LIBRARY NUMERIC\_STD, PART I

# Objectives

* To become familiar with the implementation of the *numeric\_std* library in a VHDL system, by developing a simple signed calculator.

# Lab work

Design in VHDL a signed calculator with the following inputs and outputs:

* Inputs
  + Clock
  + Number A
  + Number B
  + Operation selector
  + Display selector
* Outputs
  + Sign bit
  + Operation LEDs
  + 7-segment display data
  + 7-segment display enable

For your design, consider the following restrictions

* Only numeric\_std library is allowed
* The calculator must carry out three basic arithmetic operations: addition, subtraction, and multiplication
* Numbers A and B are represented using 4 slide switches from the Nexys 4 DDR board
* Negative numbers have to be introduced using two’s complement representation
* Three more switches are used as operation selectors (OS) as follows:
  + Addition if OS = B“000”
  + Subtraction if OS = B”010”
  + Multiplication if OS = B”100”

# Report

Turn in a technical report including the following:

* Links to GitHub of Activities of part I and II
* Links to YouTube with demo videos of your working code
* Screenshots of the Terminal showing the output of your programs
* Conclusions