Project 6

Problem – File suffix

You are given N files as command-line arguments. Ex:

$$\text{./a.out file1.txt file2.txt ... fileN.txt}$$

Each file contains a list of words, with exactly one word per line (there is no limit to the number of words). Each word is composed of at most 20 lowercase letters. Ex:

file1.txt	file2.txt	file3.txt
dog cat rat	woodpecker hippopotamus chimpanzee	hippopotamus chimpanzee woodpecker

Your task is to compute a suffix with at most M characters ($M \geq 20$) for each file. The rules for creating the suffix are the following:

1) the suffix for each file starts as an empty string;
2) one by one, you must read a word from the file and concatenate it to the suffix if the length of the resulting string is below the limit of M characters;
3) every time a word cannot be concatenated to the suffix due to the lack of space, you must "reset" the suffix (set it to an empty string again) to open space for the new word.

Below we exemplify these rules for the three files above with M = 20:

Steps	Suffix (length)	Next word (length)	Action
1	"" (0)	"dog" (3)	Concatenate
2	"dog" (3)	"cat" (3)	Concatenate
3	"dogcat" (6)	"rat" (3)	Concatenate
4	"dogcatrat" (9)		

Steps	Suffix (length)	Next word (length)	Action
1	"" (0)	"woodpecker" (10)	Concatenate
2	"woodpecker" (10)	"hippopotamus" (12)	Reset & Concatenate
3	"hippopotamus" (12)	"chimpanzee" (10)	Reset & Concatenate
4	"chimpanzee" (10)		

Steps	Suffix (length)	Next word (length)	Action
1	"" (0)	"hippopotamus" (12)	Concatenate
2	"hippopotamus" (12)	"chimpanzee" (10)	Reset & Concatenate
3	"chimpanzee" (10)	"woodpecker" (10)	Concatenate
4	"chimpanzeewoodpecker" (20)		

For each input file, print one line with the file name followed by the computed suffix.

Hint #1: You can use the function strlen() to check the length of the next word and the current suffix.
Hint #2: You can use the function strcpy() to reset the suffix.
Hint #3: You can use the function strcat() to concatenate two strings.
Example #1:

```
$ ./a.out file1.txt file2.txt file3.txt
Enter the value of M: 20
file1.txt: dogcatrat
file2.txt: chimpanzee
file3.txt: chimpanzeewoodpecker
```

Example #2:

```
$ ./a.out file1.txt file2.txt file3.txt
Enter the value of M: 40
file1.txt: dogcatrat
file2.txt: woodpeckerhippopotamuschimpanzee
file3.txt: hippopotamuschimpanzeewoodpecker
```

Testing guidelines:

Change the file permissions of the test script with the following command:

chmod +x try_project6_suffix

2. Unzip the test files with the following command:

unzip project6_files.zip

3. Develop your solutions with the following program name: *project6_suffix.c*
5. Compile and test your solution for Project 6:

gcc -Wall -std=c99 project6_suffix.c

./try_project6_suffix