Session Agenda

- Discussion about Beginner module
- Interesting things about computer
- Basic codes in JAVA
- Quizzes
- Dashboard walkthrough

Beginner Module Description

1. Beginner: Introduction to Beginner Module
2. Beginner: Output & Basic Data Types
3. Beginner: Data Types
4. Beginner: Data Types 2 + Reading Inputs
5. Beginner: Operators
6. Beginner: If-Else 1
7. Beginner: If-Else 2
8. Beginner Contest 1: Data Types & Operators
9. Beginner: Loop - 1
10. Beginner: Loop - 2
11. Beginner: Patterns 1
12. Beginner: Patterns 2 & Introduction to Strings
13. Beginner: Functions - 1
14. Beginner: Functions - 2
15. Beginner: Maths Basics & Calculate Iterations
16. Beginner: 1D Array - 1
17. Beginner Contest 2: If-Else, Loops & Functions
18. Beginner: 1D Array - 2
19. Beginner: 2D Array - 1
20. Beginner: 2D Array - 2
21. Beginner: Problems on Arrays
22. Beginner: String Implementation
23. Beginner Contest 3: Full Syllabus

Why computer is dumb?

Scenario

We ask our sibling and computer to play ***Pushpa*** movie.

Sibling

- Can play a movie
- Does not need any instructions

Computer

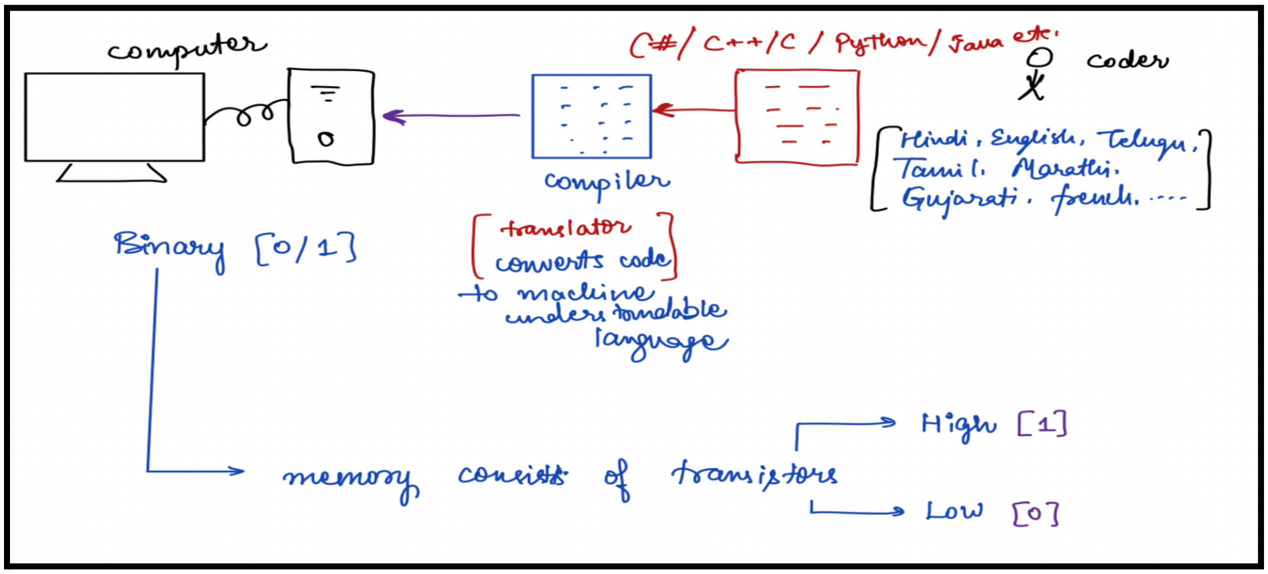
- Needs step by step instructions in detailed manner
- Hence, computer is dumb.

Need of programming languages

Scenario: The coder is trying to communicate with the computer.

- Examples of all languages they we know - Hindi, English, Telugu, Tamil, Marathi, Punjabi, Kannada, etc.
- Computer cannot understand these languages. It can only understand 0s and 1s.
- Since, we cannot learn to write instructions in binary language. We have learned programming languages like JAVA, C++, C#, Python, etc.
- Now, we need a translator to translate our instructions. So, computer can understand the instructions.
- Compiler helps us convert the code into machine understandable language.

Diagram to elaborate this:


computer
C#/ C++/C / Python/ Java etc.
coder
[Hindi, English, Telugu, Tamil, Marathi, Gujarati, french, ...]
compiler
[translator converts code] to machine understandable language
Binary [0/1]
memory consists of transistors
High [1]
Low [0]

IDE

Integrated Development Environment :

- IDE - tool for developers for software editing, building, testing, and packaging in an easy-to-use application,
- Since, we will not be doing these complicated things right now. We do not need any software installation required

We will be using online ide throughout this module.
Scaler's Online IDE: https://www.scaler.com/topics/java/online-java-compiler/

Importance of Syntax

I love to cook.

We can understand the meaning of this sentence.

I garden know don't.

We cannot understand the meaning of this sentence.

The reason being the grammar is wrong.
Grammar : Rules of writing English.

Similarly, Rules of writing code **: Syntax**

Now, let us learn some rules and start writing our very first code.

Basic codes

Code:

```
public class Main {

  public static void main(String[] args) {

      System.out.print(100)

  }

}
```

The code which is already written, we can just ignore all those words. We will be learning about them in the upcoming sessions.

To get output in JAVA, we use:

`System.out.print(100)`

Output:

```
[CompilationError] Your code was terminated due to compilation error

Main.java:4: error: ';' expected


             System.out.print(100)
```

Rule 1 : Every statement should end with a semi-colon(;)

Correct the code and then run again.

```
System.out.print(100);
```

Output:

```
100
```

Rule 2 : JAVA is Case Sensitive.

We can try one more example.

```
system.out.print(5000);
```

Output

```
[CompilationError] Your code was terminated due to compilation error

Main.java:4: error: package system does not exist


            system.out.print(5000);
```

- We can observe that something is wrong with “system” and see the difference between the two statements.

- The only difference is that S is lowercase here.

Correct Method:

```
System.out.print(5000);
```

Output

```
5000
```

Rule 3 : In order to print text we use double quotes (" ")

Printing text in Output

```
System.out.print(Priyanshi);
```

On running it, we will get an error.

Correct Way: `System.out.print("Priyanshi");`

Rule 4 : () , {}, “ ” → These All Should Be in Pairs

On removing one bracket from the code, it gives error.

```
class Main {

   public static void main(String args[]) {

       // Your code goes here



}
```

Output

```
[CompilationError] Your code was terminated due to compilation error

Main.java:error: reached end of file while parsing



}
```

Rule 5 : For Comments, Use // And /* ... */

Comments -> Statements which we want our compiler to ignore. Comments are of two types :
1. Single Line Comments : To write a single line comment just add two forward slashes (//) in front of the statement.

```
// System.out.print("HI");

// This is a single line comment.
```

2. Multi Line Comments : In order to comment out multiple lines together, we add /* at the beginning and then */ to close the comment.

```
/*

System.out.print("Hello");

This is a multi line comment.

*/
```

Rule 6 : print() and println()

Let’s try to print something like this:
Hello Guys!!
Welcome to Scaler!

```
System.out.print(“Hello Guys!!”);
```

```
System.out.print(“Welcome to Scaler!”);
```

Output:

```
Hello Guys!!Welcome to Scaler!
```

This is not giving us the correct output.

Introduce : **System.out.println();**

```
System.out.println(“Hello Guys!!”);
```

```
System.out.println(“Welcome to Scaler!”);
```

Output:

```
Hello Guys!!
```

```
Welcome to Scaler!
```

Rule 6

print -> Just type the output
println -> Type the output and press Enter[cursor goes to next line]

Summary

1. end statements with a **semicolon (;)**
2. JAVA is **case sensitive.** -> System, system are considered different
3. In order to print text, we use **double quotes (" ")**
4. {}, (), " " --> All of these are in pairs.
5. Comments →
    - **Single-line comments** start with two forward slashes (//). Any text between // and the end of the line is ignored by Java (will not be executed).
    - **Multi-line comments** start with /* and ends with /*. Any text between* / and */ will be ignored by Java.
6. **System.out.print();** → Just type the output
7. **System.out.println();** → Just type the output and press Enter [cursor moves to the next line]