

# Lab 05 - Memory I/O

**Direction: Submit typed work in the Labs directory of your github repository and/or as an attachment on Google classroom under the Lab05 assessment. All submission should have their appropriate extensions.**

Complete the following objectives

1. Copy the link

<https://forms.gle/t3z5hToEgHN9G2M78>

to your browser, and complete the form.

2. Write a complete program that defines the function `MemoryIO()` whose header is

```
void MemoryIO(bool bus[],string memory[])
```

Given that *bus* has a size of 9 such that each group of 3 consecutive elements from position 1 to 9 represents the control line, address line and data line respectively, and *memory* is an array of 3-bit binary strings that has a size of 8, the function either assigns the data line to the element of *memory* whose index is equal to the address line if the control line equals `{false, true, true}`, assigns the element of *memory* whose index is equal to the address line to the data line if the control line equals `{true, false, true}`, or nothing if the control line is equal to anything else. If an assignment is performed, the control line is assigned `{true,true,true}`. For instance, if

```
bus = {true, false, true, false, true, true, true, true, false}
memory = {"000", "001", "010", "011", "100", "101", "110", "111"}
```

(address line is equal to 3) then after the call to `MemoryIO`

```
bus = {true, true, true, false, true, true, false, true, true}
memory = {"000", "001", "010", "011", "100", "101", "110", "111"}
```