

## Handling Exception -- Number Verification Lab (100 points each)

**Part 1: Description:** Write a short program that reads a number from the user and stores the number as a string of characters. Convert this string to an integer. Before conversion, test for a *NonNumber exception*, which occurs if one or more of the characters is not a digit. Your program should allow negative numbers.

Please download a template **numbervifier.cpp** from blackboard and name your submission **ABC\_numbervifier.cpp**.

### Sample Output

```
Please enter a number (end-of-file to terminate): 4
The number entered was: 4

Please enter a number (end-of-file to terminate): 28
The number entered was: 28

Please enter a number (end-of-file to terminate): -257
The number entered was: -257

Please enter a number (end-of-file to terminate): a23
INVALID INPUT: non-integer detected

Please enter a number (end-of-file to terminate): 34k3
INVALID INPUT: non-integer detected

Please enter a number (end-of-file to terminate): -3413-3
INVALID INPUT: non-integer detected

Please enter a number (end-of-file to terminate): -4-8
INVALID INPUT: non-integer detected

Please enter a number (end-of-file to terminate): AZ
```

Tips:

- 1) To determine whether the input is a valid number, the program checks for any non-digit character in the input string. The only non-digit character is allowed is a minus sign (-) at the beginning of the string.
- 2) Make sure that any code that could throw an exception is enclosed within a try statement with a matching catch handler. ➔ Must create an exception class, call it **ABC\_NonNumber**; where ABC is your initials. You may put this in the same cpp file.

**Part 2:** Modified your program and create an exception class called **ABC\_Overflow** for detecting when the input has more than 10 digits. You may put this in the same cpp file.

```
Please enter a number (end-of-file to terminate): 44
The number entered was: 44

Please enter a number (end-of-file to terminate): -44
The number entered was: -44

Please enter a number (end-of-file to terminate): p25
INVALID INPUT: non-integer detected

Please enter a number (end-of-file to terminate): 123456789
The number entered was: 123456789

Please enter a number (end-of-file to terminate): 12345678901
INVALID INPUT: overflow detected

Please enter a number (end-of-file to terminate): AZ
```

Submit on a file on Blackboard.