حل تمرین سری دوم
معماری کامپیوتر

```
for (i=0; i<1000; i++)
    for (J=i; J<1000; J++)
        if (A[i] < A[J]) {
            tmp = A[i];
            A[i] = A[J];
            A[J] = tmp;
        }
```

```
        add   s0, zero, zero      ; i = 0
Loop1:  slti  t2, s0, 4000        } شرط خروج حلقه اول
        beq   t2, zero, END_Loop1
        add   s1, s0, zero        ; J = i
Loop2:  slti  t2, s1, 4000        } شرط خروج حلقه دوم
        beq   t2, zero, END_Loop2
        lw    t0, A(s0)           ; t0 = A[i]
        lw    t1, A(s1)           ; t1 = A[J]
        slt   t2, t0, t1          } شرط if
        beq   t2, zero, END_IF
        sw    t1, A(s0)           } swap
        sw    t0, A(s1)
END_IF: addi  s1, s1, 4           ; J++
        j     Loop2               ; تکرار حلقه
END_Loop2: addi s0, s0, 4         ; i++
        j     Loop1               ; تکرار حلقه
END_Loop1:
```

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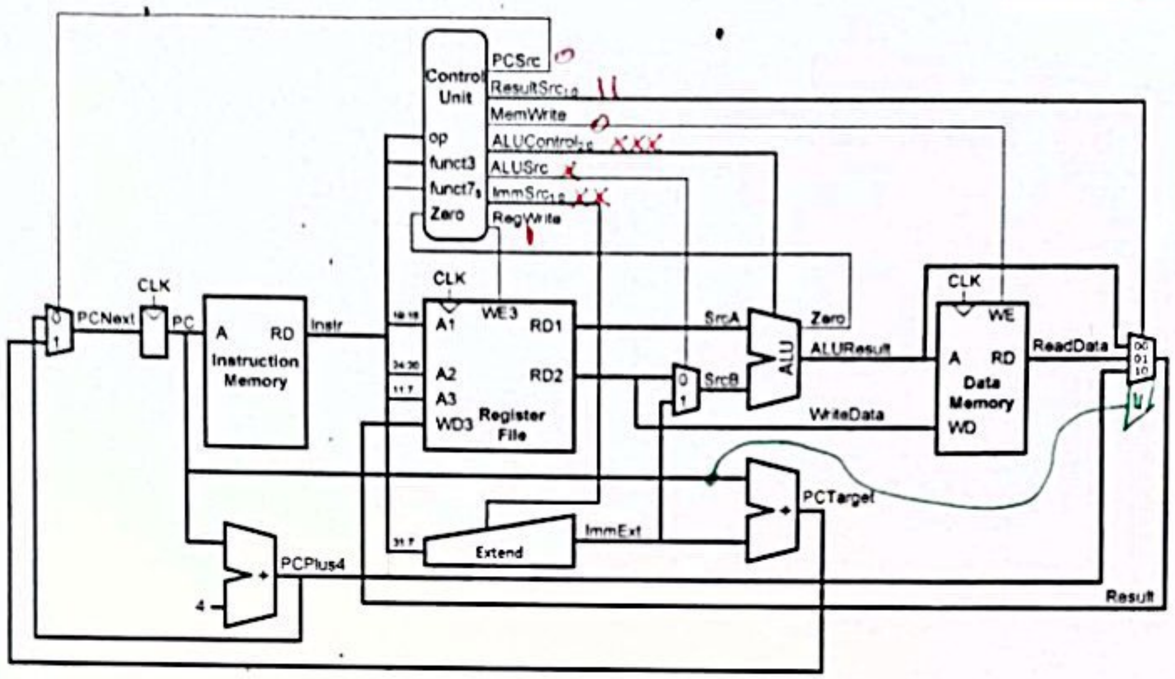
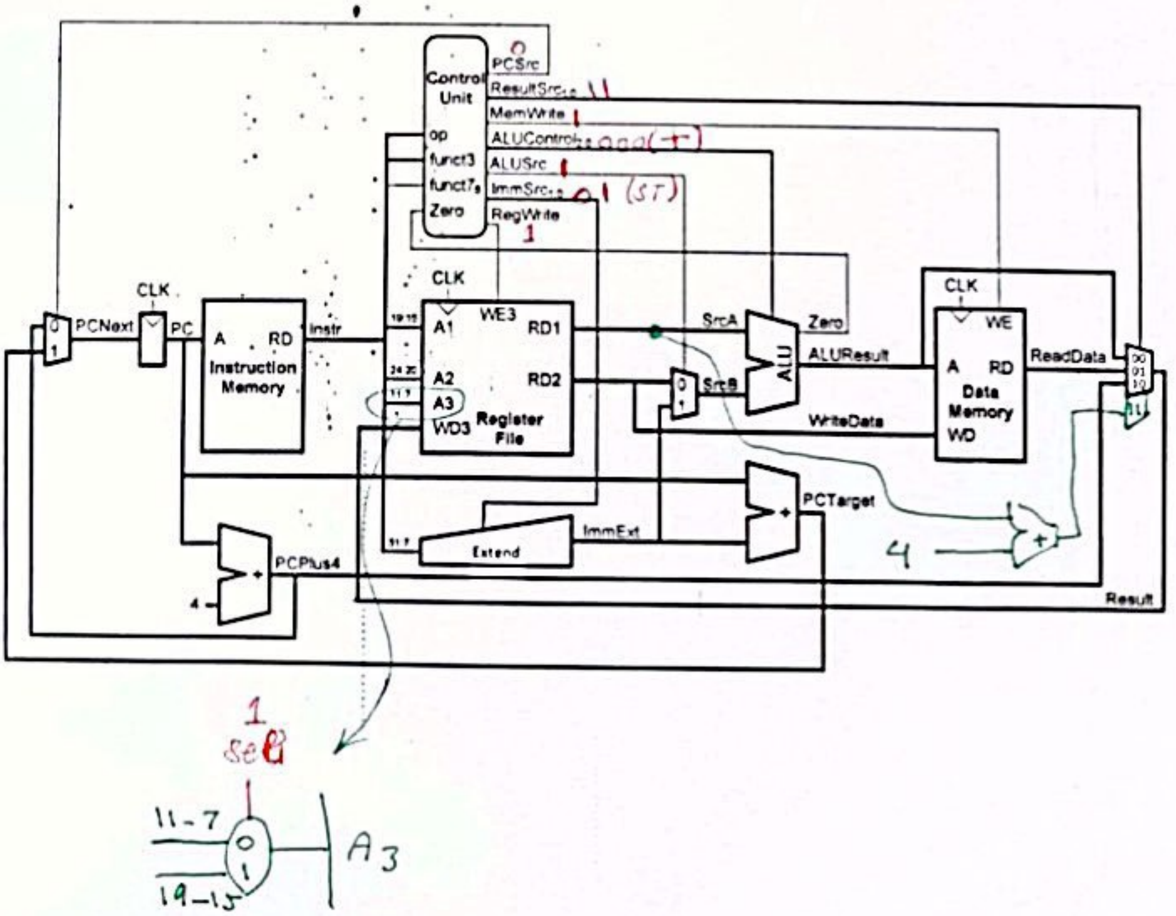
lwai (الف)



sw+ (ب)



Scanned with CamScanner

swap