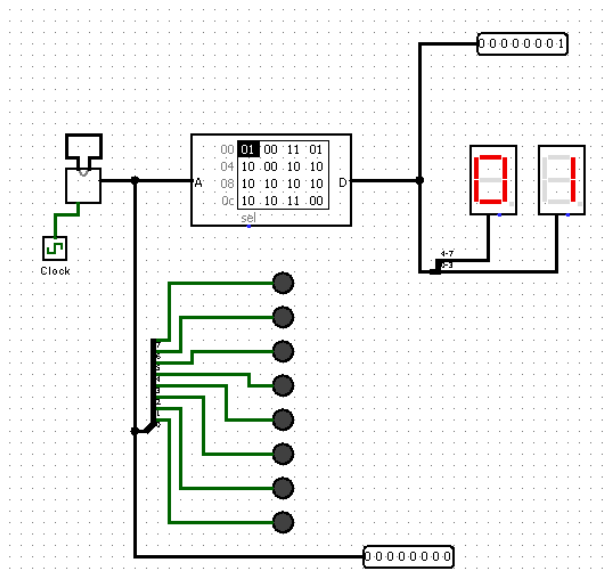
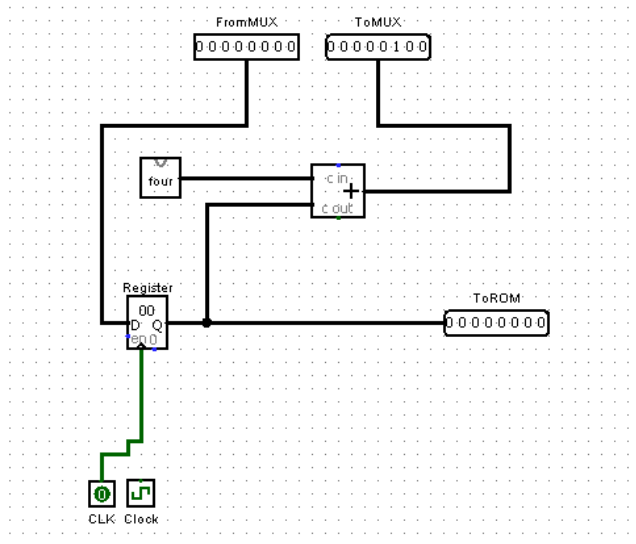


# 17485964 Assignment 5 Report

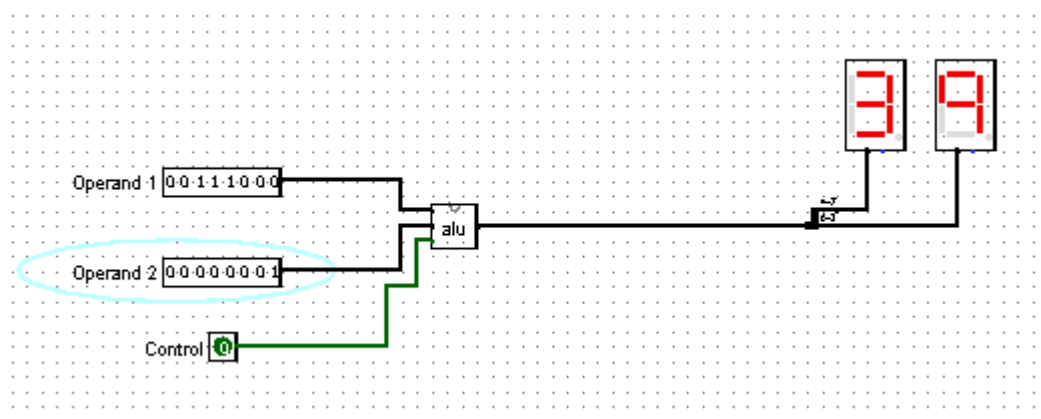
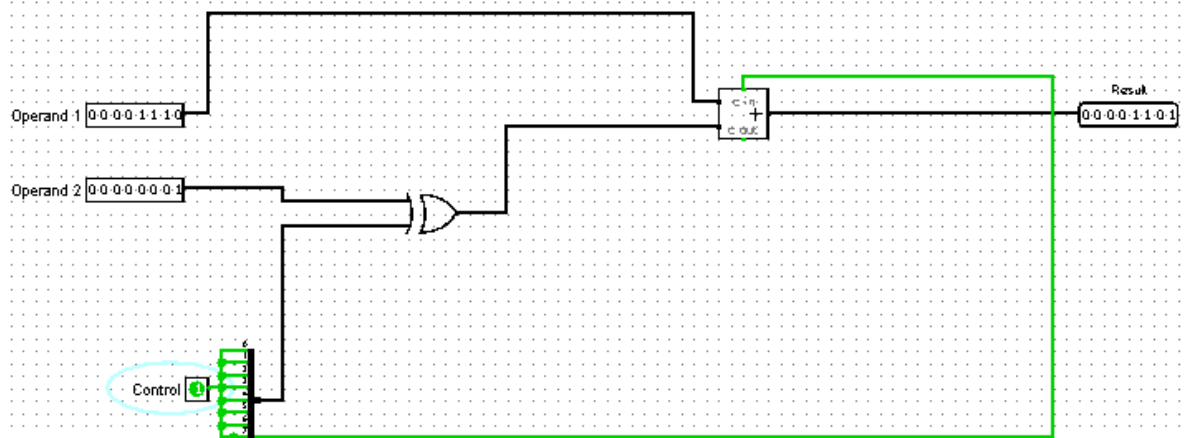
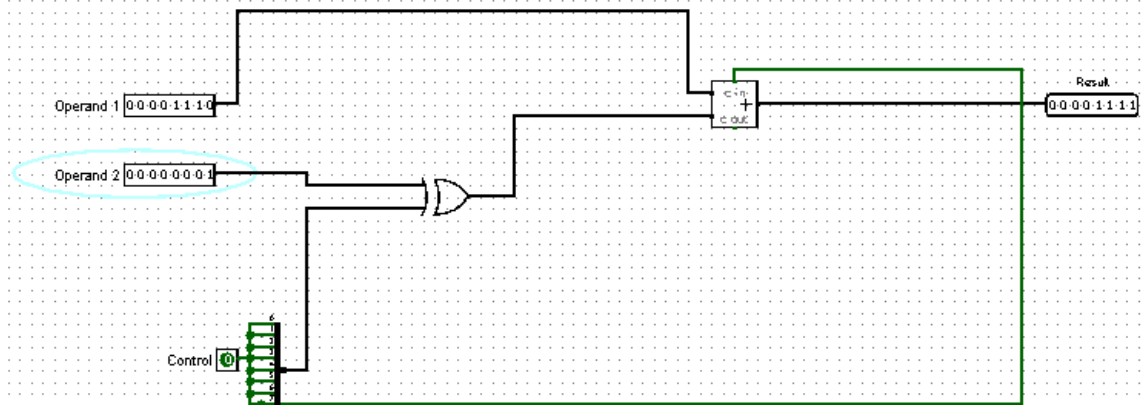
Note: for each question, the answering circuit isn't in the main circuit.

The program counter, for example, is in the pc circuit. Then the main is either left empty (q3) or used for I/O.

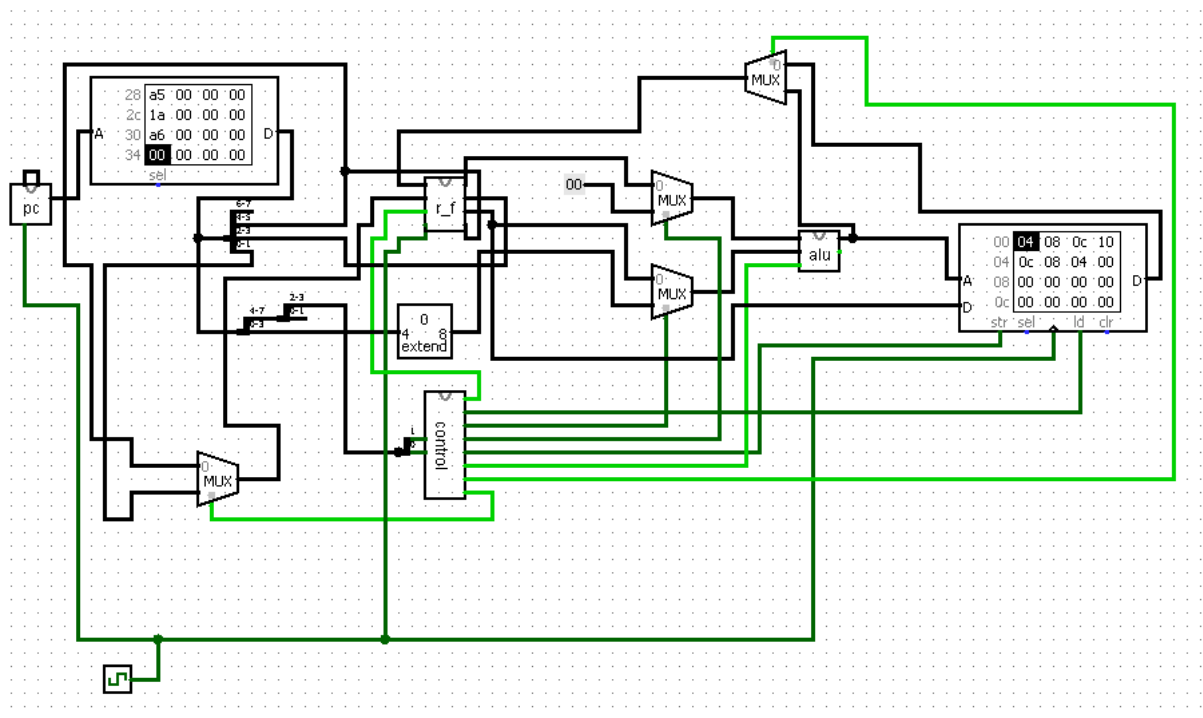
Q1.



Q2.



Control unit :



Q4.

Assembly program :

```
lb      $t1, 0
add     $t2, $t1, $t1
sb      $t2, 1
add     $t2, $t2, $t1
sb      $t2, 2
add     $t2, $t2, $t1
sb      $t2, 3
sub     $t2, $t2, $t1
sb      $t2, 4
sub     $t2, $t2, $t1
sb      $t2, 5
sub     $t2, $t2, $t1
sb      $t2, 6
```

Machine code :

```
d0
56
a1
5a
a2
5a
a3
1a
a4
1a
a5
1a
a6
```

Screenshots : Instruction memory content

00	d0	00 00 00	56 00 00 00	a1 00 00 00	5a 00 00 00
10	a2	00 00 00	5a 00 00 00	a3 00 00 00	1a 00 00 00
20	a4	00 00 00	1a 00 00 00	a5 00 00 00	1a 00 00 00
30	a6	00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
40		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
50		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
60		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
70		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
80		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
90		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
a0		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
b0		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
c0		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
d0		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
e0		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
f0		00 00 00	00 00 00 00	00 00 00 00	00 00 00 00

## Data memory content

