Instructions: Solve the following questions.

Question 1. Written Response.
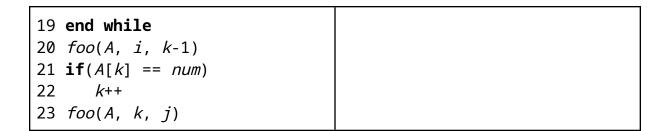Consider sorting the following input integer array:

Example.
[3, 0, 4, 1, 5, 2, 9, 7, 8, 6]
When sorted, the array becomes:
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]

In this question, you will create the algorithm-pseudocode for four sorting methods (based on the sorting methods we covered in class). For each one, you will need to develop the pseudocode and display the iterations and swaps for each algorithm.
Like the following example:

Pseudocode	Output
1 **Input**: A, an array of N integers	Input Array:
	[5, 1, 2, 7, 8, 9, 0, 3, 4, 6]
2 **Output**: ???	
3 *foo(A, 0, N-1)*	What is printed by line 6:
4	[5, 1, 2, 7, 8, 9, 0, 3, 4, 6]
5 *proc foo(Array A, int i, int j):*	[1, 2, 0, 3, 4, 9, 5, 7, 8, 6]
6 *print A*	[0, 2, 1, 3, 4, 9, 5, 7, 8, 6]
7 **if**(*j* <= *i*)	[0, 2, 1, 3, 4, 9, 5, 7, 8, 6]
8 **return**	[0, 1, 2, 3, 4, 9, 5, 7, 8, 6]
9 int *k* = *i*	[0, 1, 2, 3, 4, 9, 5, 7, 8, 6]
9 int *m* = *k*	[0, 1, 2, 3, 4, 9, 5, 7, 8, 6]
10 int *num* = *A[i]*	[0, 1, 2, 3, 4, 9, 5, 7, 8, 6]
11 **while**(*m* <= *j*):	[0, 1, 2, 3, 4, 5, 7, 8, 6, 9]
12 **if** *A[m]* < *num*	[0, 1, 2, 3, 4, 5, 7, 8, 6, 9]
13 **if** *m* != *k*	[0, 1, 2, 3, 4, 5, 7, 8, 6, 9]
14 swap *A[k]* and *A[m]*	[0, 1, 2, 3, 4, 5, 6, 8, 7, 9]
15 **end if**	[0, 1, 2, 3, 4, 5, 6, 8, 7, 9]
16 *k++*	[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
17 **end if**	[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
18 *m++*	[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]

```
19 end while
20 foo(A, i, k-1)
21 if(A[k] == num)
22     k++
23 foo(A, k, j)
```

1. Selection Sort.

Pseudocode/Algorithm	Input Array: [3, 0, 4, 1, 5, 2, 9, 7, 8, 6] Output Array:

2. Insertion Sort.

Pseudocode/Algorithm	Input Array: [3, 0, 4, 1, 5, 2, 9, 7, 8, 6] Output Array:

3.BubbleSort.

Pseudocode/Algorithm	Input Array: [3, 0, 4, 1, 5, 2, 9, 7, 8, 6] Output Array:

4. MergeSort.

Pseudocode/Algorithm	Input Array: [3, 0, 4, 1, 5, 2, 9, 7, 8, 6] Output Array:

Submission Instructions

You must upload your homework in a **pdf** file in the designated area in D2L.

Grading Points

Total Score: 25 points