Classy Club

Define a class Club that manages a membership in a special student club which only allows members to stay in the club for one year.

- When an instance of Club is created, the maximum number of members needs to be specified.
- A student can try to join the club; if the club already has the maximum membership then the student is placed on the waiting list.
- When one year passes one class of students leaves and a new class of students from the waiting list (the ones waiting longest) can join the club.
- The waiting list can get arbitrarily long but there can never be more than the maximum members in the club.

The Club should support the following operations:

- __init__ : initializes the club, specifying the maximum number of members.
- join: takes a name of a student, the method returns 'joined' or 'waiting' to indicate the outcome.
- yearPasses: updates the club membership and returns a tuple of two lists: the list of members for the new school year and the list of students on the waiting list.

```
>> clubAITI = Club(3)
>> clubAITI.join('Ali')
joined
>> clubAITI.join('Emily')
joined
>> clubAITI.join('Amber')
joined
>> clubAITI.join('Wesley')
waiting
>> clubAITI.join('Dileeka')
waiting
>> clubAITI.yearPasses()
(['Wesley', 'Dileeka'], [])
>> clubAITI.join('Boris')
joined
>> clubAITI.join('Boris')
waiting
>> clubAITI.yearPasses()
(['Boris'], [])
>> clubAITI.yearPasses()
([], [])
```

Number Encryption

Part A- Suppose we want to send some numbers over a phone line, but the phone line is tapped. We want to use some (very simple) encryption to stop them from stealing our information.

One quick and easy way to do this is to reverse the digits of our number. For example, 12345 becomes 54321. Think about how we can use %10 in a loop to get the last digit, and how we can make the new number using a loop. Use only basic control structures and operators (don't use String methods). Code a small program that will take in a number and print out the encrypted number.

Part B- To make our encryption even better, we can take each digit d of our number, and replace it with ((d+7) %10)before we make our new number.

For example if we encrypt 12345:

12345 ➔89012(from the digit change)➔21098 (from reversing it)

1532972 ➔8209649 ➔9469028