

Remember that all counting variables need to be integers.

For this homework, you will need to make use of input/output redirection.

- **Input Redirection**

```
a.exe < somefile.in
```

This tells your program to get all `READ(*,*)` statements from the file `somefile.in` instead of the keyboard.

- **Output Redirection**

```
a.exe > somefile.out
```

This tells your program to print all `WRITE(*,*)` statements to the file `somefile.out` instead of to the screen. If the file `somefile.out` does not exist, it will be created. If it does exist, it will be overwritten.

- **Output Redirection with Append**

```
a.exe >> somefile.out
```

This tells your program to print all `WRITE(*,*)` statements to the file `somefile.out` instead of to the screen. If the file `somefile.out` does not exist, it will be created. If it does exist, the output will be appended to the existing contents of the file.

- **Combining** You can combine input/output redirection as needed, for example:

```
a.exe < somefile.in > somefile.out
```

or

```
a.exe < somefile.in >> somefile.out
```

- 1) (3 pts) Write an F90 program that will compute the average of the positive double precision values that are given in the data file `hw14a.in` (this file includes a negative value at the end to terminate input). Right click on the data file name to save it to your computer. How many numbers are in the file?
- 2) (1 pts) Write an F90 program that will read in the data from the data file `hw14b.in` and print the values to the screen. Be sure to match the data type you are reading to the data type in the file.
- 3) (4 pts) Write an F90 program that will determine the geometric mean of a set of user input positive integers. Test your program using the values 3,4,8,2,12,9,5. Recall that the geometric mean is defined to be

$$\sqrt[n]{x_1 \cdot x_2 \cdots x_n}$$

This problem is an accumulation operation, but here you are accumulating a product and not a sum.