6. (b)   StringBuilder

1) ⇒ StringBuilder is a mutable sequence of characters, It is part of java.lang and is used to build and modify Strings without creating a new objects every time you can change the string.

• When to use :

(i) When you're appending or modifying strings many time.
(ii) When performance matters, especially in loops.
(iii) When working with logs, JSON, XML, or query building.

2)   Creating a String Builder Object.

(i) Empty StringBuilder :
       StringBuilder sb = new StringBuilder();
   ⇒ creates an empty builder with default capacity (16 characters).

(ii) With inital String :
       StringBuilder sb = new StringBuilder("Hello");
   ⇒ Starts with "Hello" as the intial content.

(iii) with initial capcity :
       StringBuilder sb = new StringBuilder (100);
   ⇒ Reserve space for 100 characters(performance optimization for large strings).

3. StringBuilder Methods

Method	Description	Example
• append("text")	Add to the end	sb.append("Java")
• insert(2,"Cool")	Insert at Index 2	Sb.insert(2,"Cool")
• delete(1,4)	Remove char from index 1 to 3	Sb.delete(1,4)
• replace(0,2,"Hi")	Replace index 0-1 with "Hi"	Sb.replace(0,2,"Hi")
• reverse()	Reverse entire string	Sb.reverse()
• setCharAt(0,'x')	Replace character at index 0	Sb.setCharAt(0, 'x')
• toString()	Convert to regular string	String s = Sb.toString()