

HW

Q WAYS to print any integer b/w
200 (inclusive) & 300 (exclusive)

Soln →

(int)(Math.random() * 100) + 200;

↓ max
0.999... Max +299
↓ × 100
99.99... + 200 = 299.99
↓ (int)
299

Q 200 (exclusive) & 300 (inclusive).

Soln ((int)(Math.random() * 100) + 201);

201 → 300

↓ max
0.999
× 100
99.9 → 99 + 201 = 300

* Block → A set of statements written under curly braces.

Conditional statements in Java

if - else

```
✓ if (condition)
{
    _____
    _____
}
else
✓ {
    _____
    _____
}
```

* dangling else ⇒ An else without any if statement. It is an error.

Switch case / Menu Driven program

* Multiple branching statement.

* For testing a single expression against a series of possible values & executing the code with matching case.

* Works only with integer (byte, short, int), char & String.

* Default case :- If no case matches, default case is executed. It may or may not be used.

```
int a = 10;
```

```
int b = 20;
```

```
if (a == 10)
```

```
{  
  if (true)
```

```
    println(b); → 20
```

```
}
```

* Note :- If curly braces not given in if-else, then the very first statement after if or else is considered under if-else.

* Fall through : Execution of all subsequent cases along with matching cases. It can be avoided by using break statement.

Eg:- int x = 20;
 int y = 30;
 ~~if~~ (x >= 20)
 → println(x);
 println(y);
 else
 println(y);

Output

<u>R</u>	<u>S</u>
20	20
X	30

if - else

1. It provides only 2 branching option.

2. It can handle more complex conditions.

3. No fall-through

4. It is used to execute set of instructions conditionally.

Switch case

* Provides multiple branching options.

* It can handle only equality based simple conditions.

* Fall through if no break statement used.

* Switch checks an expression or variable against a no. of possible values.

Q WAP to input a no. from the range 1 to 7 and print "WEEKDAY" if it is from 1 to 5, print "WEEKEND" if it is from 6 to 7, print "WRONG INPUT" otherwise.

```
import java.util.Scanner;
class Full
{
    public static void main (String args[])
    {
        Scanner ob = new Scanner (System.in);
        System.out.println("Enter a no. b/w 1 to 7");
        int n = ob.nextInt();
        switch (n)
```

```
switch (n)
```

```
{
```

```
    case 1:
```

```
    case 2:
```

```
    case 3:
```

```
    case 4:
```

```
    case 5:
```

```
        Sopl n("WEEKDAY");
```

```
    break;
```

```
    case 6:
```

```
    case 7:
```

```
        Sopl n("WEEKEND");
```

```
    break;
```

```
    default:
```

```
        Sopl n("WRONG INPUT");
```

```
}
```

```
}
```

```
}
```

Q The rate of income tax payable for a financial year for an individual is as follows:-

Income Range	Income Tax Rates
Up to ₹ 250000	Nil
₹ 250001 to ₹ 500000	5% of exceeding amt.
₹ 500001 to ₹ 10,00,000	₹ 12500 + 20% of exceeding amt.
Above ₹ 10,00,000	₹ 1,12,500 + 30% of exceeding amt.

Soln →

```
import java.util.Scanner;
class full
{
    psvm (String args[])
    {
        Scanner ob = new Scanner(System.in);
        Sopln ("Enter annual income ");
        double ai = ob.nextDouble();
        double t = 0;
        if (ai <= 250000)
            t = 0;
        else if (ai <= 500000) X
            t = 0.05 * (ai - 250000);
        else if (ai <= 1000000)
            t = 12500 + 0.20 * (ai - 500000);
        else
            t = 112500 + 0.30 * (ai - 1000000);
        Sopln ("Income tax payable = " + t);
    }
}
```