CS311: Computer Architecture Laboratory Examination

10th November 2021

Write the following programs in the ToyRISC ISA:

1. Given three numbers, find the largest, and place the result in register x10. [5 marks]

2. Write a program to count the number of positive (>= 0), even numbers in a given list ‘l’. The length of the list is ‘n’ (n > 0). Place the result in register x10. [10 marks]

3. Write a program to place the first ‘n’ numbers of an arithmetic series in the memory (n > 0). The first number is to be placed at address 2 16 − 1, the second at 2 16 − 2, and so on. The first value in the series is given as ‘a’, and the difference between two consecutive elements in the series is given as ‘d’. [10 marks]

Submission Format

- Submit one zipped archive named “`<roll-number>_labexam.zip`”.
- The archive must contain 3 files: greatest.asm, search.asm, and arithmetic.asm. Name your files exactly as mentioned.
- Use the template programs given. You may change the data values for your testing. But do not change the names given to the addresses, for example, a, d and n in arithmetic template.asm. Remember to remove the comment lines.
- Test each individual program using the `test_each` script. Make sure the test passes. You may change values in the input and expected output files for your testing purposes.
- Test your final zip archive using the test zip script. Make sure the test passes.
- Submit the zip archive on Moodle.