ESCAPE SEQUENCES IN JAVA
(EXAM-RELATED NOTES)
IMPORTANT FOR MCQS

What are Escape Sequences in Java?
Escape sequences are **special character combinations** beginning with a backslash (\) used inside **String literals** and **character literals** to represent characters that:

- cannot be typed directly, or
- have special meanings (new line, tab, quotes, etc.)

List of Escape Sequences in Java

Escape Sequence	Name	Purpose
\n	New Line	Moves the cursor to the next line
\t	Horizontal Tab	Inserts a tab space
\b	Backspace	Deletes the previous character
\r	Carriage Return	Moves the cursor to the start of the same line
\f	Form Feed	Moves output to the next page
\'	Single Quote	Inserts ' in character/string
\"	Double Quote	Inserts " in string
\\	Backslash	Inserts \
\0	Null Character	Represents null (rarely used)

1. \n — New Line
Purpose
Moves the cursor to the **next line**.
Example Program
```
class NewLineDemo {
    public static void main(String[] args) {
        System.out.println("Hello\nWorld");
    }
}
```
Output
```
Hello
World
```

2. \t — Horizontal Tab
Purpose
Inserts a **tab space** (used for alignment).
Example Program
```
class TabDemo {
    public static void main(String[] args) {
        System.out.println("Name\tMarks");
        System.out.println("Ravi\t85");
    }
}
```
Output
```
Name    Marks
Ravi    85
```

3. \b — Backspace

Purpose

Deletes the **previous character**.

Example Program

```
class BackspaceDemo {
    public static void main(String[] args) {
        System.out.println("AB\bC");
    }
}
```

Output

AC

\b removes B and prints C in place of that.

4. \r — Carriage Return

Purpose

Moves the cursor to the **beginning of the same line**, overwriting text.

Example Program

```
class CarriageReturnDemo {
    public static void main(String[] args) {
        System.out.print("Hello World");
        System.out.print("\rJava");
    }
}
```

Output

Javao World

"Java" overwrites the first 4 characters from "Hello".

5. \f — Form Feed

Purpose

Moves output to the **next page** (legacy printers).

Example Program

```
class FormFeedDemo {
    public static void main(String[] args) {
        System.out.print("Page1\fPage2");
    }
}
```

Output

- May appear as:

Page1Page2

- Or page break (depends on environment)

Mostly ignored in modern consoles (important exam note).

6. \' — Single Quote

Purpose

Used to insert a **single quote character**.

Example Program

```
class SingleQuoteDemo {
    public static void main(String[] args) {
        System.out.println("It\'s a sunny day");
    }
}
```

Output

It's a sunny day

7. \" — Double Quote

Purpose

Used to include **double quotes** inside a string.

Example Program

```
class DoubleQuoteDemo {
    public static void main(String[] args) {
        System.out.println("He said, \"Java is easy\"");
    }
}
```

Output

```
He said, "Java is easy"
```

8. \\ — Backslash

Purpose

Used to print a **single backslash (\)**.

Example Program

```
class BackslashDemo {
    public static void main(String[] args) {
        System.out.println("C:\\Java\\Programs");
    }
}
```

Output

```
C:\Java\Programs
```

9. \0 — Null Character

Purpose

Represents the **null character** (ASCII 0).

Example Program

```
class NullCharDemo {
    public static void main(String[] args) {
        char ch = '\0';
        System.out.println(ch);
    }
}
```

Output (blank / no visible output)

One example program combining multiple escape sequences (\n, \t, \b, \\)

```
class EscapeSequenceDemo {
    public static void main(String[] args) {
        System.out.println("A\nB");
        System.out.println("A\tB");
        System.out.println("AB\bC");
        System.out.println("He said, \"Hello\"");
        System.out.println("Path: C:\\Java");
    }
}
```

Output

```
A
B
A    B
AC
He said, "Hello"
Path: C:\Java
```