j++)

{

sum[i][j] = matrixA[i][j] + matrixB[i][j];

}

}

System.***out***.println("Sum of the given Matrices are: ");

**for**(**int** i = 0; i < rows; i++)

{

**for** (**int** j = 0; j < cols; j++)

{

System.***out***.print(sum[i][j] + " ");

}

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

}

}

}

***Output :-***

Sum of the given Matrices are:

1 2 3 4

5 6 7 8

***Que 5***. Multiply two Matrix using Multi-dimensional Arrays

***Ans :-***

**public** **class** Multiply2Matrix

{

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

{

**int** rows=2,cols=4;

**int**[][] matrixA = { {1, 1, 1, 1}, {2, 2, 2, 2} };

**int**[][] matrixB = { {0, 1, 2, 3}, {3, 4, 5, 6} };

**int**[][] mul = **new** **int**[rows][cols];

**for**(**int** i = 0; i < rows; i++)

{

**for** (**int** j = 0; j < cols; j++)

{

mul[i][j] = matrixA[i][j] \* matrixB[i][j];

}

}

System.***out***.println("Multiplication of the given Matrices are: ");

**for**(**int** i = 0; i < rows; i++)

{

**for** (**int** j = 0; j < cols; j++)

{

System.***out***.print(mul[i][j] + " ");

}

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

}

}

}

***Output :-***

Multiplication of the given Matrices are:

0 1 2 3

6 8 10 12

***Que 6***. Find out the highest and second highest numbers in an array[1D]

***Ans :-***

**import** java.util.Scanner;

**public** **class** HighestAnd2ndHighest

{

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

{

System.***out***.println("Enter Size of Array :- ");

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

**int** size=sc.nextInt();

**int** arr[]=**new** **int**[size];

//user input

System.***out***.println("Enter Elements in Array :-");

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

{

System.***out***.print("\tEnter Values :-\t");

arr[i]=sc.nextInt();

}

//Printing Array

System.***out***.print("Elements in Array are :- [ ");

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

{

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

}

System.***out***.print("]");

//Highest no

**int** large=0,n=arr[0];

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

{

**if**(n<arr[i])

{

large=arr[i];

n=large;

}

**else**

large=n;

}

System.***out***.println("\n\nHighest Number in Array is " +large );

//Second Highest no

**int** sechigh=0,m=arr[0];

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

{

**if**(arr[i]<large && m<arr[i])

{

sechigh=arr[i];

m=sechigh;

}

**else**

sechigh=m;

}

System.***out***.println("\nSecond Highest Number in Array is " +sechigh );

sc.close();

}

}

***Output :-***

Enter Size of Array :-

4

Enter Elements in Array :-

Enter Values :- 1

Enter Values :- 3

Enter Values :- 2

Enter Values :- 4

Elements in Array are :- [ 1 3 2 4 ]

Highest Number in Array is 4

Second Highest Number in Array is 3

***Que 7***. Concatenate two arrays [1D]

***Ans :-***

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

**public** **class** Concat2Array

{

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

{

**int** firstArray[] = {1,2,3,4,5,6}; //new int[size1] //initialized array

**int** secondArray[] = {11,12,13,14,15,16}; //new int[size2]

**int** length = firstArray.length + secondArray.length; //add the length of firstArray into secondArray

**int** mergedArray[] = **new** **int**[length]; //resultant array

**int** positn = 0;

//First Array

System.***out***.print("Fist Array are :- [");

**for**( **int** a : firstArray)

{

System.***out***.print("\t"+a);

}

System.***out***.print("\t]");

//Second Array

System.***out***.print("\n\nSecond Array are :- [");

**for**( **int** a : secondArray)

{

System.***out***.print("\t"+a);

}

System.***out***.print("\t]");

**for** (**int** element : firstArray) //copying elements of secondArray using for-each loop

{

mergedArray[positn] = element;

positn++; //increases position by 1

}

System.***out***.println("\n\nConcat Array are :- ");

**for** (**int** element : secondArray) //copying elements of firstArray using for-each loop

{

mergedArray[positn] = element;

positn++;

}

System.***out***.print(Arrays.*toString*(mergedArray)); //prints the result array

}

}

***Output :-***

Fist Array are :- [ 1 2 3 4 5 6 ]

Second Array are :- [ 11 12 13 14 15 16 ]

Concat Array are :-

[1, 2, 3, 4, 5, 6, 11, 12, 13, 14, 15, 16]

***Assignment Set 2 :-***

***Que 1.*** Write a program to create an array of integers and perform following operations on that array like finding the sum, average, maximum and minimum number in that array. Accept the numbers of the array from user.

***Ans :-***

**import** java.util.Scanner;

**public** **class** SumAvgMaxMin

{

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

{

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

System.***out***.println("Enter Size of Array :- ");

**int** size=sc.nextInt();

**int** arr[]=**new** **int**[size];

//User input

System.***out***.println("Enter Elements in Array :-");

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

{

System.***out***.print("\tEnter Values :-\t");

arr[i]=sc.nextInt();

}

//Printing Array

System.***out***.print("Elements in Array are :- [ ");

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

{

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

}

System.***out***.print("]");

//Sum And Avg

**int** sum=0,count=0,avg=0;

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

{

sum = sum+arr[i];

count++;

}

System.***out***.println("\n\nSum = " + sum);

avg = sum/count;

System.***out***.println("Average = " + avg);

//Highest no

**int** large=0,n=arr[0];

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

{

**if**(n<arr[i])

{

large=arr[i];

n=large;

}

**else**

large=n;

}

System.***out***.println("\n\nHighest Number in Array is " +large );

//Lowest no

**int** min=0,m=arr[0];

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

{

**if**(m>arr[i])

{

min=arr[i];

m=large;

}

**else**

min=m;

}

System.***out***.println("\n\nLowest Number in Array is " +min );

sc.close();

}

}

***Output :-***

Enter Size of Array :-

4

Enter Elements in Array :-

Enter Values :- 2

Enter Values :- 1

Enter Values :- 6

Enter Values :- 3

Elements in Array are :- [ 2 1 6 3 ]

Sum = 12

Average = 3

Highest Number in Array is 6

Lowest Number in Array is 3

***Que 2.*** Perform all the above operations for 2D arrays.

***Ans :-***

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

**public** **class** SumAvgMaxMin2D

{

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

{

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

System.***out***.print("Enter Row Size :- \t");

**int** row=sc.nextInt();

System.***out***.print("Enter Column Size :- \t");

**int** col=sc.nextInt();

**int** arr[][]=**new** **int**[row][col];

//User input

System.***out***.println("Enter Values :- \t");

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

{

**for**(**int** j = 0; j < arr[i].length; j++)

{

arr[i][j] = sc.nextInt();

}

}

//Printing

System.***out***.println("Entered Values :- ");

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

{

**for**(**int** j = 0; j < arr[i].length; j++)

{

System.***out***.print(" "+arr[i][j]);

}

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

}

//Sum And Avg

**float** sum=0;

**float** avg=0;

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

{

**for**(**int** j = 0; j < arr[i].length; j++)

{

sum = sum+arr[i][j];

}

}

System.***out***.println("\n\nSum = " + sum);

avg = sum/(row\*col);

System.***out***.println("Average = " + avg);

//Highest no

**int** max=arr[0][0];

**int** large=0;

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

{

**for**(**int** j = 0; j < arr[i].length; j++)

{

**if**(max<arr[i][j])

{

large=arr[i][j];

max=large;

}

**else**

large=max;

}

}

System.***out***.println("\n\nHighest Number in Array is " +large );

//Lowest no

**int** small=0;

**int** min=arr[0][0];

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

{

**for**(**int** j = 0; j < arr[i].length; j++)

{

**if**(min>arr[i][j])

{

small=arr[i][j];

min=small;

}

**else**

small=min;

}

}

System.***out***.println("\n\nLowest Number in Array is " +small );

sc.close();

}

}

***Output :-***

Enter Row Size :- 2

Enter Column Size :- 2

Enter Values :-

1

2

3

4

Entered Values :-

1 2

3 4

Sum = 10.0

Average = 2.5

Highest Number in Array is 4

Lowest Number in Array is 1

***Que 3.*** Enter data for two matrices. Multiply them to store result in third matrix & display result.

***Ans :-***

**public** **class** Multiply2Matrix

{

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

{

**int** a[][]={{1,1,1},{2,2,2},{3,3,3}};

**int** b[][]={{1,1,1},{2,2,2},{3,3,3}};

//creating another matrix to store the multiplication of two matrices

**int** c[][]=**new** **int**[3][3]; //3 rows and 3 columns

//multiplying and printing multiplication of 2 matrices

**for**(**int** i=0;i<3;i++)

{

**for**(**int** j=0;j<3;j++)

{

c[i][j]=0;

**for**(**int** k=0;k<3;k++)

{

c[i][j]+=a[i][k]\*b[k][j];

}//end of k loop

System.***out***.print(c[i][j]+" "); //printing matrix element

}//end of j loop

System.***out***.println();//new line

}

}

***Output:-***

6 6 6

12 12 12

18 18 18

***Que 4.*** Enter data for one matrix. Find its Transpose & display result.

***Ans :-***

**public** **class** TransposeMatrix

{

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

{

//creating a matrix

**int** original[][]={{1,3,4},{2,4,3},{3,4,5}};

//creating another matrix to store transpose of a matrix

**int** transpose[][]=**new** **int**[3][3]; //3 rows and 3 columns

//Code to transpose a matrix

**for**(**int** i=0;i<3;i++)

{

**for**(**int** j=0;j<3;j++)

{

transpose[i][j]=original[j][i];

}

}

System.***out***.println("Printing Matrix without transpose:");

**for**(**int** i=0;i<3;i++)

{

**for**(**int** j=0;j<3;j++)

{

System.***out***.print(original[i][j]+" ");

}

System.***out***.println();//new line

}

System.***out***.println("Printing Matrix After Transpose:");

**for**(**int** i=0;i<3;i++)

{

**for**(**int** j=0;j<3;j++)

{

System.***out***.print(transpose[i][j]+" ");

}

System.***out***.println();//new line

}

}

***Output :-***

Printing Matrix without transpose:

1 3 4

2 4 3

3 4 5

Printing Matrix After Transpose:

1 2 3

3 4 4

4 3 5

***Que 5***.Create a two dimensional array. Last rows elements should be summation of every column. Similarly last columns elements should be summation of all elements of all rows.

e.g.

1 2 3 4 10

2 3 4 5 15

3 4 5 6 18

4 5 6 7 22

10 15 18 22 65

***Ans :-***

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

**public** **class** AddRowCol2

{

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

{

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

**int** arr[][] = **new** **int**[5][5];//5x5 array created

System.***out***.print("Enter array elements");

**int** row = 0,col = 0;//i = row, j = column

**for**(row = 0; row < arr.length-1; row++)//accepts 4x4 array by user

{

**for**(col = 0; col < arr[row].length-1; col++)

arr[row][col] = sc.nextInt();

//creates last column

arr[row][col] = (arr[row][0])+(arr[row][1])+(arr[row][2])+(arr[row][3]);

}

//System.out.println(j);

**int** i = 0, j = 0;

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

{

**for**(j = 0; j < arr[i].length-1; j++)

{

arr[col][i] += arr[j][i];//creates last row

}

}

System.***out***.println("Array elements are->");//prints 2-d array with for-each

**for**(**int** itr[] : arr)

{

**for**(**int** x : itr)

{

System.***out***.printf("%3d\t",x);

}

System.***out***.println("\n");

}

sc.close();

}

}

***Output :-***

Enter array elements

1

2

3

4

2

3

4

5

3

4

5

6

4

5

6

7

Array elements are->

1 2 3 4 10

2 3 4 5 15

3 4 5 6 18

4 5 6 7 22

10 15 18 22 65