

## EE5301 Fall 2023 Mini Project #0 – Part A

Due: September 14 before class.

This mini-project has two parts. Part A deals with parsing an input file and populating a simple data structure. Part B covers Standard Template Library (STL) and basic programs that use objects from the library.

Input file `sample_NLDM_lib` is provided. Your job is to parse this file and get the following information:

- The number of gate types in the library
- For each gate type,
  - o Its name (e.g., "NAND2\_X1")
  - o The 7x7 delay table stored in a 7x7 array specific to that gate type

Note that your program should create an array of *at least* the size `<numberOfGates>`, and each entry should have two fields: `gateName` and the 2-dimensional array `delayTable`. To make this assignment simple, you can assume that the maximum number of gate types is 100 (in other words, you do not need to worry about dynamic memory allocation at this stage, and do not need to create an array that is *exactly* of size `<numberOfGates>`).

Your solution should be able to handle similar library files with the same format as `sample_NLDM_lib`. The number of gates, or the exact sequence of whitespaces or line separations (separated by the `'\'` character) might be different, but you can assume that the delay table is always 7x7 long. **Your program needs to truly parse the values, and store the 7x7 values in a 7x7 array of doubles. You need to access these values in later assignments.**

Your program should expect one command line argument, which is the library file name (e.g., `sample_NLDM_lib`). Your program should create an output file called `<your internet ID>.txt`. For example if your ID is `smith023`, then your program should create a file `smith023.txt`. In that file, you need to write the following information:

`<Number of cells types>`

`<cell 1 name>`

`Delay11, delay12, ... , delay17;`

`Delay21, delay 22, ..., delay27;`

`...`

`Delay71, delay72, ..., delay77;`

`<cell2 name>`

`Delay11, delay12, ... , delay17;`

`...`