Lab1: F-word

As far as we can see, one word is 16 bits in LC-3. We may call a word *F-word* if it contains 4 **continuous** `1` . For example, these words are *F-words*:

```
1111 0000 0000 0000
0100 1001 1110 0011
1110 1110 1110 1111
1111 1111 1111 1111
```

On the contrary, these words are not *F-words*:

```
1110 0111 0011 1000
1010 1010 1010 1010
0000 0000 0000 0000
```

In this lab, you are required to write a program with **LC-3 machine code** to identify whether a word is *F-word*.

Requirements

- Write program with **LC-3 machine code**(0's and 1's)
- Start your program at `x3000`
- The word to be checked will be stored at `x3100` before running your program
- Set R2 to your answer: 1 for a *F-word*, 0 otherwise. Any other value will fail the tests.
- Remember to halt your program in the end
- **NO CHEATING**

Grading

Lab 1 takes 5% of the final score, consisting of Check and Report.

Check (50%)

- Contact to your lab TA to check your code. In most cases, it is required to be **OFFLINE**.
- TA will test your code in different cases. Correctness is the primary factor in grading.

- TA will ask you questions to make sure you finish it on your own. It is very important to be familiar with the lab and your code. Suggestion: write some comments in case you forget what your code means.
- You can retry if you fails a check, but there will be a penalty of 10% points in Check part each time.

Report (50%)

- Written in **English**, concise and complete
- Convince TA that you finish the lab on your own
- **No more than** 2 A4 pages
- Consisting of:
  - Algorithm explanation
  - Essential parts of your code with sufficient comments
  - Questions TA asked you and your answer in Check

Other Penalty

- Delay: -10% each day after ddl
- Cheating: -100%, and -10% in final score of the course