Very Shortened JAVA Notes (class 9 icse)

DATA Types

Data Types (primitive) : Remember the names of these

- byte – can store very small numbers 56, -66, 89 etc.
- short – some more numbers like 1024 , -569 etc. but no decimal
- int – can store integers like 5 , -53 , 125566 etc. but no decimals.
- long – can store large number of integers like 1256689663, -88898526 etc.
- float – can store small number of decimal value like 5.256, -8.896 etc.
- double – can store large number of decimal value like 1.41428962.
- char – one single character like inside ‘ ’ like ‘#’ ‘J’ ‘A’.
- Boolean – can store true or false.

Any other data type is considered as NON-PRIMITIVE, also called REFERENCE TYPE datatype.

OPERATORS

Arithmetic Operators

+	Addition	x + y, 5 + 10
-	Subtraction	x - y, 15-6
*	Multiplication	x * y, 10*2
/	Division	x / y, 45/9
%	Modulus	Gives the remainder

Unary Operators

++m first add 1 then show value in same line | m++ show value then add 1 from next line

--n first subtract 1 then show value in the same line | n—show value the subtract -1 from the next line

Assignment Operators

=	used to assign value to a variable, like	x = 12, p = -12, a = b etc.
+=	add the value to given variable, like	x = 10 x += 20 so x becomes 10 + 20 = 30
-=	subtract the value from variable, like	x = 10 x -= 5 so x becomes 10 – 5 = 5
*=	multiply the value to variable, like	x = 10 x *= 5 so x becomes 10 * 5 = 50
/=	divide the variable by the value, like	x = 10 x /= 5 so x becomes 10 / 5 = 2

Relational Operators

>	Greater than	10 > 2, 0 > -1
<	Less than	-1 < 0, 5 < 15
>=	Greater than equals	
<=	Less than equals	
==	Equal to	2*2 == 4, 5 – 5 == 0
!=	NOT Equal to	2*2 != 10

Logical Operators

&& and

|| or

! not

Mathematical Library Methods

> Pre defined functions

> In java.lang package

> 13 Methods/functions

> to use, simply say maths.function(value);

abs() - absolute value i.e, removes - sign. real life |x| , |a|, |b| etc.

```
int x = Math.abs(-5);
```

x = 5

sqrt() - square root of a positive number.

```
int x = Math.sqrt(81);
```

x = 9

cbrt() - cube root of a positive number.

```
Int x = Math.cbrt(27);
```

x = 3

pow() - power of a^b.

```
int x = Math.pow(2 , 3) ;      // 2 to-the-power 3
```

x = 8

round() - round of to the nearest integer.

```
int x = Math.round(5.5);
```

int x = 6

rint() - round of to the nearest integer with .0 at end

```
double x = Math.rint(4.5);
```

x = 5.0

floor() - nearest integer but less than the given number.

```
int x = Math.floor(9.8)          // 9 < 9.8 < 10. Choosing the lower value
```

x = 9

ceil() - nearest integer but greater than given number.

```
int x = Math.ceil(8.2)          // 8 < 8.2 < 9. Choosing the upper value
x = 9
```

max() - largest value b/w two numerical value.

```
double x = Math.max(5.3 , 1);
x = 5.3
```

min() - smallest value b/w two numerical value.

```
double x = Math.min(5.3 , -3);
x = -3
```

random() - random value b/w 0.0 and 1.0.

```
double x = Math.random()
x = 0.256347899 , 0.25796354 , 0.68564586 etc.
```

Conditional Statements In Java

Program can be two types

- Normal Flow
- Conditional Flow

Mainly 3 statements in conditional flow

if() ; else if(){} ; else()

How to use?

```
if(condition )
        System.out.println(" ");
else if (condition ) {
        System.out.println();
}
else
        System.out.println();
```

Q. Create a program that takes a student's score and prints their corresponding grade based on the following criteria:

90 or above: A
80-89: B
70-79: C
60-69: D
Below 60: F

```
public class GradeCalculator {
    public static void main(String[] args) {

        int score = 50;

        if (score >= 90)
                System.out.println("The student's grade is A");
                System.out.println("The student's grade is: " + grade);

        else if (score >= 80 && score <= 89) {
                System.out.println("The student's grade is B”);
        }
        else if (score >= 70 && score <= 79) {
                System.out.println("The student's grade is C”);
        }
        else if (score >= 60 && score <= 69) {
                System.out.println("The student's grade is D”);
        }
        else
                System.out.println("The student's grade is F”);
                System.out.println("Call Your parents”);
    }
}
```