ITSC 2181 Introduction to Computer Systems
In-Class Exercise

Module 6 - Unit 2 Exercise 1: Memory Operands and Memory Access Instructions

Recognizing load/store instructions in an assembly program

1. Open https://repl.it/languages/c from a web browser. The left side of the interface is for you to type in your program. The Linux terminal environment is on the right side of the web interface. You can use the virtual machine for this class to do the same thing.

2. Create a file named **`strcpy.c`** file and type in the following content:

```
int strcpy (char x[], char y[])
{
      int i = 0;
      while ((x[i]=y[i])!='\0') { i++;}

      return i;
}
```

3. Explore the RISC-V ISA assembly program for **`strcpy.c`**
   a. Use the Compiler Explorer tool at https://godbolt.org/
   b. Select the "RISC-V (64-bits) gcc (trunk) compiler.
   c. Count the number of load and store instructions (**`ld/sd, lw/sw, lhw/shw, lbu/sbu`**) used.

Submission:

1. Submit your work by writing in the textbox, in *Canvas*.

2. Include the following information:

   a. The total number of load/store instructions
   b. Copy and paste the assembly code produced by the compiler explorer for the program.