Problem Set 3 Exercise #09: Most Appeared Digit

Reference: Lecture 7 notes

Learning objectives: One-dimensional array; Algorithm design

Estimated completion time: 35 minutes

Problem statement:

Write a program **most_appeared.c** to read in a positive integer and print out the digit which appears most of the time in the given integer. In case more than 1 digit has the same maximum appearance, print out the biggest one.

For example, digit 2 appears most frequently in integer 12023. In integer 113322, digits 1, 2 and 3 each appears twice and your program should print out 3 (the biggest one).

A tip is given at the end of this page.

Sample run #1:

```
Enter a positive integer: 12023
Most appeared digit in 12023: 2
```

Sample run #2:

```
Enter a positive integer: 113322
Most appeared digit in 12023: 3
```

Useful tip:

There are exactly 10 digits (0 - 9) in the decimal. Therefore we can create an array of 10 slots, say **`appear[10]`**, in which each slot marks the appearance of a digit. That is, **`appear[0]`** notes down the appearance of digit 0, **`found[1]`** about 1, …, **`found[9]`** about 9.

By using a loop, we may extract digits one by one from a given integer and mark slots in **`appear`** array accordingly.