First Java Program / Hello World !

```
class hello {

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

Let's understand the above program.

class: To declare classes in Java, class keyword is used.

public: It is an access specifier in java. Public makes this function visible to all.

static: To make a function static we again use a keyword known Static. To implement a static function, we don't have to create an Object of the class. The main () method here is automatically called by Java virtual machine (JVM), without creating any object for classes.

void: It is a return type in java, it indicates this function will not return anything.

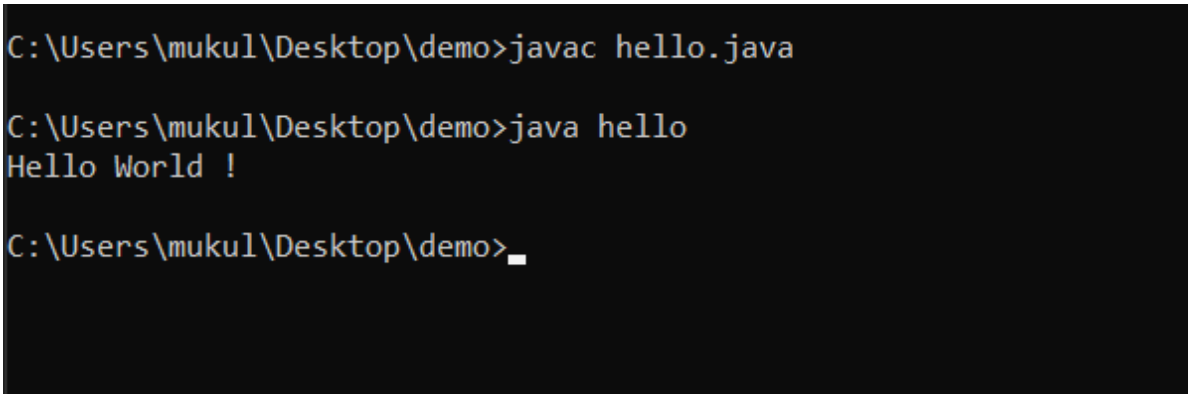
main: main () method is the main and most important method in a program. This method is executed in real, hence all the code must be inside the main () method. If a java class is not having a main () method, it will throw compilation error.

String [] args: This represents an array whose type is String and name is args.

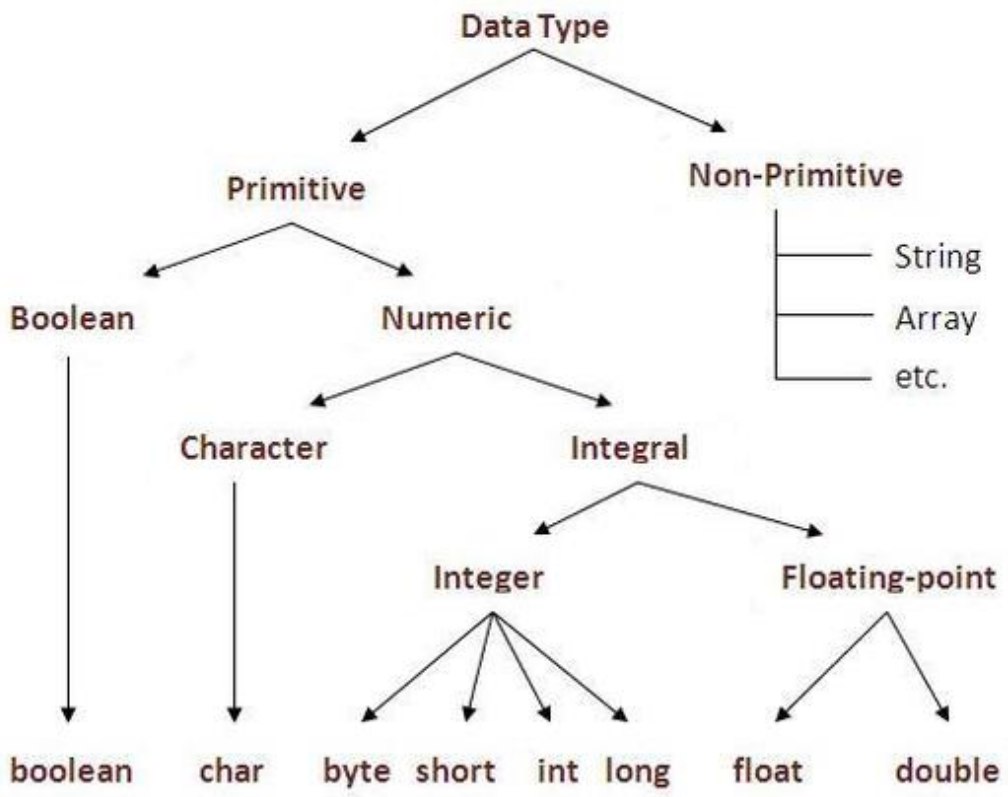
System.out.println: This is used to print on the console like cout in C++ language.

Output

How to compile java program on a windows command prompt



Data Types in Java



Types

Primitive data types - byte, short, int, long, float, double, Boolean and char.

Non-primitive data types - String, Arrays and Classes.

Data Types	Size(bytes)	Default value	Value Range
byte	1	0	-128 to 127
short	2	0	-32,768 to 32,767
int	4	0	2^31 to 2^31 -1
long	8	0L	-2^63 to 2^63 -1
char	2	'\u0000'	'\u0000' (or 0) to '\uffff'
float	4	0.0f	unlimited
double	8	0.0d	unlimited
Boolean	1	false	True/false value are stored

Example

```
class datatypes {

  public static void main(String[] args) {
    System.out.println("Data types are: ");
    short a = 150;
    System.out.println(a);

    long b = -652847131326L;
    System.out.println(b);

    Double c = -859612567.9d;
    System.out.println(c);

    float d = 12.98f;
    System.out.println(d);

    boolean e = true;
    System.out.println(e);

    char ch = 'A';
```

```
    System.out.println(ch);
  }
}
```

Output

```
PS C:\Users\mukul\Desktop\demo> cd "c:\Users\mukul\Desktop\demo\" ; if ($?) { javac datatypes.java } ; if ($?) { java datatypes }
Data types are:
150
-652847131326
-8.596125679E8
12.98
true
A
PS C:\Users\mukul\Desktop\demo>
```

Literals in Java

Literals define the fixed value that is assigned to some variable in a program

`Int num = 10;` {here 10 is an integer literal}

Integer literals are those literals assigned to variable of data type byte, short, int, long etc.

`char ch = 'A';` {here A is a char literal}

`float num = 12.2f;` {here 12.2 is a float literal}

Variable in java

A variable furnishes us with named capacity that our program can execute. Each variable in Java has a specific type, which decides the size and format of the variable's memory; the range of values that can be put away inside that memory; and the arrangement of activities that can be applied to the variable.

Types of variable:

- **Local variable** - Those variables which are declared inside the body of the method is called local variable.

- **Static variable** – Those variables which are declared inside the class but outside the body of the method, is called instance variable. These are not declared as static.
- **Instance variable** - Those variables which is declared as static is called static variable. They cannot be local.

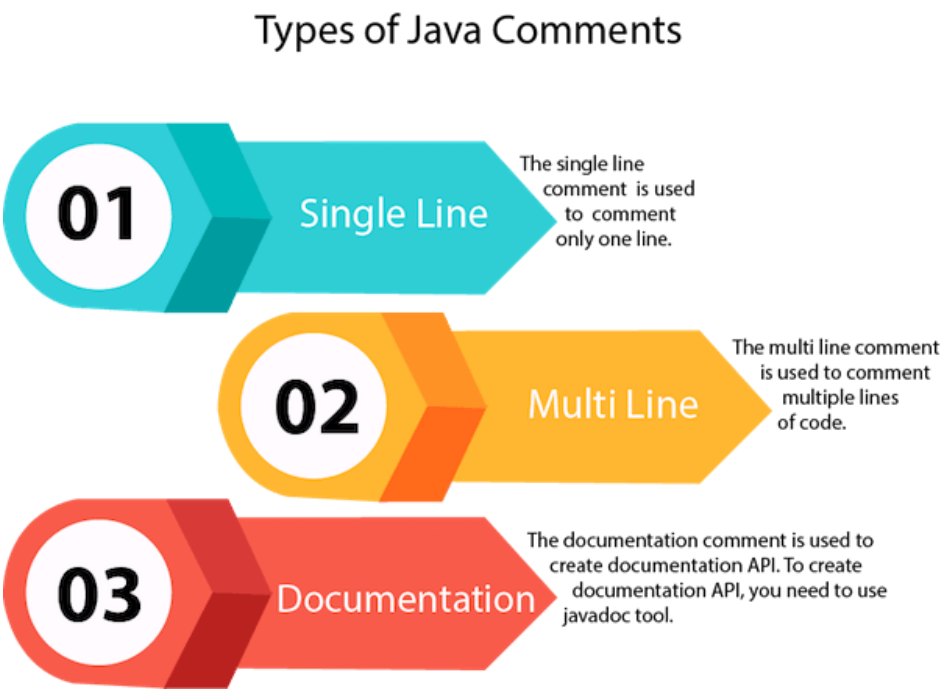
Example

```
class varaible{
  public static void main(String[] args) {
    int a=50;//instance variable

    static int b=100;//static variable

      void function()
      {
      int c=90;//local variable
      }
   }
  }
```

Java Comments



Single line comment – It is used to comment a single line only.

```
class comment{
  public static void main(String[] args) {
  System.out.println("Hello World ");
  // this is single in comment
  }
}
```

Multi line comment – It is used to comment multiple lines .

```
class comment{
  public static void main(String[] args) {
  System.out.println("Hello World ");
  /*
  this is multi
  line comment
  */
  }
}
```

Documentation comment – It is used to create documentation API.

```
class comment{
  public static void main(String[] args) {
  System.out.println("Hello World ");
/** this is documentation comment */
  }
}
```

Image reference:

https://qph.fs.quoracdn.net/main-qimg-06bd3547a13cfdf8feea8da91d7b8e28

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