📌 Understanding String Concatenation in JavaScript

String concatenation is the process of **joining two or more strings together** using the + operator.

◆ Basic String Concatenation

alert("Thanks for your input!");

OR

var message = "Thanks for your input!";
alert(message);

◆ Concatenating Variables and Strings

If a user enters their name (userName), you can personalize a message:

var userName = "Susan";
alert("Thanks, " + userName + "!");

✓ The + operator **joins the strings**.
✓ **Make sure to include spaces inside the strings** to avoid "Thanks,Susan!" instead of
"Thanks, Susan!".

◆ Concatenating Multiple Variables

var message = "Thanks, ";
var banger = "!";
alert(message + userName + banger);

✓ This approach **separates different parts** of the message for better readability.

◆ Assigning a Concatenation to a Variable

var message = "Thanks, ";
var userName = "Susan";
var banger = "!";

```
var customMess = message + userName + banger;
alert(customMess);
```

✓ The value of customMess becomes "Thanks, Susan!".

◆ Concatenating Numbers as Strings

If numbers are in quotes, JavaScript **treats them as strings** and joins them instead of adding:

```
alert("2" + "2"); // Output: "22"
```

✓ Instead of adding 2 + 2 = 4, JavaScript **joins** the "2" and "2" into "22".

◆ Mixing Strings and Numbers

```
alert("2 plus 2 equals " + 2 + 2); // Output: "2 plus 2 equals 22"
```

⏲ Why?

- "2 plus 2 equals " is a string.
- The + operator first **concatenates the string with 2**, resulting in "2 plus 2 equals 2".
- Then, another + 2 is added **as a string**, so the final result is "2 plus 2 equals 22".

✓ **To fix this and get "2 plus 2 equals 4"**, use parentheses:

```
alert("2 plus 2 equals " + (2 + 2)); // Output: "2 plus 2 equals 4"
```

💡 Quick Summary

✓ Use the + operator to **concatenate** strings.
✓ **Include spaces** inside strings to maintain formatting.
✓ **Numbers in quotes act like strings** and are **concatenated instead of added**.
✓ **Use parentheses** () to perform arithmetic inside a string.