Program Report

Section 1. Project description

Writing the first assembly program which prints “Hello world,” my full name, my favorite video game, my favorite film, my favorite song, and its artist.

Section 2. Project specification

This project requires creating string variables with corresponding information under the program document, assigning a system call operation in the register, assigning a string value to the string address, and calling assigned operation to print out the string value. It also requires assembly programming language formats such as .date, .text, and main section. Also, putting comments with a hash symbol on how this line performs in the assembly programming is crucial. The purpose of this project is to understand basic operations in assembly language. This project helps to learn how to use the QtSpim emulator. The emulator tells us how the operation is assigned in the register and stores the value to the address in memory.

Section 3. Testing methodology

Changing string values ensures the correctness of the program. For example, I changed my favorite movie and video games in the .data section, and it printed out updated my favorite movie and video game. It verifies that my assembly program works properly with a different string value. One of the useful test methods is using a debugger. It allows the user to operate the line step by step. It also helps me familiarize myself with the QtSpim simulator feature for future projects. I must check comments to see whether my notes explain well about the operation of the line.

Section 4. Lessons learned

I learned essential assembly programming rituals, such as how to write a program with a text editor and run it in QtSpim. The file extension is .s for the assembly programming edited in the text editor and runs QtSpim to ensure that the code runs correctly. Data variables are defined in the .data section, and the programmer writes the operation under the .text section with the main. In this section, indentation and comments help readers understand how I intend to write this program. To be sure, I am still not familiar with the process: the program assigns operation in the register, store value to the address, and system calls operation. But I will get used to it more after doing several projects this semester.