First Java program - Input/Output, Debugging and Datatypes (DataTypes)

→ Create File as : Main.java ∴ It should have class Main

→ Convention: whatever we write class first letter should captial letter.

→ If name of file is Main.java the name of the class should main and public class.

public: Access Modifier (It means class can be accessed from anywhere)

Main.java.

```
public class Main {

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

}
```

To compile: javac Main.java
It will create bytecode.

To run: java Main

* public: Access Modifier
Class: Name group of properties and function
main(method: Entry point of java program
public (main method): It should be public without calling main how program will run. i.e why we should make it available to execute from anywhere
static: main is entry point. for running class we need obj. if obj is not present how you run.
- we have to execute without creating object bec2 it is first thing will run i.e why static

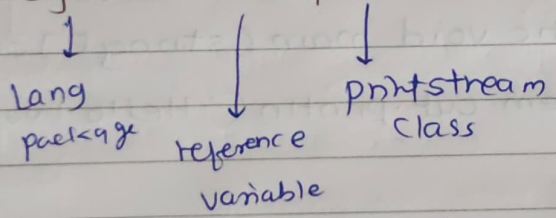
void - It is return type of main() method.

String[] args : command line Args
(Arguments given from command line / terminal)

To find path of javac:
command: where javac

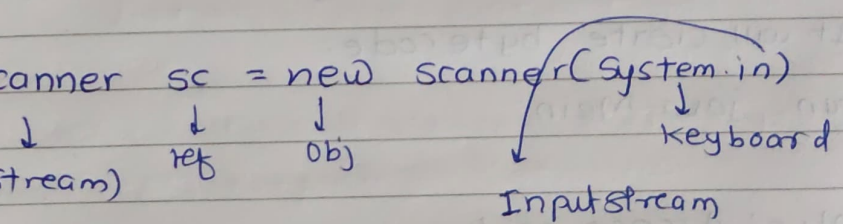
⇒ public class will be the only class name of file (be the)

what is System.out.println( ); (std out stream) (command Line) Laptop



*How we can take inputs in java?

Scanner sc = new Scanner(System.in)



* Primitive data Types:

It is nothing but it is the data type we can't break even further.

int rollno = 133;

String name = "Sachin"; // Non-primitive

we can break "Sachin" in individual character.

Datatypes:

byte (1)
short (2)
int (4)
long (8)
→ integral values → default

float (4)
double (8)
→ floating values (Decimal values) → default

char (2)
boolean (1) → depend on machine

All datatypes are having their classes also i.e Wrapper class it given additional functionality.

ex:- Integer mo = 133;

* Comments in Java
"//" : single line
/* */ : multiple line comments.

int a = 10;
↓ ↕ ↓ litreal
data type identifier/variable

int a = 234_000_000; ✓

next() : only one word
nextLine() : entire line
nextInt() : Integer

To take character as input?

1) Scanner sc = new Scanner(System.in);
   char ch = sc.next.charAt(0);

* Casting and Conversion

(narrowing) ↕ (widening)

Automatic (type should be compatable)

Ex: ~~float~~ ~~num~~ = ~~10;~~ ✓

```
int num=10;
float f=num;
```

Destination type should be greater than this.

```
int num1 = (int) 67.5f;
```

* Automatic type promotion in expression

```
byte b=50;
b= b*20; error CE: incompatable types
```

it will promote to int

```
byte b1=20;
byte b2=30;
int ans = b1+b2; ✓
```

* Java working on UNICODE

Rule of promotion by default:

1) All byte, short, char value are promoted to int
2) If one of the operation in long then entire expression will be long.
3) If one of double is present then it will be promoted double.