COMP1521 Week 4

Welcome!!!
Please sit down we shall start at 11:05

Overview

- Assignment 1 (Remember header comment)
- 2D_arrays
- functions
- structs

2D_arrays

```
# calculate &flag[row][col]

mul      $t2, $t0, 12
add      $t3, $t2, $t1

lb       $a0, flag($t3)
li       $v0, 11
syscall
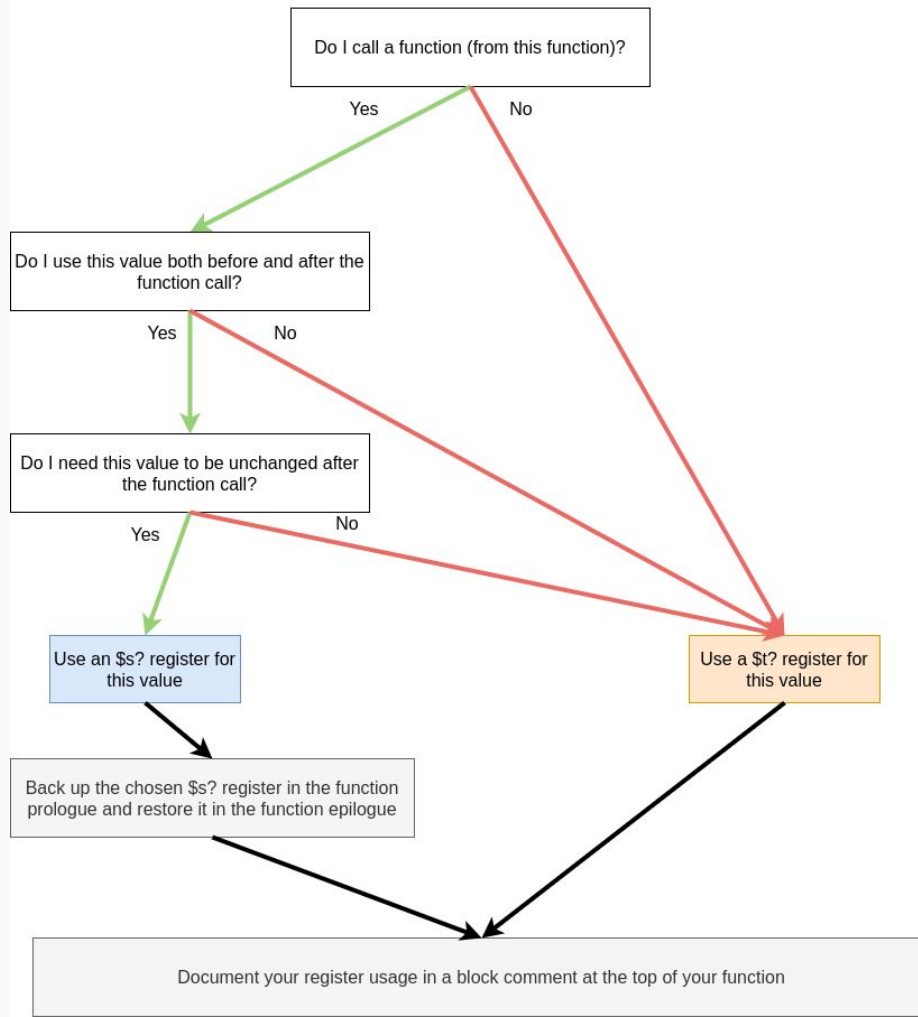```

# Functions

$a - used to pass arguments into a function

$v0 - used to return a value from functions

jal - used to call a function (jump to a function label and store the return address in $ra)

Process

1. List registers I am using
2. Complete the inside of the function
3. Complete prologue and epilogue
4. Comments!

## Function Call Protocol: Do I use a $t? or an $s? register for this value?

Do I call a function (from this function)?

Yes — No

Do I use this value both before and after the function call?

Yes — No

Do I need this value to be unchanged after the function call?

Yes — No

Use an $s? register for this value

Use a $t? register for this value

Back up the chosen $s? register in the function prologue and restore it in the function epilogue

Document your register usage in a block comment at the top of your function

# Prologue and Epilogue

Prologue (push things onto stack)

Things to push

- Return address (if another function in called within the current function) $ra
- Any $s0 registers used

Epilogue (pop things off stack and return)

Things to pop (in the same order you pushed them)

- Return address (if another function in called within the current function)
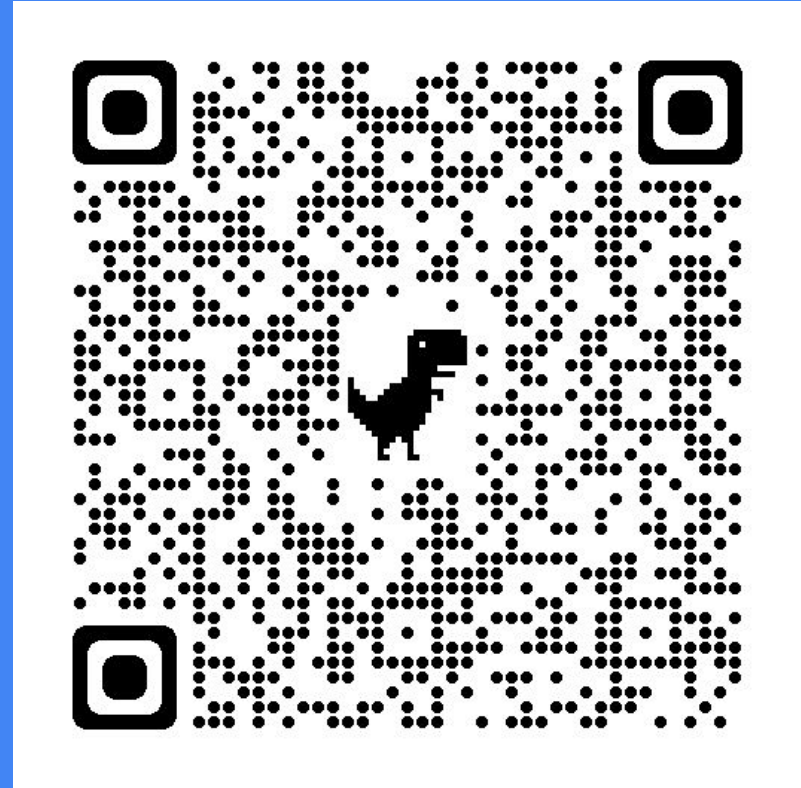- Any $s0 registers used

note: remember to begin and end your stack frames for each function

**Code from tut**



**Feedback form**



https://github.com/abbylxt/COMP1521-24T1-Tut/tree/main/W4

Code: Week4