Flowchart and Pseudocode

Activity #1: "Hello, World!"
file name: hello_world1
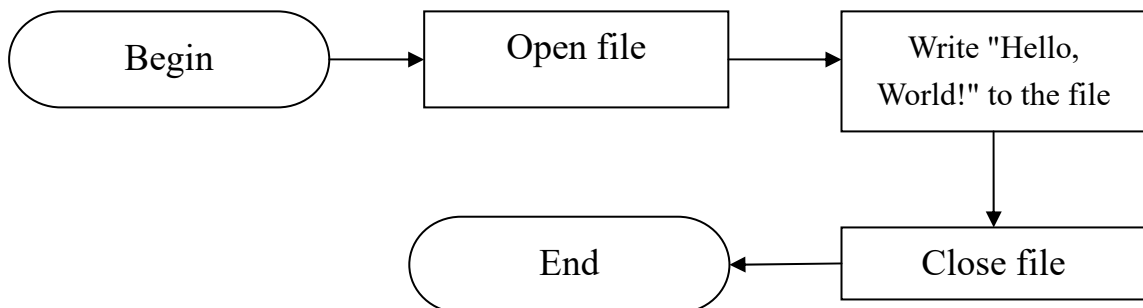
```
Begin → Print "Hello, World!" → End
```

Print out "Hello, World!" to the screen.

Activity #1: "Hello, World!"
file name: hello_world2

```
Begin → Open file → Write "Hello, World!" to the file
                                              ↓
End ← Close file
```
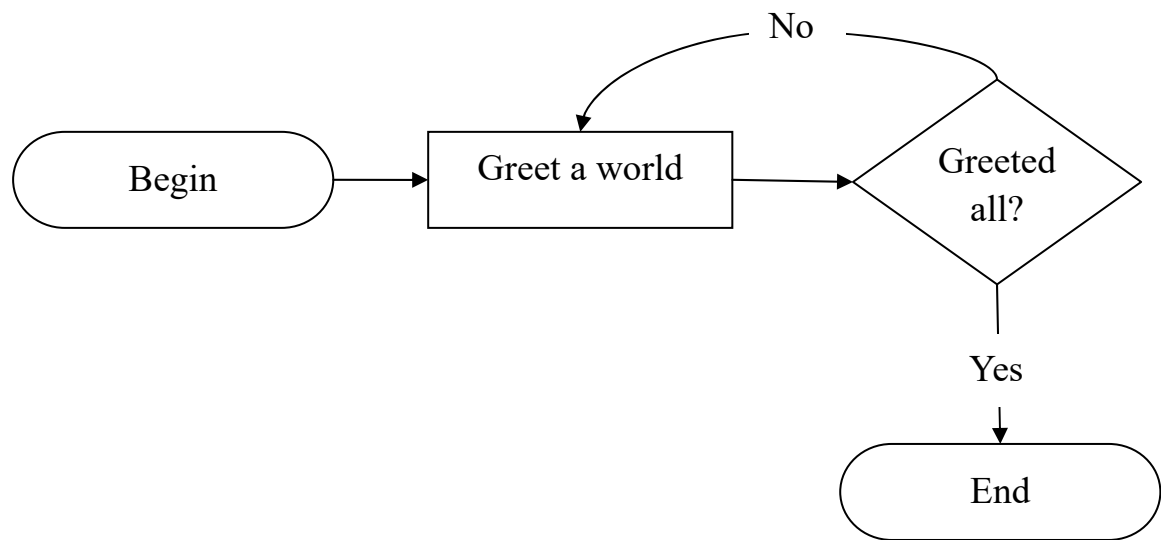
1. Open a file named "HelloWorld.txt".
2. Write "Hello, World!" to the file.
3. Close the file.

Activity #1: "Hello, World!"
file name: greet_the_world

```
                                No
          ┌──────────────┐              ┌───────────┐
  Begin ─▶│ Greet a world│────────────▶│ Greeted   │
          └──────────────┘              │ all?      │
                                        └───────────┘
                                             │ Yes
                                             ▼
                                        ┌──────────┐
                                        │   End    │
                                        └──────────┘
```
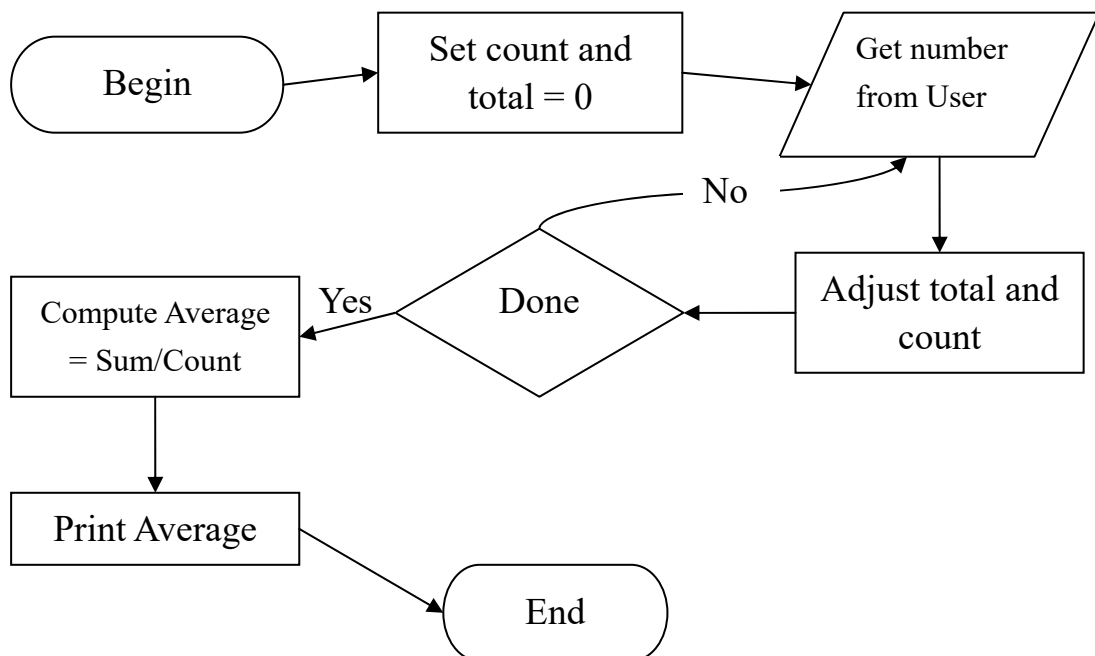
Pseudocode:
For each world Greet the world:
"Hello, World 1" to "Hello, World 10".

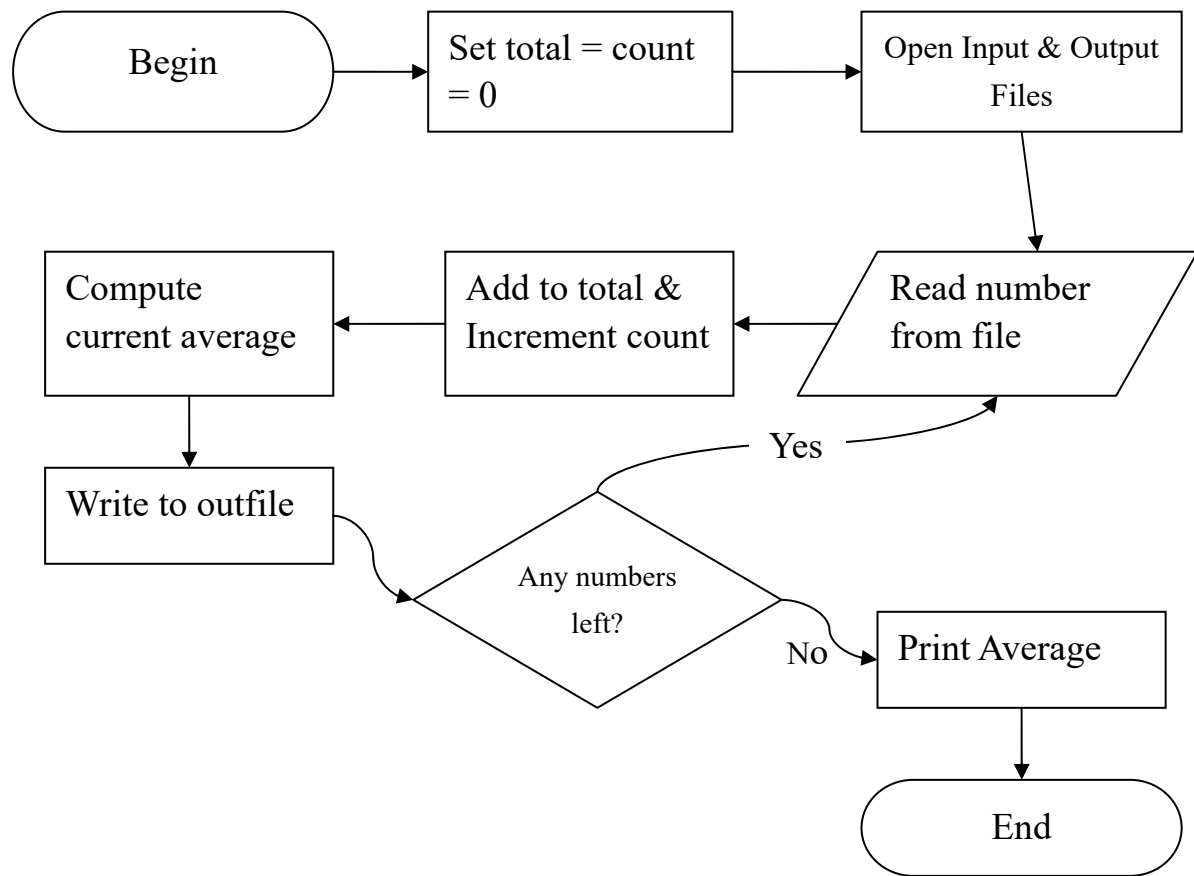**Activity #2: Interactive & Batch Averaging**
file name: Interactive_Batch_Averaging1

Pseudocode:
1. Set count and total to zero.
2. Get a number from the user.
3. Add the number to the total. Increment the count;
   if the user wants to enter another number return to the first step.
4. Compute the average as total/count.
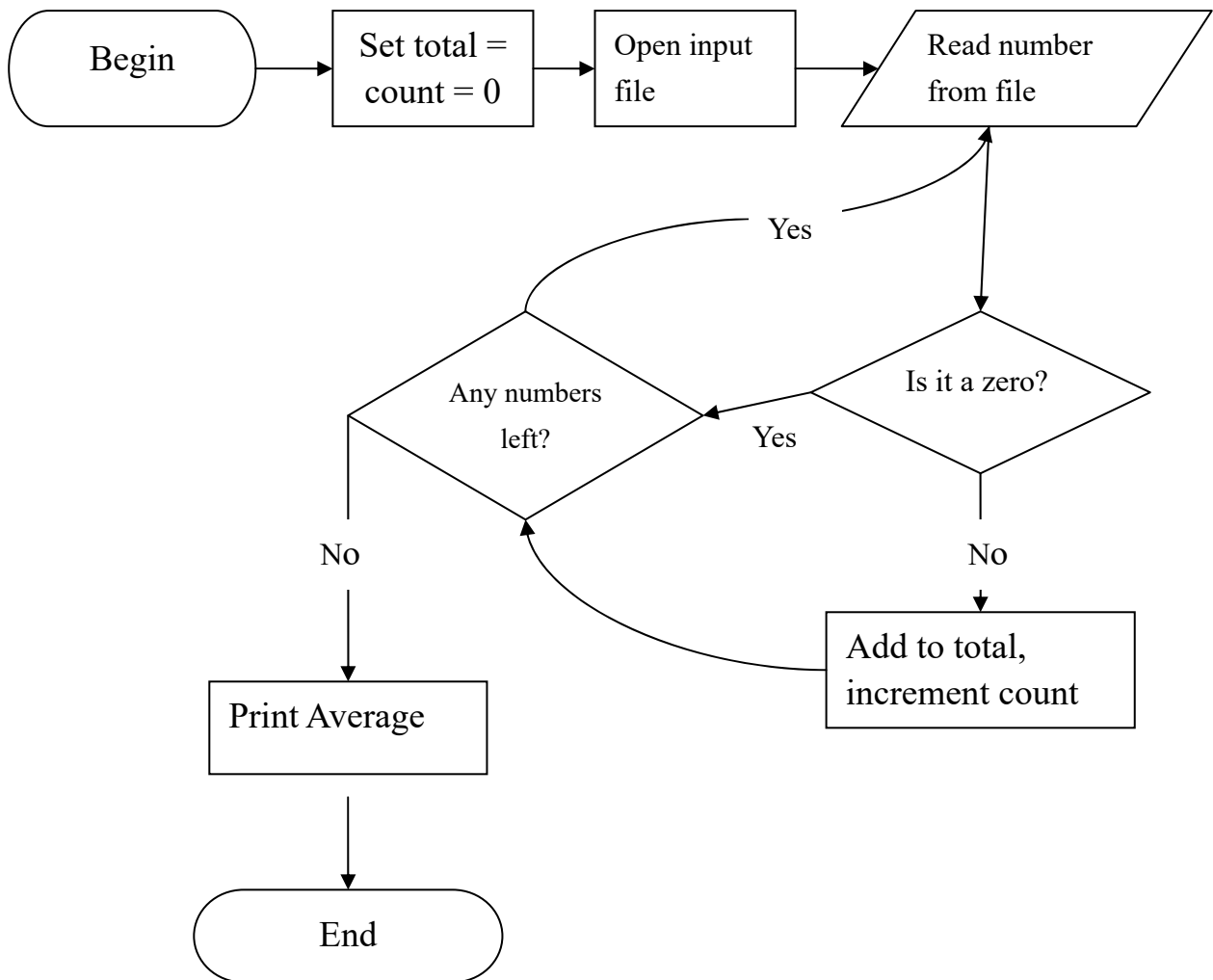5. Print the average.

Activity #2: Interactive & Batch Averaging
file name: Interactive_Batch_Averaging2

Pseudocode:
1. Set count and total both to zero.
2. Open the input and output files.
3. For every number in the input file:
   Read the number.
   Add the number to the total.
   Increment the count by one.
   Compute current average = total/count.
   Write count and current average to the outfile.
4. Print the final average.

Activity #3: Filtering & Sorting
file name: Filtering_Sorting1

```
Begin  →  Set total =      →  Open input   →  Read number
          count = 0           file             from file
```

Any numbers left? — Yes → Read number from file

Is it a zero? — Yes → Any numbers left?

Is it a zero? — No → Add to total, increment count

Add to total, increment count → Any numbers left?

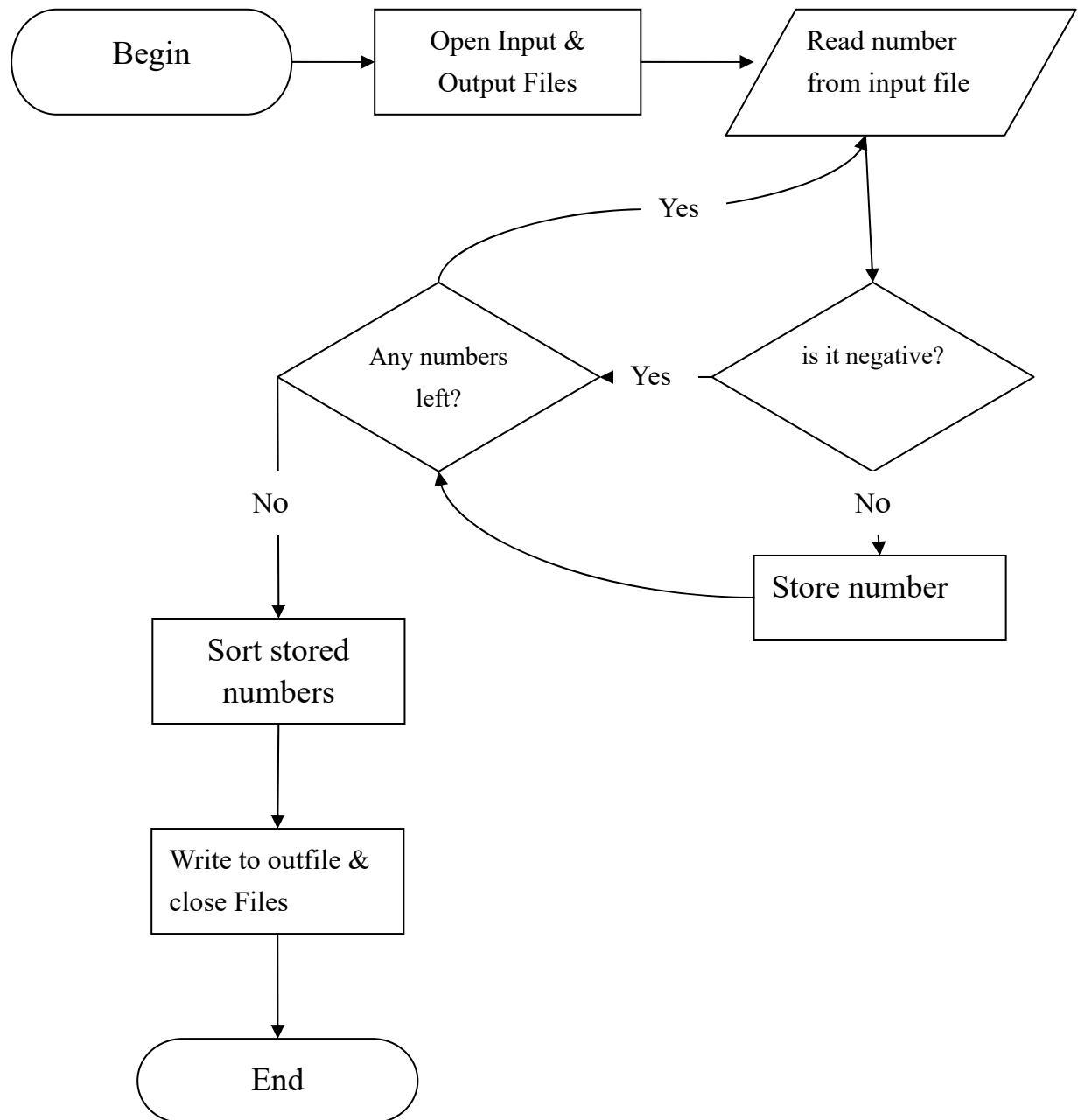Any numbers left? — No → Print Average → End

Pseudocode:
1. Set count and total both to zero.
2. Open the input files.
3. For each number in the file:
   If the number is zero do nothing;
   else add the number to the total and increment the count.
4. Print the final average.

Activity #3: Filtering & Sorting
filename: Filtering_Sorting2

```
        Begin          →    Open Input &      →    Read number
                             Output Files            from input file

                                        Yes ↗

              Any numbers          Yes          is it negative?
                left?        ◄─

         No │                                        No │

         Sort stored                             Store number
          numbers

         Write to outfile &
         close Files

             End
```

Pseudocode:
1. Open input and output file.
2. For each number in the input file:
    If the number is negative do nothing; else store the number for later use.
3. Sort stored numbers.
4. Write sorted numbers to the outfile.
5. Close input and output files