

Exercise 1

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Exercise 1 requires you to compile two different C programs, observe the output of the programs, and make minor modifications to each program. You are required to collect and then turn-in the output from the programs according to the instructions below.

Program 1

1. Examine Program1.c and makefile.
2. Build Program1.c using the provided makefile:
 - a. Run the make command: make
3. Execute Program1 in the command line:
 - a. Run the program: ./Program1
 - b. Observe the output
 - c. List the program: cat Program1.c
 - d. List the makefile: cat makefile
 - e. Run the program and redirect the output: ./Program1 > Exercise1_1.txt
4. Execute Program1 in GDB:
 - a. Load the program into the debugger: gdb Program1
 - b. Issue the command: list main
 - c. Issue the command: disassemble main
 - d. Issue the command: disassemble _start
 - e. Copy disassembly from the screen to a file titled Exercise1_2.txt
 - e. Issue the command: run
 - f. Exit gdb: quit
5. Modify Program1.c and change the reason that we love C programming:
 - a. Modify program and specify your reason
 - b. Build the modified program
 - c. Execute Program1
 - d. Observe the output
 - e. Capture the output with: ./Program1 > Exercise1_3.txt
6. Update the program to include a function which returns a value:
 - a. Change the contents of Program1.c to:

```
char *reason()  
{  
    return "fun";  
}
```

```

int main(int argc, char *argv[])
{
    printf("---- CSCV 352 Fall 2021 ----\n\n");

    printf("Hello Students, \n");

    printf("Welcome to the world of C programming!\n");

    printf("We like to program in C because it is %s.\n", reason());

    return 0;
}

```

b. Capture the output with: `./Program1 > Exercise1_4.txt`

Program 2

7. Program 2 converts Fahrenheit to Celsius

- Examine Program2.c and try to understand what the program does
- Build the program using the provided makefile
- Observe output of the program

8. Modify the Fahrenheit to Celsius program to be Fahrenheit to Kelvin

- The formula for f to K is: $\text{Kelvin} = (\text{Fahrenheit} + 459.67) * 5.0 / 9.0$;
- Build the program
- Observe the output of the program
- Capture the output with: `./Program2 > Exercise1_5.txt`

TURN IN

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Exercise1_1.txt
 Exercise1_2.txt
 Exercise1_3.txt
 Exercise1_4.txt
 Exercise1_5.txt