# CS23403 FULL STACK TECHNOLOGIES

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***Instructions : Create a FILE followed your last four digit register number (I.e INDEX5001.html similar for css, js)***

1. ***Write a program that welcome you using window alert and console***

2. ***Write a program to display different data type using console***

3. ***Write a program that display different date type using console***

4. ***Display Current Time***

   ***Write a program that displays:***

   ***a) Current time in format HH:MM:SS AM/PM using alert()***

   ***b) Current date in format MM/DD/YYYY using console.log()***

   ***Expected Output:***

   ***Alert box shows: "Current time: 03:45:30 PM"***

   ***Console shows: "Current date: 01/27/2025"***

5. ***Temperature Converter***

   ***Create a program that:***
   ***a) Prompts user to enter temperature in Celsius***
   ***b) Converts it to Fahrenheit using formula: (C × 9/5) + 32***
   ***c) Displays the original and converted values***
   ***d) Shows the data type of input and result***

   ***Input: 37.5***
   ***Expected Output:***
   ***"37.5°C is equal to 99.5°F"***

6. ***Circle Calculator***

   ***Create a circle calculator that:***
   ***a) Takes radius as input***
   ***b) Calculates area ($\pi r^2$) and circumference ($2\pi r$)***
   ***c) Uses constant for PI (3.14159)***
   ***d) Rounds results to 2 decimal places***

   ***Input radius: 5***

***Expected Output:***
***"Area: 78.54"***
***"Circumference: 31.42"***

## 7. Counter Application

***Create a counter application with these requirements:***
***a) Display initial count of 0***
***b) Three buttons: Increase(+), Decrease(-), Reset***
***c) Count can go negative***
***d) Display should update immediately after button click***

## 8. Math Functions

***Create a program that demonstrates Math functions using number 3.7:***
***Show the following operations and their results:***
***a) Round to nearest integer***
***b) Floor value***
***c) Ceiling value***
***d) Remove decimal (truncate)***
***e) Power of 2***
***f) Square root***
***g) Sine value***
***h) Sign of number***

***Output:***
***"Original number: 3.7"***
***"Round: 4"***
***"Floor: 3"***
***"Ceil: 4"***
***"Trunc: 3"***
***"Power of 2: 13.69"***
***"Square root: 1.92"***
***"Sine: -0.53"***
***"Sign: 1"***

## 9. Random Number Generator

***Create a function that generates random numbers***
***a) Function takes min and max range as parameters***
***b) Returns a random integer within that range (inclusive)***
***c) Test with ranges: 1-100, 1-10, and 50-60***

*getRandomNumber(1, 100) → Should return number between 1 and 100*
*getRandomNumber(1, 10) → Should return number between 1 and 10*
*getRandomNumber(50, 60) → Should return number between 50 and 60*

## *10. Number Guessing Game*

***Create a number guessing game that:***

***a) Generates random number between 1-10***

***b) Keeps track of number of attempts***

***c) Provides "Too high" or "Too low" hints***

***d) Stops when correct number is guessed***

***Sample output:***

***Target number: 7***

***User guesses: 5 → "Too low!"***

***9 → "Too high!"***

***7 → "Correct! You took 3 attempts"***

## *11. Demonstrate different type conversions:*

***a) Convert string "123.45" to number, integer, and float***

***b) Convert "true" to boolean***

***c) Convert number 123 to string***

***d) Show type before and after conversion***

***Sample Output:***

***Original: "123.45" (string)***

***To number: 123.45 (number)***

***To integer: 123 (number)***

***To float: 123.45 (number)***

***Original: "true" (string)***

***To boolean: true (boolean)***

***Original: 123 (number)***

***To string: "123" (string)***

## *12. Age Checker (use == as well as ===)*

***Create an age verification program using ternary operator as well as IF statement:***

***a) Prompts for user's age***
***b) Uses ternary operator to check if adult (>=18)***
***c) Displays appropriate message***
***d) Handles invalid inputs***

***Sample output:***
***Input: 20 → "You are an adult"***
***Input: 15 → "You are a minor"***
***Input: -5 → "Please enter a valid age"***
***Input: abc → "Please enter a valid number"***