



## Sheet 2

**Objective:** upon successful completion of this sheet, students should be able to

- Use different output statements,
- Employ control statements,
- Create simple functions, and
- Handle the interaction between HTML and TypeScript.

- (1) Write a TypeScript program to create a simple calculator. A user should input two operand values using text fields. The program allows the following operations: addition, subtraction, multiplication, division, and remainder. These operations should be declared as functions within an interface “MathOperations”. An object implementing that interface is used to perform the operations. When the user clicks the “Calculate” button, the program should display the results of all operations in a tabular format. The header row should be distinguished from others using colors. If the second operand is zero, an error message should be shown next to the text field indicating that zero is not allowed.
- (2) Write a TypeScript program that accepts an input for a temperature in Celsius using a text field. The program provides options, represented by checkboxes, to convert the temperature to Fahrenheit, Kelvin, or both. When the user clicks the “Convert” button, the program should display the converted temperature(s) according to the user choice.
- (3) Write a TypeScript program that creates a pizza ordering form, as shown in the provided figure. When the user clicks the “Submit” button, the program should store the entered data in an interface object where each member represents an item in the form. If any of the required fields are left blank, an error message in red should appear next to the respective control element. Otherwise, the stored object data should be shown in an alert message.

### **Pizza Order Form**

Name:

Size:

Toppings:

☐ Pepperoni

☐ Mushrooms

☐ Sausage

- (4) Write a TypeScript program to create a form for finding the factors of a number, as illustrated in the provided figures. If the number of factors is even, display the factors in a tabular format with a blue background. Otherwise, display them in a green background. Also, display a message in the console indicating the total number of factors.

### **Factor Finder**

Enter a number:

Factors
1
2
4
8

### **Factor Finder**

Enter a number:

Factors
1
3
9