JAVA Notes 3 – MATH class

The Math class in JAVA contains methods for performing basic numeric operations such as finding the square and square root. The following are a list of some of the methods that are available in the Math class. The random() command is the mostly used command from the Math class.

abs()

Returns the absolute value of the argument i.e. any negative number is converted to positive. Example:

```
class AbsDemo{
    public static void main (String args[]){
        int i = 7;
        int j = -9;
        System.out.println("Absolute of "+i+": "+Math.abs(i));
        System.out.println("Absolute of "+j+": "+Math.abs(j));
    }
}
```

pow()

Returns the power. That is pow(2,4) works out 2^4. Example:

```
class Power{
    public static void main (String args[]){
        int a = 2;
        int b = 8;
        System.out.println(Math.pow(a,b));
    }
}
```

sqrt()

Returns the square root of a number. Example:

```
class SquareRoot{
    public static void main (String args[]){
        int num = 16;
        System.out.println("Square root of 16= "+Math.sqrt(num));
    }
}
```

random()

This method is used to generate a random number between 0.0 and 1.0 (not included). The following example is used to generate a number between 1 and 10. Type casting is required to give precise answer as integer and not decimal:

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

          int num = (int)(Math.random() * (10)) + 1;
          System.out.println("Generated Number= "+num);
     }
}
```

round()

Rounds a number. That is, it removes the decimal part of a number. Example:

```
class MathRound1{
     public static void main (String args[]){

          float num = Math.round(2323.43930);
          System.out.println("Round value of 2323.43930= " +num);
     }
}
```

ceil()

Returns the smallest integer that is greater than or equal to the argument. Returned as a double.

```
class FindCeiling{
     public static void main (String args[]){
          //Returns the smallest integer not less than 10.1, i.e. 11
          System.out.println("10.1 = " +Math.ceil(10.1));
          //Returns the smallest integer not less than 5.5, i.e. 6
          System.out.println("5.5 = " +Math.ceil(5.5));
     }
}
```

floor()

Returns the largest integer that is less tan or equal to the argument. Returned as a double.

```
class FinfFloor{
     public static void main (String args[]){
          //Returns largest integer is not less than 30.1, i.e. 30
          System.out.println("30.1 = " +Math.floor(30.1));
     }
}
```