

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

```
import java.util.*;
class Rectangle
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);

        System.out.println("Enter your length value:--");
        int a = s.nextInt();
        System.out.println("Enter your breadth value:--");
        int b = s.nextInt();
        System.out.println("Area of rectangle:--" + a*b);
        if(a == b)
        {
            System.out.println("It is square value");
        }
        else
        {
            System.out.println("It is not square");
        }
    }
}
```

Output

Enter your length value: --

4

Enter your breadth value: --

4

Area of rectangle: --16

It is square value

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

```
import java.util.Scanner;
class Greatestvalue
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter your first value:--");
        int a = s.nextInt();
        System.out.println("Enter your second value:--");
        int b = s.nextInt();
        if(a>b)
        {
            System.out.println("First value is greater than second " +a);
        }
    }
}
```

```

        }
        else
        {
            System.out.println("Second value is greater than first " +b);
        }
    }
}

```

Output

Enter your first value: --

20

Enter your second value: --

10

First value is greater than second 20

3.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.

```

import java.util.*;
class Discount
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter your quantity value:");
        int n = s.nextInt();
        if(n>=1000)
        {
            System.out.println("Hurry!!! You have a 10% discount:");
        }
        else
        {
            System.out.println("Sorry dear you have no discount for this purchase try
next time:");
        }
    }
}

```

Output

Enter your quantity value:

1100

Hurry!!! You have a 10% discount:

4. 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.

```

import java.util.*;
class Bonus
{

```

```

public static void main(String args[])
{
    Scanner s = new Scanner(System.in);
    System.out.println("Enter your salary amount:");
    int a = s.nextInt();
    System.out.println("Enter your Service time:");
    int b = s.nextInt();
    if(b > 5)
    {
        System.out.println("Congrats you have 5% bonus of your salary amount:" +
a*5/100);
    }
    else
    {
        System.out.println("Sorry dear your service time is less than 5 years");
    }
}
}

```

#### Output

```

Enter your salary amount:
200000
Enter your Service time:
6
Congrats you have 5% bonus of your salary amount:10000

```

5. 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.

```

import java.util.*;
class Grades
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter a number:");
        double score = s.nextDouble();
        int switch_score = (int) (score / 10);
        System.out.println("switch_score" + switch_score);

        switch(switch_score)
        {
            case 9:
                System.out.println("A");
                break;

```

```

        case 8:
            System.out.println("A");
            break;
        case 7:
            System.out.println("B");
            break;
        case 6:
            System.out.println("B");
            break;
        case 5:
            System.out.println("c");
            break;
        case 4:
            System.out.println("D:");
            break;
        case 3:
            System.out.println("E:");
            break;
        case 2:
            System.out.println("F:");
            break;
        default:
            System.out.println("Invalid input:");
            break;
    }
}
}

```

#### Output

```

Enter a number:
85
switch_score8
A

```

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

```

import java.util.*;
class Oldyoung
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter first people age:");
        int a = s.nextInt();
        System.out.println("Enter second people age:");
        int b = s.nextInt();
        System.out.println("Enter third people age:");
        int c = s.nextInt();
        if (a>b && a>c)
        {
            System.out.println("The oldest age is A: " +a);
        }
    }
}

```

```

        else if(b>a && b>c)
        {
            System.out.println("The oldest age is B:" +b);
        }
        else if(c>a && c>b)
        {
            System.out.println("The oldest age is C:" +c);
        }
        if (a<b && a<c)
        {
            System.out.println("The youngest age is A:" +a);
        }
        else if (b<a && b<c)
        {
            System.out.println("The youngest age is B:" +b);
        }
        else if (c<a && c<b)
        {
            System.out.println("The youngest age is C:" +c);
        }
    }
}

```

#### Output

```

Enter first people age:
80
Enter second people age:
50
Enter third people age:
90
The oldest age is C:90
The youngest age is B:50

```

7. 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.*;
class Absolute
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter your first value:");
        int a = s.nextInt();
        System.out.println("Enter your second value:");
        int b = s.nextInt();
        System.out.println("first value:" +a);
        System.out.println("second value:" +Math.abs(a));
    }
}

```

```
}
```

Output

Enter your first value:

12

Enter your second value:

-12

first value:12

second value:12

8. A student will not be allowed to sit in exam if his/her attendance 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.

```
import java.util.*;
```

```
class Attendance
```

```
{
```

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

```
    {
```

```
        float c;
```

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

```
        System.out.println("Enter Number of classes held:");
```

```
        float held = s.nextFloat();
```

```
        System.out.println("Enter Number of classes attended:");
```

```
        float attended = s.nextFloat();
```

```
        c = attended/held*100;
```

```
        System.out.println("Percentage of class attended you:" +c);
```

```
        if(c>75)
```

```
        {
```

```
            System.out.println("Is student is allowed to sit in this exam:");
```

```
        }
```

```
        else
```

```
        {
```

```
            System.out.println("Is student is not allowed to sit in this exam:");
```

```
        }
```

```
    }
```

```
}
```

Output

Enter Number of classes held:

62

Enter Number of classes attended:

40

Percentage of class attended you:64.51613

Is student is not allowed to sit in this exam:

9. 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.

```
import java.util.*;
class Attendance
{
    public static void main(String args[])
    {
        float c;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter Number of classes held:");
        float held = s.nextFloat();
        System.out.println("Enter Number of classes attended:");
        float attended = s.nextFloat();
        c = attended/held*100;
        System.out.println("Percentage of class attended you:" +c);
        System.out.println("Enter if you have any medical couese y and n");
        char a = s.next().charAt(0);
        if(c>75)
        {
            System.out.println("Is student is allowed to sit in this exam:");
        }
        else if(a == 'y')
        {
            System.out.println("Is student is allowed to sit in this exam:");
        }
        else
        {
            System.out.println("Is student is not allowed to sit in this exam:");
        }
    }
}
```

Output

Enter Number of classes held:

62

Enter Number of classes attended:

40

Percentage of class attended you:64.51613

Enter if you have any medical couese y and n

y

Is student is allowed to sit in this exam:

10.

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)`

```
class Expression
{
    public static void main(String args[])
    {
        int x = 2, y = 5, z = 0;
        System.out.println(x == 2);
        System.out.println(x != 5);
        System.out.println(x != 5 && y >= 5);
        System.out.println(z != 0 || x == 2);
        System.out.println(!(y < 10));
    }
}
```

Output  
true  
true  
true  
true  
false

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

```
import java.util.*;
class Upper
```

```
{
    public static void main(String args[])
    {
        char ch;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the character value:");
        ch = s.next().charAt(0);
        if(ch>='A' && ch<='Z')
        {
            System.out.println("it is upper case letter " +ch);
        }
        else if(ch>='a' && ch<='z')
        {
            System.out.println("it is lower case letter " +ch);
        }
        else
        {
            System.out.println("Is not any alphabet letter " +ch);
        }
    }
}
```

Output  
Enter the character value:  
G



it is upper case letter G

## Level 2

1. 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.

```
import java.util.*;
class Leapyear
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter any year which you want it is leap or not:");
        int leap = s.nextInt();
        if(leap%4 == 0 && leap%100 != 0 || leap%400 == 0)
        {
            System.out.println("It is leap year:");
        }
        /*else if(leap%400 == 0)
        {
            System.out.println("It is leap year:");
        }*/
        else
        {
            System.out.println("It is not any leap year:");
        }
    }
}
```

## Output

Enter any year which you want it is leap or not:

2000

It is leap year:

2. 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 to 60 then he will work in urban areas only.

And any other input of age should print "ERROR".

```
import java.util.*;
class Employee
{
    public static void main(String args[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter your age:");
        int age = s.nextInt();
        System.out.println("Enter your gender:");
    }
}
```

```

        int gender = s.next().charAt(0);
        System.out.println("Enter your marital status:");
        int married = s.next().charAt(0);
        if(gender == 'F')
        {
            System.out.println("You work only urban areas:");
        }
        else if(gender == 'M' && age<=40 && age>=20)
        {
            System.out.println("You work any where:");
        }
        else if(gender == 'M' && age>=40 && age<=60)
        {
            System.out.println("You work only urban areas:");
        }
        else
        {
            System.out.println("ERROR");
        }
    }
}

```

#### Output

First Condition satisfied

Enter your age:

45

Enter your gender:

F

Enter your marital status:

Y

You work only urban areas:

Second Condition satisfied

Enter your age:

35

Enter your gender:

M

Enter your marital status:

Y

You work any where:

Third Condition satisfied

Enter your age:

55

Enter your gender:

M

Enter your marital status:

Y

You work only urban areas:

Forth Condition satisfied

Enter your age:

90

Enter your gender:

M

Enter your marital status:

Y

ERROR

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

INPUT : 1234      OUTPUT : 4321

INPUT : 5982      OUTPUT : 2895

```
import java.util.*;
class Reverse
{
    public static void main(String args[])
    {
        int reversed = 0;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter your value for digits:");
        int n = s.nextInt();
        System.out.println("Before number without reverse:" +n);
        while(n != 0)
        {
            int digits = n % 10;
            reversed = reversed * 10 + digits;
            n /= 10;
        }
        System.out.println("After reverse number:" +reversed);
    }
}
```

Output

Enter your value for digits:

1234

Before number without reverse:1234

After reverse number:4321