Lab04: Advanced Assembly Programming

Due on Thursday 11/14/2024

Required Coding Tasks (20 pts)

TASK1[8pts]: Write a function *square* in RISC-V that takes in an integer *n* and returns its square. If *n* is not positive, the function returns 0. Save your program as task1.s.

Test cases:

(1) n = -15;
(2) n = 200
(3) n = 11

TASK2[8pts]: Write a function *sumSquare* in RISC-V that, when given an integer *n*, returns the summation of all squared odd numbers smaller than or equal to n. If the input, n, is not positive, the function returns 0. That is:

$$sumSquare(n) = n^2 + (n-2)^2 + \ldots + 1^2, \text{ when } n \text{ is an odd number or}$$
$$sumSquare(n) = (n-1)^2 + (n-3)^2 + \ldots + 1^2, \text{ when } n \text{ is an even number.}$$

To code for this problem, you should implement *sumSquare* by calling the function of *square* from task1 as a subroutine.
The program must be compiled by Venus. To print your results, please call *ecall*. Save your program as task2.s.

Test cases:

(4) n = 28
(5) n = -190
(6) n = 17

What to submit:

1. Your source code files **task1.s, task2.s**.
2. A **report** (4 points) with your name, and two screenshots and your observations of the lab.