CPSC 240: Computer Organization and Assembly Language
Assignment 06, Fall Semester 2025

CWID:_____ Name:_____

Quiz Questions:

From the textbook "X86-64 Assembly Language Programming with Ubuntu," study quiz questions 4 and 5 of Chapter 9. Students do not need to submit answers to the quiz questions as they are found in Appendix D of the textbook.

Programming:

1. Download the "CPSC-240 Assignment06.docx" document.
2. Convert the following C/C++ variable declarations and instructions to x86-64 assembly language to calculate the sum of "1+2+3+…+99" and displays the result in a terminal window. NOTE: variable sizes and program functions should be equivalent to C/C++ instructions.

```
int main(void) {
    Calculates    1+2+3+...+99 and displays the result in a terminal window
    char str1[] = "1+2+3+...+99=";          // use db to declare 8-bit string array
    short sum = 0;                          // use dw to declare 16-bit variable
    char ascii[5] = "0000\n";               // use db to declare 8-bit string array
    register short cx = 1;                  // no need to declare register cx
    for(cx=1; cx<=99; cx++)
            sum += cx;
    ascii = itoa(sum);
    cout << str1 << ascii;
    return 0;
}
```

3. Save the source code to "print.asm", assemble the "print.asm" file, and link the "print.o" file to get the "print" executable file.
4. Run the "print" file to display the conversion results of ascii in Terminal window.
5. Insert source code (print.asm) and simulation results (Terminal window) at the bottom of the document.
6. Save the file in pdf format and submit the pdf file to Canvas before the deadline.

[Insert print.asm source code here]

[Insert print simulation result (Terminal Window) here]

[Insert the simulation result verification here]