OOPS Assignment

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COURSE : b.tech computer science engineering 2nd year
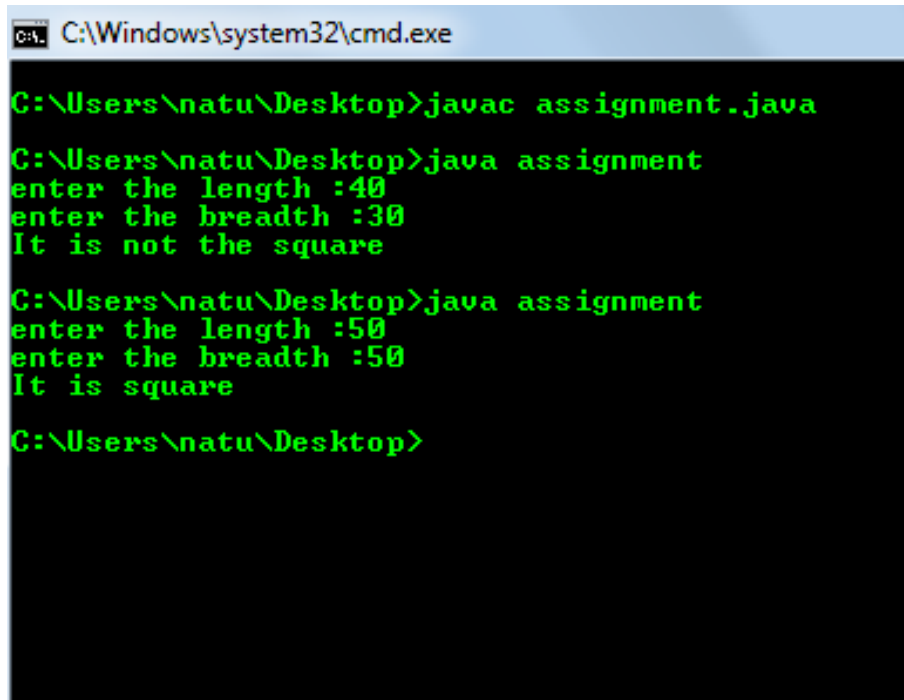
ROLL NO. : 18

SECTION : P

UNIVERSITY ROLL NUMBER : GLA2022-25070107

➢ Take values of length and breadth of a rectangle from user and check if it is square or not.

CODE

```java
import java.util.Scanner;
import java.io.*;
class assignment{
        static Scanner sc=new Scanner(System.in);
        static void qs1(){
        System.out.print("enter the length :");
        int a=sc.nextInt();
        System.out.print("enter the breadth :");
        int b=sc.nextInt();
        if(a==b){
                System.out.println("It is square");
        }else{
                System.out.println("It is not the square");
                }
        }
public static void main(String arg[]){
        qs1();

}
}
```

<div align="center">

OUTPUT

</div>

> **Take two int values from user and print greatest among them.**

<div align="center">

CODE

</div>

```java
import java.util.Scanner;
import java.io.*;
class assignment{
        static Scanner sc=new Scanner(System.in);
static void qs2(){
        System.out.print("enter First Value :");
        int num1=sc.nextInt();
        System.out.print("enter Second value :");
        int num2=sc.nextInt();
        if (num1 == num2)
    System.out.println ("both are equal");
   else if (num1 > num2)
      System.out.println (num1 + " is greater");
else
      System.out.println (num2 + " is greater");
```

```
        }
public static void main(String arg[]){
        qs1();


}
}
```

➤ A shop will give discount of 10% if the cost of purchased quantity is more than 1000.

➤ Ask user for quantity

➤ Suppose, one unit will cost 100.

➤ Judge and print total cost for user.

CODE

```
import java.util.Scanner;
import java.io.*;
class assignment{
        static Scanner sc=new Scanner(System.in);
static void qs3(){
                System.out.println("Enter the quantity: ");
                double n = sc.nextDouble();
                if (n>1000) {
```

```java
                    System.out.println("The total cost = "+(n-(n/100*10)));
            }
            else{
                    System.out.println("The total cost = "+n);
            }
        }
    public static void main(String arg[]){
            qs3();


    }
}
```

➢ A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.Ask user for their salary and year of service and print the net bonus amount.

CODE

```java
import java.util.Scanner;

import java.io.*;

class assignment{

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

static void qs4(){

int year;

int sal;

double d;

System.out.print("Enter total Years of services : ");

year=sc.nextInt();

if(year>5){

System.out.print("Congrats..YES..! your total year of services more than 5 years\n\nPlease Enter your salary..> ");

sal=sc.nextInt();

System.out.println("YOUR SALARY IS : "+sal);

System.out.println("YOUR 5% BONUS  IS :"+sal*0.05);

System.out.println("YOUR NET BONUS WITH SALARY IS :"+(sal+(sal*0.05)));

}
else{

System.out.println("NO BONUS..");

 }

}
public static void main(String arg[]){

        qs4();
```
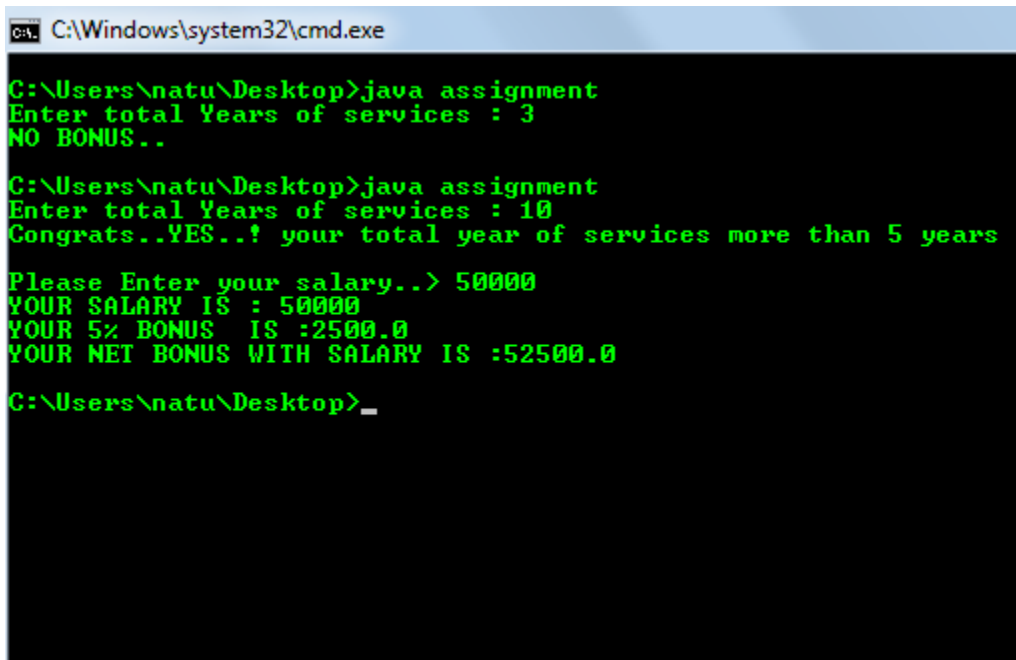
}

}

OUTPUT

➤ A school has following rules for grading system:

a. Below 25 - F

b. 25 to 45 - E

c. 45 to 50 - D

d. 50 to 60 - C

e. 60 to 80 - B

f. Above 80 - A

Ask user to enter marks and print the corresponding grade.

CODE

```java
import java.util.Scanner;

import java.io.*;

class assignment{

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

static void qs5(){

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

   int x = sc.nextInt();

   if(x<25){

    System.out.println("F");

   }

   else if((x>=25)&&(x<45)){

    System.out.println("E");

   }

   else if((x>=45)&&(x<50)){

    System.out.println("D");

   }

   else if((x>=50)&&(x<60)){

    System.out.println("C");

   }

   else if((x>=60)&&(x<80)){

    System.out.println("B");

   }

   else if((x>=80)&&(x<=100)){
```
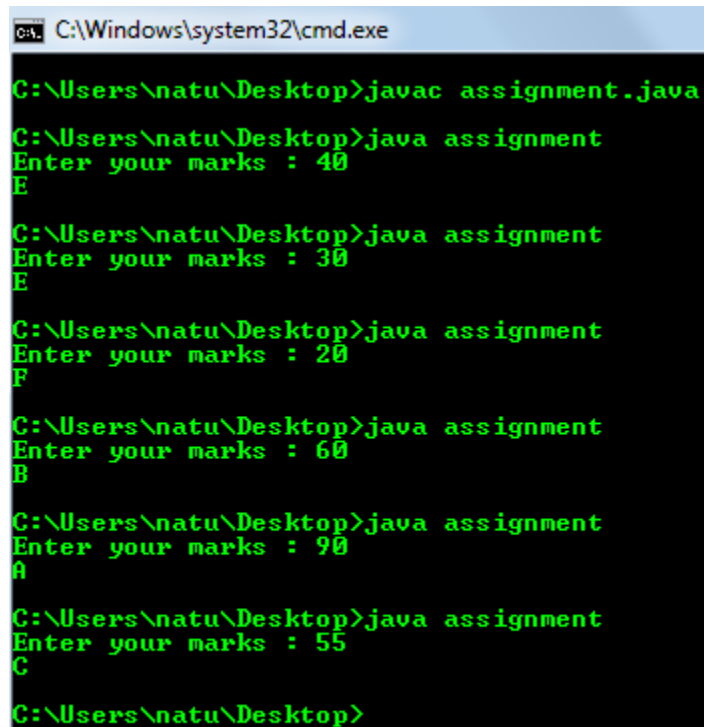
```java
            System.out.println("A");

        }

    else{

        System.out.println("Not correct marks");

    }

        }

public static void main(String arg[]){

        qs5();


}

}
```
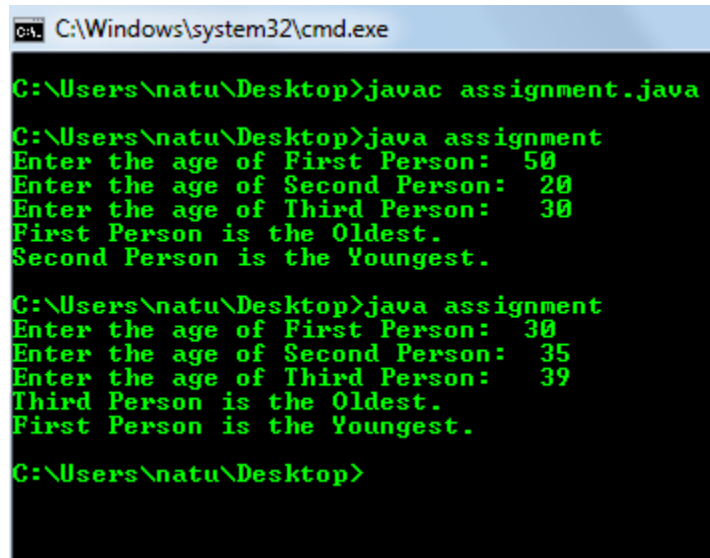
OUTPUT

➤ Take input of age of 3 people by user and determine oldest and youngest among them.

CODE

```java
import java.util.Scanner;
import java.io.*;
class assignment{
static Scanner sc=new Scanner(System.in);
static void qs6(){
    int age1,age2,age3,max,min;
        System.out.print("Enter the age of First Person:  ");
        age1=sc.nextInt();
        System.out.print("Enter the age of Second Person:  ");
        age2=sc.nextInt();
        System.out.print("Enter the age of Third Person:   ");
        age3=sc.nextInt();
        if(age1>age2 && age1>age3){
                System.out.println("First Person is the Oldest.");
        }else if(age2>age1 && age2>age3){
                System.out.println("Second Person is the Oldest.");
        }else if(age3>age1 && age3>age2){
                System.out.println("Third Person is the Oldest.");
        }else{
                System.out.println("All have equal ages.");
        //   System.exit(0);
        }
        if(age1<age2 && age1<age3){
                System.out.println("First Person is the Youngest.");
        }else if(age2<age1 && age2<age3){
                System.out.println("Second Person is the Youngest.");
        }else if(age3<age1 && age3<age2){
                System.out.println("Third Person is the Youngest.");
        }
}
public static void main(String arg[]){
```

```
    qs6();


}
}
```

> Write a program to print absolute vlaue of a number
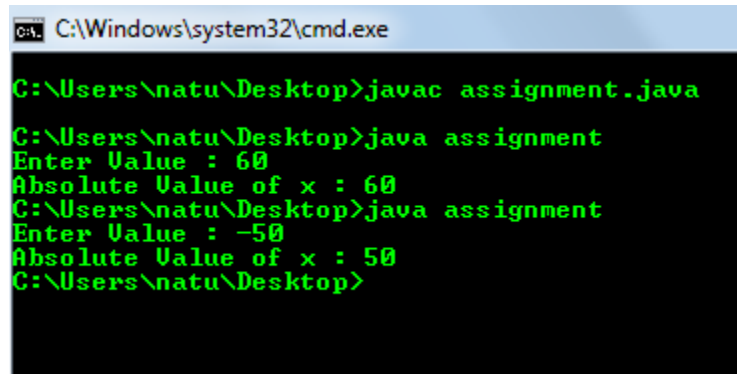> entered by user. E.g.-

INPUT: 1   OUTPUT: 1

INPUT: -1   OUTPUT: 1

```
import java.util.Scanner;
import java.io.*;
class assignment{
static Scanner sc=new Scanner(System.in);
static void qs7(){
    System.out.print("Enter Value : ");
     int x=sc.nextInt();
    System.out.printf( "Absolute Value of x : " + Math.abs(x) );
}
public static void main(String arg[]){
```

```
        qs7();

   }
   }
```

➢ A student will not be allowed to sit in exam if his/her attendence is less than 75%.

- Take following input from user
- Number of classes held
- Number of classes attended.
- And print
- percentage of class attended
- Is student is allowed to sit in exam or not.

CODE

```java
import java.util.Scanner;
import java.io.*;
class assignment{
static Scanner sc=new Scanner(System.in);
static void qs8(){
    System.out.print("Number of classes held : ");
    int x=sc.nextInt();
    System.out.print("Number of classes attended : ");
    int y=sc.nextInt();
```

```java
    int pf=y*100/x;
    System.out.println(pf);
    if(pf>=75){
    System.out.println("The student is allowed to sit in the exam hall : "+pf);
    }else{
    System.out.println("The student is not allowed to sit in the exam hall : "+pf);
    }
}
public static void main(String arg[]){
    qs8();

}
}
```

OUTPUT


```
C:\Windows\system32\cmd.exe

C:\Users\natu\Desktop>javac assignment.java

C:\Users\natu\Desktop>java assignment
Number of classes held : 100
Number of classes attended : 80
80
The student is allowed to sit in the exam hall : 80

C:\Users\natu\Desktop>java assignment
Number of classes held : 100
Number of classes attended : 70
70
The student is not allowed to sit in the exam hall : 70

C:\Users\natu\Desktop>_
```

➢ Modify the above question to allow student to sit if he/she has medical cause. Ask user if he/she has medical cause or not ('Y' or 'N') and print accordingly.

CODE

```java
import java.util.Scanner;
import java.io.*;
class assignment{
static Scanner sc=new Scanner(System.in);
static void qs9(){
```

```java
System.out.print("Medical cause or not ( 'Y' or 'N' ) : ");
String z=sc.nextLine();
System.out.print("Number of classes held : ");
int x=sc.nextInt();
System.out.print("Number of classes attended : ");
int y=sc.nextInt();
int pf=y*100/x;
if(pf>=75 && z.equals("y")){
System.out.println("The student is allowed to sit in the exam hall : "+pf);
}else if(pf>=75 && z.equals("n")){
System.out.println("The student is allowed to sit in the exam hall : "+pf);
}
else{
System.out.println("The student is not allowed to sit in the exam hall : "+pf);
}
}
public static void main(String arg[]){
     qs9();

}
}
```

OUTPUT

- If x = 2 y = 5 z = 0 then find values of the following expressions:
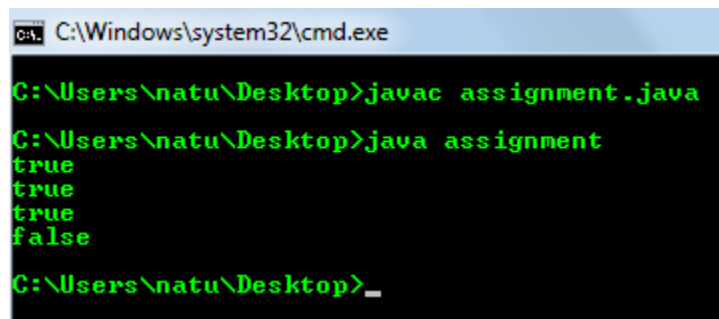
a. x == 2

b. x != 5

c. x != 5 && y >= 5

d. z != 0 || x == 2

e. !(y < 10)

CODE

```java
import java.util.Scanner;
import java.io.*;
class assignment{
static Scanner sc=new Scanner(System.in);
static void qs10(){
                int x=2;
                int y=5;
                int z=0;
                System.out.println(x==2);
                System.out.println(x!=5);
                System.out.println(x!=5 && y>=5);
                System.out.println(!(y<10));
}
public static void main(String arg[]){
        qs10();

}
}
```

OUTPUT

> Write a program to check whether a entered character is lowercase (a to z) or uppercase (A to Z).

CODE

```java
import java.util.Scanner;
import java.io.*;
class assignment{
static Scanner sc=new Scanner(System.in);
static void qs11(){
        char ch;
                System.out.print("Enter the character  ");
                ch=sc.next().charAt(0);
                if(ch>='A' && ch<='Z'){
                        System.out.println(ch+" is an upper case letter ");
                }
                else if(ch>='a' && ch<='z'){
                        System.out.println(ch+" is a lower case letter ");
                }
                else{
                        System.out.println(ch+" is not a Alphabets ");
                }
}
public static void main(String arg[]){
        qs11();

}
}
```

OUTPUT

> Write a program to check if a year is leap year or not.If a year is divisible by 4 then it is leap year but if the year is century year like 2000, 1900, 2100 then it must be divisible by 400.

CODE

```java
import java.util.Scanner;

import java.io.*;

class assignment{

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

static void qs12(){

System.out.print("Enter an Year : ");

int year= sc.nextInt();

if (year % 4 == 0 && year % 100!= 0 || year%400 == 0){

    System.out.println("Specified year is a leap year");

    }else{
```

```java
        System.out.println("Specified year is not a leap year");

    }

}

public static void main(String arg[]){

    qs12();

}

}
```

OUTPUT

> Ask user to enter age, sex (M or F), marital status (Y or N) and then using following rules print their place of service.
>   - if employee is female, then she will work only in urban areas.
>   - if employee is a male and age is in between 20 to 40 then he may work in anywhere
>   - if employee is male and age is in between 40 t0 60 then he will work in urban areas only.
>   - And any other input of age should print "ERROR".

CODE

```java
import java.util.Scanner;

import java.io.*;

class assignment{

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

static void qs13(){

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

                int age = sc.nextInt();

                System.out.print("Enter sex: M/F");

                int sex = sc.next().charAt(0);

                if(sex == 'F') {

                        System.out.println("You will work only in urban areas");

                }

                if(sex == 'M') {

                if((age >= 20) && (age < 40)) {

                System.out.println("You may work anywhere");

                }

                else if((age >= 40) && (age < 60)) {

                System.out.println("You will work only in urban areas");

                }

                        else {

                                System.out.println("ERROR");
```
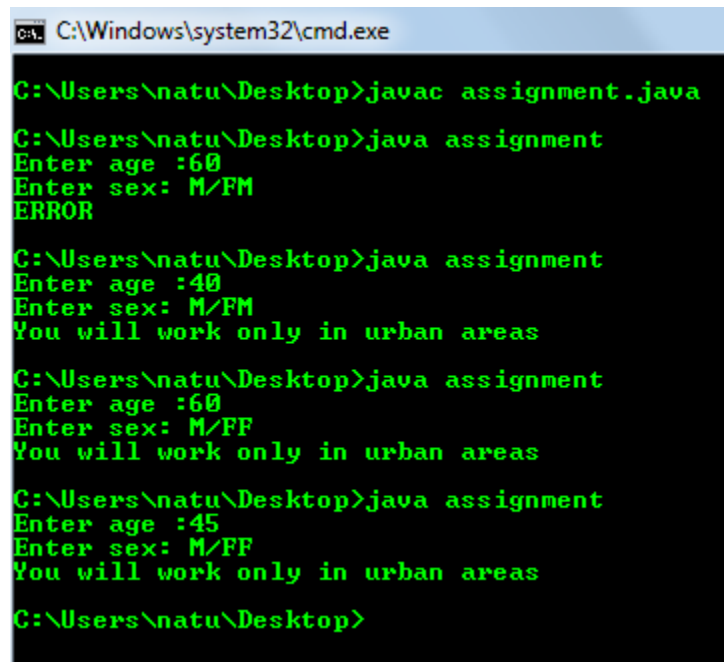
```
                }

            }

    }

public static void main(String arg[]){

        qs13();


    }

    }
```

OUTPUT

➢ A 4 digit number is entered through keyboard. Write a program to print a new number with digits reversed as of orignal one. E.g.-

INPUT : 1234   OUTPUT : 4321   ,   INPUT : 5982   OUTPUT : 2895

CODE

```java
import java.util.Scanner;

import java.io.*;

class assignment{

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

static void qs14(){

        int reverse = 0;

        System.out.print("Enter Number : ");

        int num=sc.nextInt();

        while(num != 0){

                int remainder = num % 10;

                reverse = reverse * 10 + remainder;

                num = num/10;

        }

                System.out.println("The reverse of the given number is: " + reverse);

}

public static void main(String arg[]){

        qs14();
```
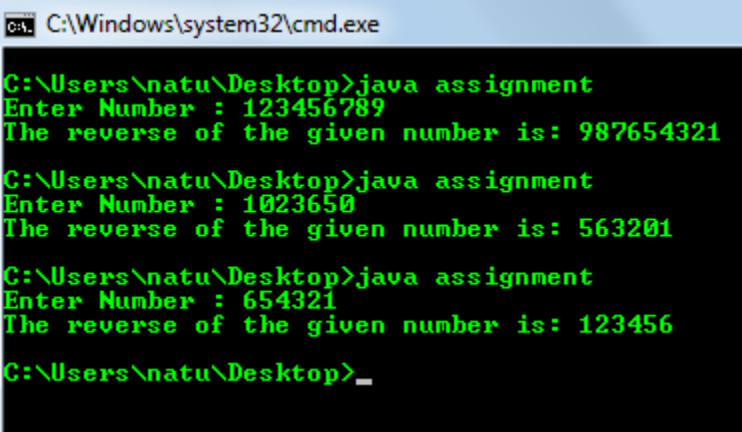
```
}

}
```

OUTPUT

C:\Windows\system32\cmd.exe

```
C:\Users\natu\Desktop>java assignment
Enter Number : 123456789
The reverse of the given number is: 987654321

C:\Users\natu\Desktop>java assignment
Enter Number : 1023650
The reverse of the given number is: 563201

C:\Users\natu\Desktop>java assignment
Enter Number : 654321
The reverse of the given number is: 123456

C:\Users\natu\Desktop>_
```