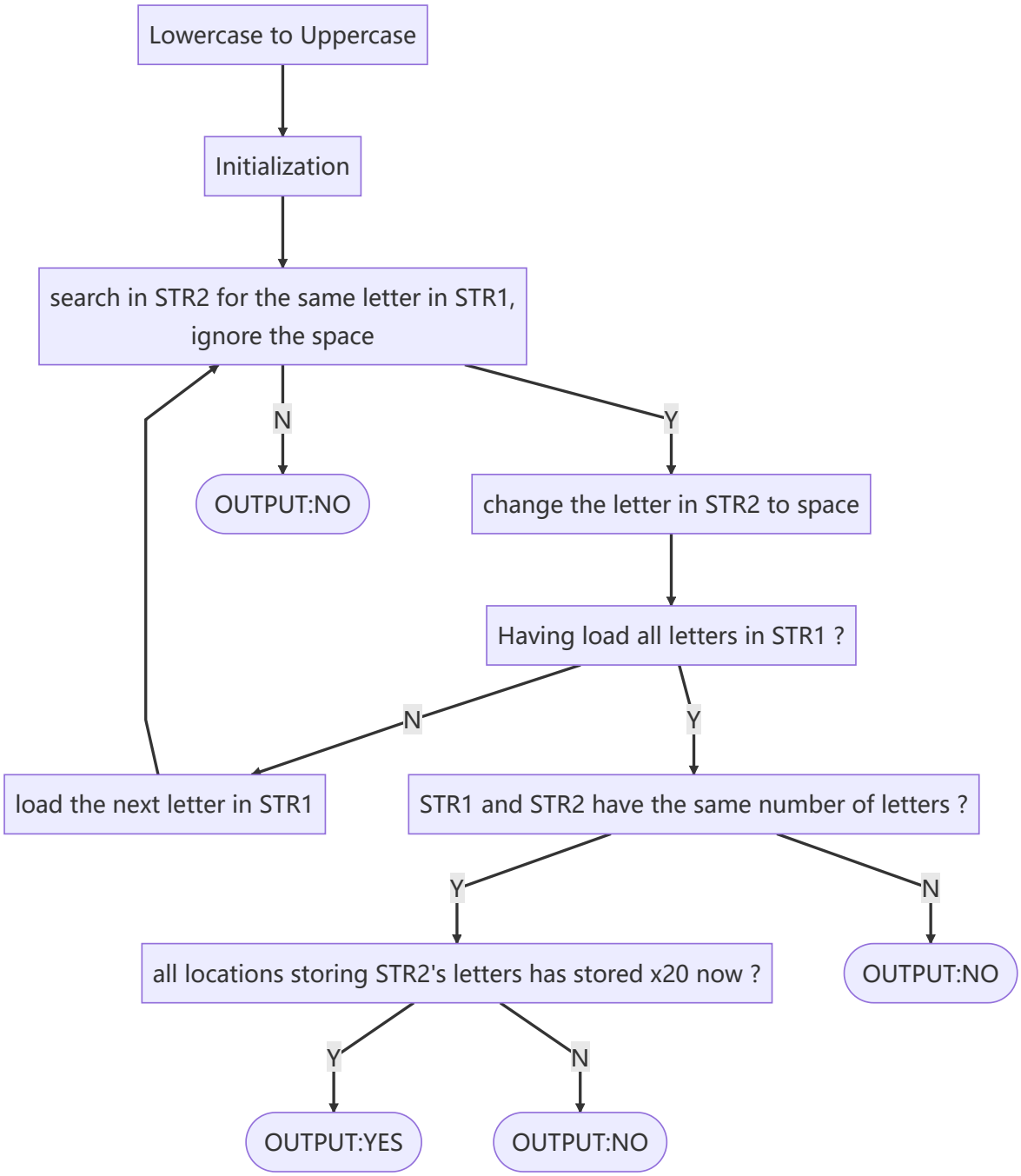
repo-lab2

Algorithm



Essential parts of codes

```
AGA     LD   R0,PTR1
        ADD  R0,R0,R6
        LDR  R2,R0,#0 ; reset R2/str1
        BRz  CHARGE
        LD   R0,P2
        ADD  R0,R0,R2 ; sp?
        BRz  ADD1
```

```
8         LD  R0,PTR2
9         ADD R0,R0,R7
10        LDR R3,R0,#0 ; reset R3/str2
11        BRz DIF
12        LD  R0,P2
13        ADD R0,R0,R3 ; sp?
14        BRz ADD2
15        NOT R3,R3
16        ADD R3,R3,#1 ; R3' = -R3
17        ADD R0,R2,R3 ; R2-R3
18        BRnp ADD2
19        LD  R3,SP   ; store
20        LD  R0,PTR2
21        ADD R0,R0,R7
22        STR R3,R0,#0 ; str2 -> sp
23        LD  R0,NUM2  ; v
24        ADD R0,R0,#1 ; v
25        ST  R0,NUM2  ; NUM2++
26        BRnzp SETR1
```

In this part, the codes compare the letters in STR1 and STR2.
First, the program loads the according letter in STR1(line 3), and then judges whether it is ‘zero’(line 4). If so, jump to compare their length. And if not, judges whether it is ‘x20’(the ASCII code of ‘space’). If it is, skip this location(line 7,jump to ADD1 part), and if it’s not, the program loads the according letter in STR2(line 10).
If the value is ‘one’, which means the program can not find the same letter in STR2, namely STR1 and STR2 is not ‘anagram’, jump to put ‘NO’(line 11, jump to DIF part). Otherwise, the program judges whether it is ‘x20’(line 13). If so, skip it(line 14, jump to ADD2 part). But if not, which means the program finds the same letter in STR2, so it changes it to ‘x20’(line 22),renews the number of letters in STR2(line 25), and then loads the next letter in STR1(line 26, jump to SETR1 part).

Q&A

I introduced the the meaning of the registers used in the program and the algorithms used in the code to TA.