Given a file and assume that you can only read the file using a given method `read4`, implement a method `read` to read *n* characters. Your method `read` may be called multiple times.

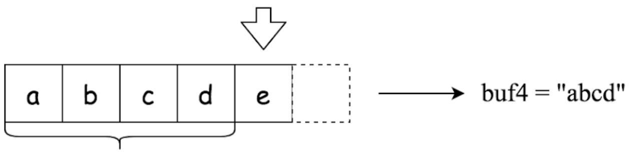
Method read4:
The API `read4` reads 4 consecutive characters from the file, then writes those characters into the buffer array `buf`.
The return value is the number of actual characters read.
Note that `read4()` has its own file pointer, much like `FILE *fp` in C.
Definition of read4:

```
   Parameter:  char[] buf4
    Returns:    int
```

```
Note: buf4[] is destination not source, the results from read4 will be copied to buf4[]
```

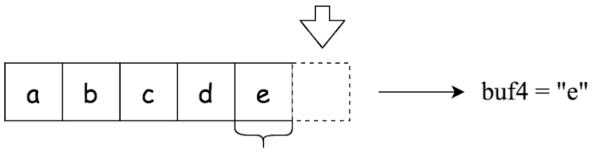
Below is a high level example of how `read4` works:

The first call of read4



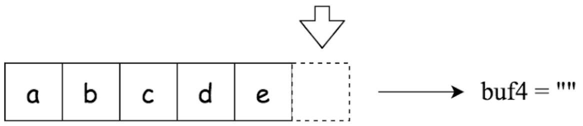
we read 4 characters from the file, hence read4 returns 4

The second call of read4



we read 1 character from the file, hence read4 returns 1

The third / forth / etc calls of read4



we read 0 characters from the file, hence read4 returns 0

```
File file("abcde"); // File is "abcde", initially file pointer (fp) points to 'a'
char[] buf = new char[4]; // Create buffer with enough space to store characters
read4(buf4); // read4 returns 4. Now buf = "abcd", fp points to 'e'
read4(buf4); // read4 returns 1. Now buf = "e", fp points to end of file
read4(buf4); // read4 returns 0. Now buf = "", fp points to end of file
```

Method read:
By using the `read4` method, implement the method `read` that reads *n* characters from the file and store it in the buffer array `buf`. Consider that you cannot manipulate the file directly.
The return value is the number of actual characters read.
Definition of read:

```
   Parameters: char[] buf, int n
```

```
    Returns:  int

Note: buf[] is destination not source, you will need to write the results to buf[]
```

```
Example 1:
File file("abc");
Solution sol;
// Assume buf is allocated and guaranteed to have enough space for storing all characters
from the file.
sol.read(buf, 1); // After calling your read method, buf should contain "a". We read a total
of 1 character from the file, so return 1.
sol.read(buf, 2); // Now buf should contain "bc". We read a total of 2 characters from the
file, so return 2.
sol.read(buf, 1); // We have reached the end of file, no more characters can be read. So
return 0.

Example 2:
File file("abc");
Solution sol;
sol.read(buf, 4); // After calling your read method, buf should contain "abc". We read a
total of 3 characters from the file, so return 3.
sol.read(buf, 1); // We have reached the end of file, no more characters can be read. So
return 0.
```

Note:

- Consider that you cannot manipulate the file directly, the file is only accesible for `read4` but not for `read`.
- The `read` function may be called multiple times.
- Please remember to RESET your class variables declared in Solution, as static/class variables are persisted across multiple test cases. Please see here for more details.
- You may assume the destination buffer array, `buf`, is guaranteed to have enough space for storing *n* characters.
- It is guaranteed that in a given test case the same buffer `buf` is called by `read`.