

# Project 10: File Splitting

COSC 1423 | Fall 2023

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**Topics:** reading & writing files

**Goal:** Take information provided in a file and “split” that file into the indicated files.

**Turn In Instructions:** See Project FAQ

**Objective Definition (15 pts):** See Planning Guide

**Style (10 pts):** See Style Guide

**Specifics (65 pts):**

- Take in a file name from the user
- Create a **get\_file\_object(file\_name)** function to open a file with read access and return it to the caller. If the file doesn't exist it is expected that your program will crash.
- The file to split will have the following format:
  - The number of files to split
  - For each file to split
    - The name of the file
    - The number of lines in the file
    - The contents of the file, will match the number of indicated lines
- Get the number of files to split from the input file
  - For each file to split call the **write\_single\_file(input\_file)** function with the file object
  - The **write\_single\_file(input\_file)** function will handle writing of a single file, including the parsing of the file name, file length, and file lines.
    - Print the name of the file that was written after the writing is complete
- Print the total number of files written at the end of the program

**Test Cases (10 pts):** See Project FAQ

**Followup Questions (10 pts):**

1. How long did this project take you?
2. Did you complete the extension?
3. What was the most difficult part of the project?
4. Explain why you picked the approach you did for this project.
5. Explain your implementation of the `write_single_file` function.

**Extension (+5):**

Update your code so it also creates a file called `all_lines.txt` that holds all the information from the files that were supposed to be split.

### Test Case 1:

#### Input File (sample\_1.txt):

```
2
primary_colors.txt
3
red
blue
yellow
mythical_creatures.txt
4
unicorn
dragon
griffin
kitsune
```

---

### Sample Run:

Enter a filename: **sample\_1.txt**

primary\_colors.txt written

mythical\_creatures.txt written

sample\_1.txt has been split into 2 files

---

#### Output File 1 (primary\_colors.txt):

```
red
blue
yellow
```

#### Output File 2 (mythical\_creatures.txt):

```
unicorn
dragon
griffin
kitsune
```

#### Output File From Extension (all\_lines.txt):

```
red
blue
yellow
unicorn
dragon
griffin
kitsune
```

*Other sample files attached to the project assignment on Canvas.*

## Input File Breakdowns

- horizontal lines to help with visuals, not actually in the files

### Input File Breakdown (sample\_1.txt):

2 ← number of files

---

primary\_colors.txt ← name of file #1  
3 ← length of file #1  
red ← file #1 line 1  
blue ← file #1 line 2  
yellow ← file #1 line 3

---

mythical\_creatures.txt ← name of file #2  
4 ← length of file #2  
unicorn ← file #2 line 1  
dragon ← file #2 line 2  
griffin ← file #2 line 3  
kitsune ← file #2 line 4

### Input File Breakdown (sample\_2.txt):

1 ← number of files

---

favorite\_things.txt ← name of file #1  
5 ← length of file #1  
roses ← file #1 line 1  
kittens ← file #1 line 2  
mittens ← file #1 line 3  
kettles ← file #1 line 4  
bows ← file #1 line 5

### Input File Breakdown (sample\_3.txt):

4 ← number of files

---

a\_is\_for.txt ← name of file #1  
2 ← length of file #1  
apple ← file #1 line 1  
apricot ← file #1 line 2

---

b\_is\_for.txt ← name of file #2  
2 ← length of file #2  
ball ← file #2 line 1  
brains ← file #2 line 2

---

c\_is\_for.txt ← name of file #3  
2 ← length of file #3  
cat ← file #3 line 1  
car ← file #3 line 2

---

d\_is\_for.txt ← name of file #4  
2 ← length of file #4  
dog ← file #4 line 1  
dragon ← file #5 line 2