Report

1. What is the usage of $zero? What happens if you execute addi $zero, $zero, 5 ?

$zero is a special register that always holds the value 0.

Nothing happens since $zero is always 0.

2. How to use the stack to ensure that the value of each register is correctly saved when executing a recursive function?

Some registers (like $t0-$t9 and $a0-$a3) are considered caller-save registers, which means that they are not preserved across function calls.

Before making a recursive call, if your function uses any of these caller-save registers to hold temporary values, you must save their contents onto the stack to ensure they are not overwritten by the recursive call.

3. What was the most challenging part for you in this homework?

The question of Fibonacci requires recursive calculations for Fibonacci(n-1) and Fibonacci(n-2), and it took me a long time to solve it.