Homework6 of Chapter9, 10

Ch 9 :

8

If A is prime, then RESULT has the value 1, or RESULT has the value 0.

9(a)

If they are all free then R0 is 1, or R0 is 0.

(There are 16 machines and 0 means free and 1 means busy)

ALLFREE ST R1, SR1

       AND R0, R0, #0

       LDI R1, L

       ADD R1, R1, #0

       BRnp RETURN

       ADD R0, R0, #1

RETURN LD R1, SR1

       RET

SR1 .BLKW 1

L .FILL x4001

13

The link of A is wrong when B is done.

Ch 10:

3

(a) R1

(b) R0

(c) R3

(d) R7

4

If it is underflow, then the stack is empty, then R1 is -1, or it is 0.

Overflow check is not necessary because this function doesn't add new elements into the stack.

```
PEEK AND R5, R5, #0

        LD R0, StackBase

        NOT R0, R0, #1

        ADD R0, R0, R6

        BRz Empty

        LDR R0, R6, #0 ; put the top element into R0

        RET

Empty AND R1, R1, xFFFF

        RET

StackBase .FILL xC000
```

23

It reverses a string which was put in.

附加题

1、111 and 000 are clearly not same, but (NOT 111) AND 000 = 000.

2、

IR[11:9]: ADD, AND, NOT, LD,LDI,LDR,LEA,ST,STI,STR

IR[8:6]: ADD, AND,NOT, JMP,JSRR,LDR,NOT,STR,

110: PUSH POP