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CS 536 - Professor Thomas Reps

Homework 9

Question 1

- Offset for parameters is 8
- Return value in $v0

```
# Push return addr
      sw    $ra, 0($sp)
      subu  $sp, $sp, 4
# Push control link
      sw    $fp, 0($sp)
      subu  $sp, $sp, 4
# Set the fp
      addu  $fp, $sp, 16
# t0 = a, t1 = b
      lw    $t0, 0($fp)
      lw    $t1, 4($fp)
# b = a + b
      addu  $t1, $t0, $t1
# result (v0) is b * 2 (load 2 first)
      li    $t0, 2
      multu $v0, $t1, $t0
# Return address, ctrl link
      lw    $ra, -8($fp)
      move  $t0, $fp
# Restore, and return
      lw    $fp, -12($fp)
      move  $sp, $t0
      jr      $ra
```

Question 2

Code	**Notes**

.text
main:
  li $t0 2
  li $t1 4
  addu $t0 $t1 $t0
  sw $t0 ($sp)
  sw $t1 4($sp)
  li $t2 8
  subu $sp $sp $t2
  lw $t3 4($sp)
  lw $t0 8($sp)
  li $ra 0x0
  jr $ra
	
	$t0 = 2
	$t1 = 4
	$t0 = 6
	($sp) = 6
	($sp + 4) = 4
	$t2 = 8
	$sp = $sp - 8
	$t3 = ($sp + 4) ***UNDEFINED***
	$t0 = 6
	$ra = 0
	...

Register values:

$t0 = 6
$t1 = 4
$t2 = 8
$t3 = undefined
$ra = 0