

### 3) Stages of the Java Program

→ To execute the Java Program we need to follow 4 different stages.

1) Creation of the Java Program

2) Save the Java Program

3) Compilation

4) Execution

1) Creation of the Java Program

→ To create any Java Program we have to use one platform called as Notepad.

```
class A
{
}
}
```

→ Notepad

2) Save the Java Program

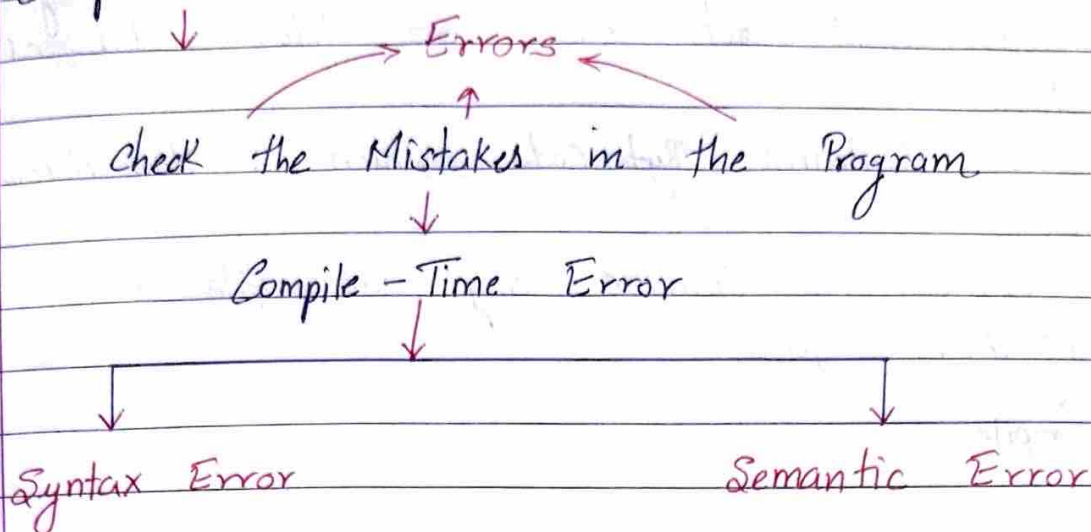
→ To Save the Java Program we have to follow the Syntax.

Eg: → filename.java

A.java

Anas.java

### 3) Compilation



a) In compilation stage we will check for the errors in the Program.

b) If there is any error present in this stage then it is known as Compile-Time Error.

x1) Syntax Error

x2) Semantic Error

c) Compile-Time Error has 2 Types.

1) Syntax Error

2) Semantic Error

1) Syntax Error

→ If the Program is not following the Proper Syntax or Rules then we will get Syntax Error.

$$\text{Eg!} \rightarrow \begin{array}{l} 3+2=5 \\ 1+1=2 \end{array}$$

$$\times 35+5 = \text{Syntax Error}$$

2) Semantic Error

→ If the data is incorrect according to the operation then we will get Semantic Error.

$$\text{Eg!} \rightarrow \begin{array}{l} 3+2=5 \\ 2+2=4 \end{array}$$

$$2 + \text{Java} = \text{Semantic Error}$$

Data



d) If there is no error present in this stage then we will get one more file called as

.class file

e) .class file contains Byte code which is Non-Human Readable.

f) The syntax to compile any Java file is

javac filename.java

↓  
compile

4) Execution



Errors ←

check the mistakes in the Program  
Run-Time Error

Memory Mistake

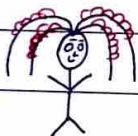
Exception



Pushpa



8 GB



Srivalli



2 GB

In sufficient storage

$\frac{10}{0}$  = Arithmetic Exception

- 1) In this stage we will check the error in the Program one more time before getting the output.
- 2) If there is any error Present in this stage then it is Known as Run-Time Error.
- 3) Run-Time Error has Two Types.
  - 1) Memory Mistakes
  - 2) Exception
- 1) Memory Mistakes means Insufficient memory.
  - 2) Anything divide by zero will give exception.
- 4) If there is no errors in this stage then we will get output.
- 5) The command to execute the Java file is java classname.