Task 1.
One very common task in data processing is string manipulation. In this task, you'll have to write a C program that reads a string provided as the first command line argument. Pass the string to a function that you write. This function should count the total number of characters in the string excluding the null character. Return this value to the main program and pass it to the provided function `outputT1`. We are going to test your program by passing it all sorts of strings: from empty strings, to strings that are 256 characters long. We won't pass it a string longer than 256 characters.

Notes:

- Your program will receive only one argument.
- A good overview of how to handle command line arguments is available here.
- We will compile your program with the following command:
  `gcc task1.c output.c -o task1`
- We will run your program with the following command:
  `./task1 somestring`
  (*When testing your program, you may need to put your argument* `somestring` *in quotes for bash to treat it as a single argument.*)
- You may not use the standard library function `strlen` from `string.h` when writing your answer.

1. cd /srv/home/cmiao/ME459Upstream/HW06
2. touch task1.c
3. nano task1.c
4. input:

```
#include <stdio.h>
#include "output.h"

int count(int argc, char *argv[]){
    int sum=0, i=0;
    char *p;
    for (i = 1; i < argc; i++)
    {
        for (p = argv[i]; *p != '\0'; p++)
        {
            if ((*p >= 'a' && *p <= 'z') || (*p >= 'A' && *p <=
'Z'))
                sum += 1;
        }
    }
    return sum;
}


int main(int argc, char *argv[]){
    int sum;
    sum=count(argc, argv);
    outputT1(sum);
}
```

5. gcc task1.c output.c -o task1 -std=c99
6. touch task1.sh
7. nano task1.sh

8. input:

```
#!/usr/bin/env bash
#SBATCH --job-name=Task1
#SBATCH -p shortgpu
#SBATCH --ntasks=1
#SBATCH --cpus-per-task=1
#SBATCH --time=0-00:00:10
#SBATCH --output=task1_res.txt

cd $SLURM_SUBMIT_DIR

./task1 something
```

9. sbatch task1.sh

10. cat task1_res.txt

```
[cmiao@euler HW06]$ cat task1_res.txt
9
```