

## Week 12:

Learning Materials: Templates, Exceptions

### Task 1:

Create a class **MathOperation** as a **generic class**, so that **MathOperation** can calculate any kind of numbers. In `main()`, create at least **two** different types, and perform the following calculations.

Some important member functions of **MathOperation**.

**add**(object1, object2): return the summation of two numbers

**divide**(object1, object2): divide object1 by object2.

**sqrt**(object1): return the square root of the number.

### Task 2:

Create a function called **arrayMultiplication**(array1, array2) that takes two arrays, multiplies them, and finally returns the result. Make this function into a template so that it can work with an array of any numerical type. Write a `main()` program that applies this function to arrays of various types.

### Task 3:

Handle the exception for appropriate functions. For example, **divide(5,0)** should throw an exception: Division by zero is not allowed. The catch block should display the exception using an error message.