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CORE JAVA CHEATSHEET

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Java Programming

Java is a high level, general purpose programming language that produces software for multiple platforms. It was developed by James Gosling in 1991 and released by Sun Microsystems in 1996 and is currently owned by Oracle.

Primitive Data Types

Type	Size	Range
byte	8	-128..127
short	16	-32,768..32,767
int	32	-2,147,483,648..2,147,483,647
long	64	9,223,372,036,854,775,808..9,223..
float	32	3.4e-0.38..3.4e+0.38
double	64	1.7e-308..1.7e+308
char	16	Complete Unicode Character Set
Boolean	1	True, False

Java Operators

Type	Operators
Arithmetic	+, – , *, ? , %
Assignment	=, +=, -=, *=, /=, %=, &=, ^=, |=, <<=, >>=, >>>=
Bitwise	^, &, |
Logical	&&, ||
Relational	<, >, <=, >=, ==, !=
Shift	<<, >>, >>>
Ternary	? :
Unary	++x, –x, x++, x–, +x, –x, !, ~

Java Variables

```
{public|private} [static] type name [= expression|value];
```

Java Methods

```
{public|private} [static] {type | void} name(arg1, ..., argN ){statements}
```

Data Type Conversion

```
// Widening (byte<short<int<long<float<double)
int i = 10; //int--> long
long l = i; //automatic type conversion
// Narrowing
double d = 10.02;
long l = (long)d; //explicit type casting
// Numeric values to String
String str = String.valueOf(value);
// String to Numeric values
int i = Integer.parseInt(str);
double d = Double.parseDouble(str);
```

User Input

```
// Using BufferReader
BufferedReader reader = new BufferedReader(new
InputStreamReader(System.in));
String name = reader.readLine();
// Using Scanner
Scanner in = new Scanner(System.in);
String s = in.nextLine();
int a = in.nextInt();
// Using Console
String name = System.console().readLine();
```

Iterative Statements

```
// for loop
for (condition) {expression}

// for each loop
for (int i: someArray) {}

// while loop
while (condition) {expression}

// do while loop
do {expression} while(condition)
```

Fibonacci series

```
for (i = 1; i <= n; ++i)
 {
   System.out.print(t1 + " + ");
   int sum = t1 + t2; t1 = t2;
   t2 = sum;
 }
```

Pyramid Pattern

```
k = 2*n - 2;
for(i=0; i<n; i++)
{
  for(j=0; j<k; j++){System.out.print(" ");}
  k = k - 1;
  for(j=0; j<=i; j++ ){System.out.print("* ");}
  System.out.println();
}
```

Decisive Statements

```
//if statement
if (condition) {expression}

//if-else statement
if (condition) {expression} else {expression}

//switch statement
switch (var) { case 1: expression; break;
default: expression; break; }
```

Prime Number

```
if (n < 2)
 {
   return false;
 }
for (int i=2; i <= n/i; i++)
 {
  if (n%i == 0) return false;
 }
return true;
```

Factorial of a Number

```
int factorial(int n)
{
   if (n == 0)
      {return 1;}
   else
      {
        return(n * factorial(n-1));
      }
}
```

Basic Java Program

```
public class Demo
 {
  public static void main(String[] args)
  {
    System.out.println("Hello from edureka!");
  }
 }
```

Save	className.java
Compile	javac className
Execute	java className

Arrays In Java

1 - Dimensional

```
// Initializing
type[] varName= new type[size];

// Declaring
type[] varName= new type[]{values1, value2,...};
```

Array with Random Variables

```
double[] arr = new double[n];
for (int i=0; i<n; i++)
{a[i] = Math.random();}
```

Maximum value in an Array

```
double max = 0;
for (int i=0; i<arr.length(); i++)
{  if(a[i] > max) max = a[i];  }
```

Reversing an Array

```
for(int i=0; i<(arr.length())/2; i++)
{ double temp = a[i];
  a[i] = a[n-1-i];
  a[n-1-i] = temp; }
```

Multi – Dimensional Arrays

```
// Initializing
datatype[][] varName  =  new dataType[row][col];
// Declaring
datatype[][] varName  =  {{value1, value2....},{value1,
value2....}..};
```

Transposing A Matrix

```
for(i = 0; i < row; i++)
 { for(j = 0; j < column; j++)
  { System.out.print(array[i][j]+" "); }
   System.out.println(" ");
 }
```

Multiplying two Matrices

```
for (i = 0; i < row1; i++)
 { for (j = 0; j < col2; j++)
  { for (k = 0; k < row2; k++)
   { sum = sum + first[i][k]*second[k][j]; }
  multiply[i][j] = sum;
 sum = 0;  } }
```

Java Strings

```
// Creating String using literal
String str1 = "Welcome";

// Creating String using new keyword
String str2 = new String("Edureka");
```

String Methods

```
str1==str2 //compare the address;
String newStr = str1.equals(str2); //compares the values
String newStr = str1.equalsIgnoreCase() //
newStr = str1.length() //calculates length
newStr = str1.charAt(i) //extract i'th character
newStr = str1.toUpperCase() //returns string in ALL CAPS
newStr = str1.toLowerCase() //returns string in ALL LOWERCASE
newStr = str1.replace(oldVal, newVal) //search and replace
newStr = str1.trim() //trims surrounding whitespace
newStr = str1.contains("value"); //Check for the values
newStr = str1.toCharArray(); //Convert into character array
newStr = str1.IsEmpty(); //Check for empty String
newStr = str1.endsWith(); //Checks if string ends with the given suffix
```