

CMSC313 Project 2  
(Simple gdb project)  
Due 4/19 11:59pm

The purpose of the project is to debug the `cmsc313_proj2.asm` file using `gdb`, identify and fix the problem and write a report as described below. The submission for the project will be a pdf file.

The project is executing the same logic as project 1: transferring data from `input_buffer` to `x,y,z,o` buffers. There are some bugs introduced in `cmsc313_proj2.asm` that needs to be debugged.

The following are the expected sections of the project report:

1. Introduction: Give a brief description of what the assembly file is doing.
2. Problem Statement: Provide a brief description of the problem. Copy and Paste the output of the program to support your claim.
3. Debug: Give the full list of `gdb` commands that are used in `gdb` session to identify the problem (starting from 'set disassembly-flavor intel'). Among other things, the list should also contain be (a) breakpoints used to go to the 2nd iteration of the loop, (b) `print` command should be used to show that `loop_index` value is 1 and (c) `x` command in `gdb` should show that expected value in memory doesn't match actual value.
4. Proposed Fix: Provide a brief description of how to fix the problem.
5. Results: Show that the fix solves the problem. Include the list of changes made to the assembly file and the correct output.

The input buffer values are defined in `cmsc313_proj2.c` (this information should be used in Section 2):

```
const int data[] = {53, 33, 38, 85, 153, 133, 138, 185, 253, 233, 238, 585, 38, 383, 94, 11};
```

The commands to execute the program and to run `gdb` is as follows (note the extra '-g' option for `gcc`):

#Assembler/Compiler commands:

```
gcc -c cmsc313_proj2.c -o cmsc313_proj2.c.o
nasm -f elf64 -l cmsc313_proj2.lst cmsc313_proj2.asm -o
cmsc313_proj2.o
gcc cmsc313_proj2.c.o cmsc313_proj2.o -g -o cmsc313_proj2
```

#Executing the program:

```
./cmsc313_proj2
```

#Running `gdb`:

```
gdb cmsc313_proj2
```

Details of the `gdb` commands needed are posted in the `gdb` lecture notes. This will be reviewed on 4/3 lecture as well.