Comp. Arch – Unit 2

DATE: 30/03/2022

ANALYZE THIS CODE AND SPECIFY THE FINAL CONTENTS IN t0, t1, t2, t3

```
.data
z:  .word  11
n:  .word  8
w:  .word  2, 0, 1, 7, -2, 5, 9, 3, 11, 17, -31

.text
    lui t0, 0x10010
    lw  t1, 24(t0)
    lw  t2, 28(t0)
    or  t3, t1, t2
```

t0 → contains 10010000
t1 → = -2
t2 → = 5
t3 → = -1

-2 = 1110
5 = 0101
1111 = -1 (in 2-compl)) OR

```
.data
    .asciz  "Alessandro"      # this takes 11 bytes
    .align  2                 # this aligns you to a multiple of 4 (12 in this case)
    .word   5, 7, 8
x:  .word   6
```

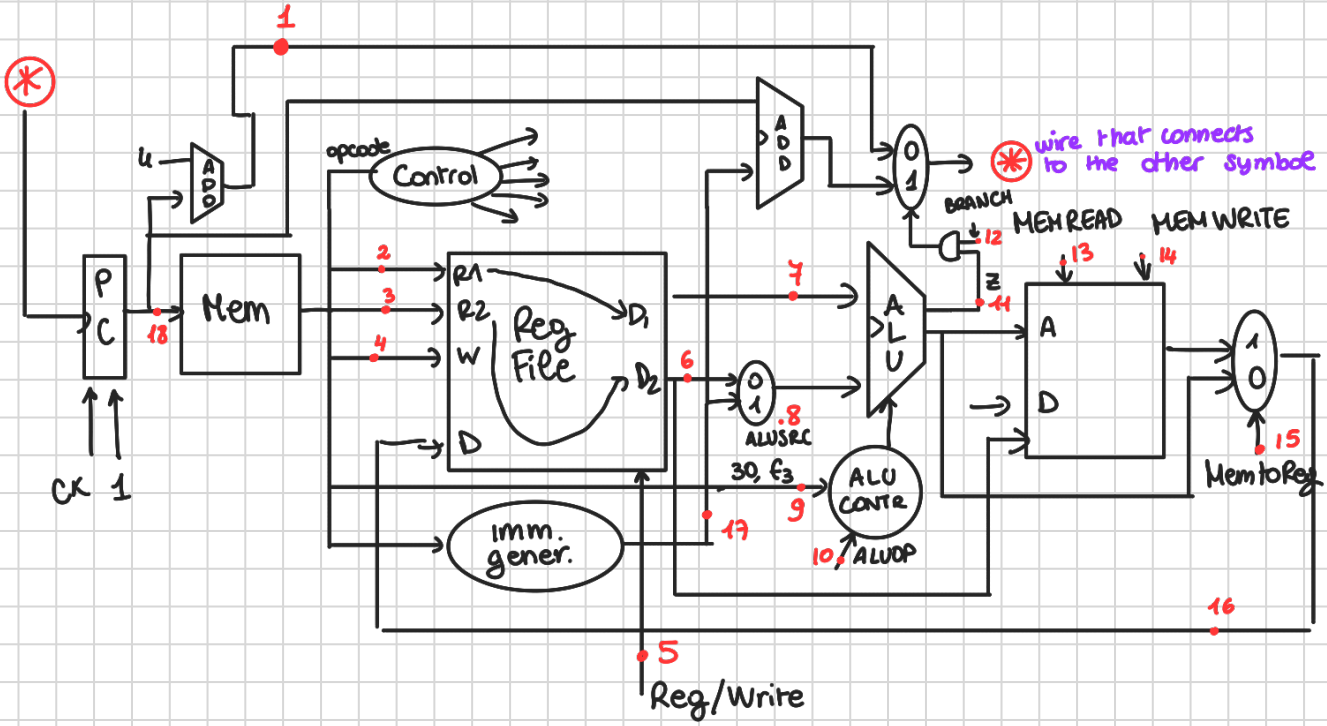
align k → 2^k

```
.text
    la  t0, x     # translate this pseudo into raw instr.
```

```
lui t0, 0x10010
addi t0, t0, 24
```
] EXTENDED

```
lw  t0, x     # translate into raw instr.
```

```
lui t0, 0x10010
lw t0, 24(t0)
```
] EXTENDED



or 5,5,6

PC 0x00400010 R5 12 R6 7

1. 0x00400014 (PC+4)
2. R5
3. R6
4. R5
5. 1 (WRITE)
6. 7 (content of R6)
7. 12 (= = R5)
8. 0
9. f3 000 30th = 0?

NOT SURE

10. we don't know
11. 0
12. 0
13. 0
14. 0
15. 0
16. 15 (or between 7 and 12)
17. garbage
18. 00400010 (PC)

sw 5, 12(6)

PC 0x00400010 R5 12 R6 7

1. 0x00400014 (PC+4)
2. R6 (rs1)
3. R5 (rs2)
4. garbage (part of immediate?)
5. 0 (READ)
6. 12 (content of R5)
7. 7 (= = R6)
8. 1
9. check green sheet

10. we don't know
11. 0
12. 0
13. 0
14. 1
15. don't care
16. 19 (sum between offset + 7)
17. 12 (immediate)
18. 00400010 (PC)