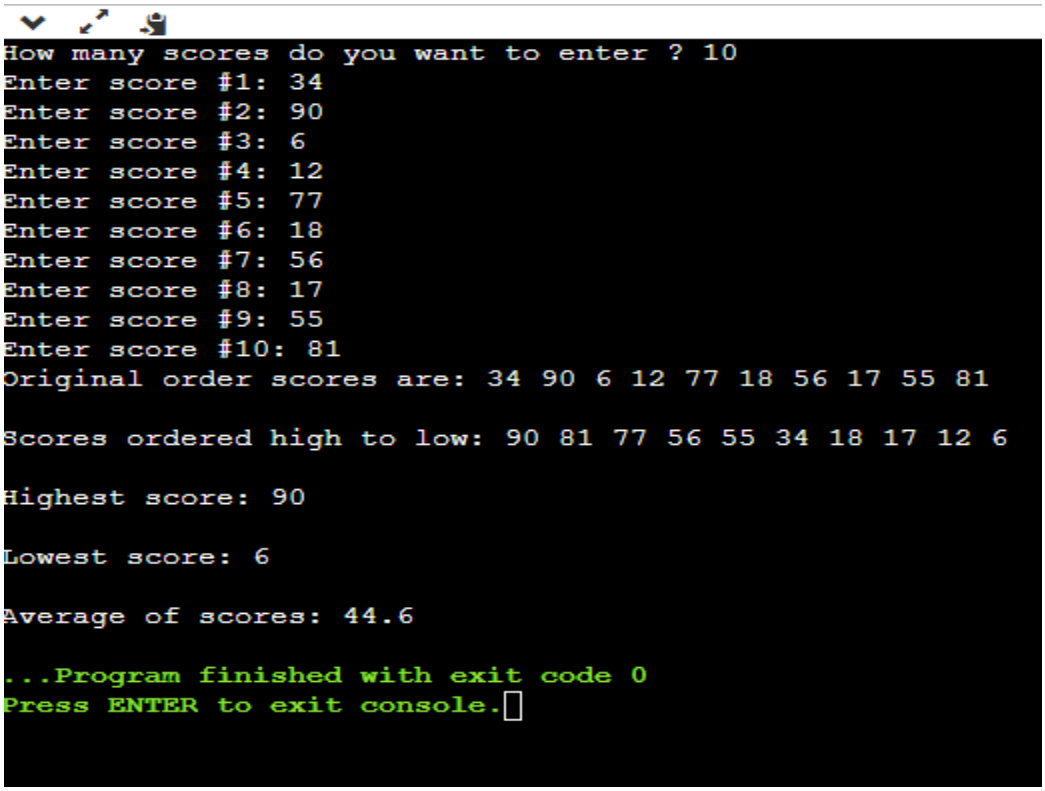
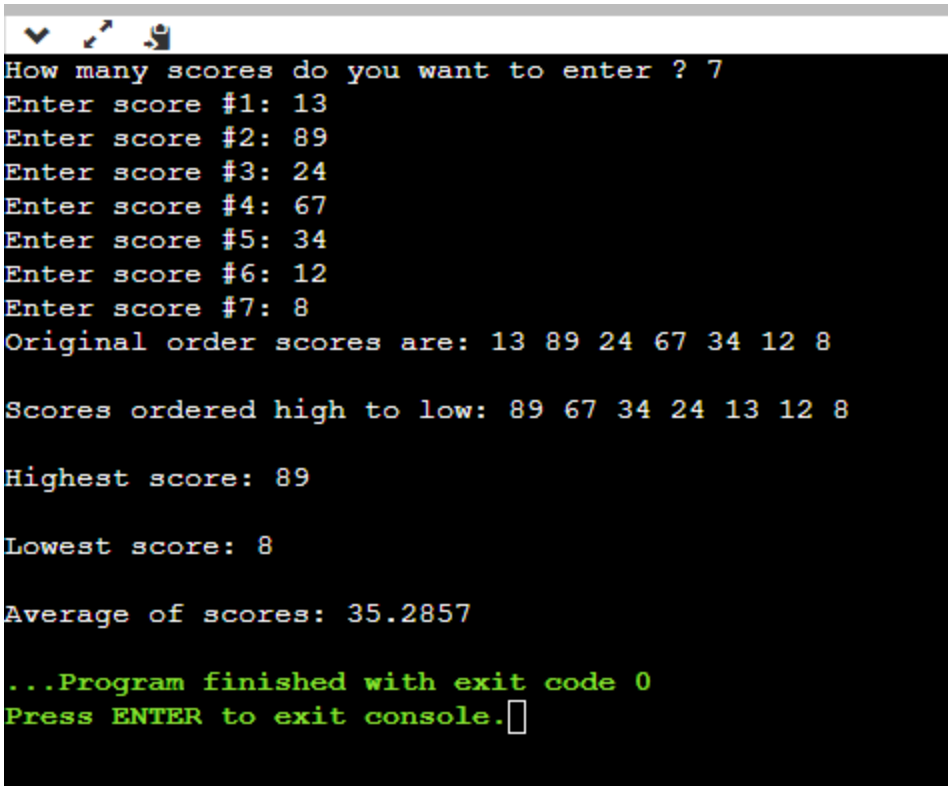
PROGRAMMING CLASSWORK 8

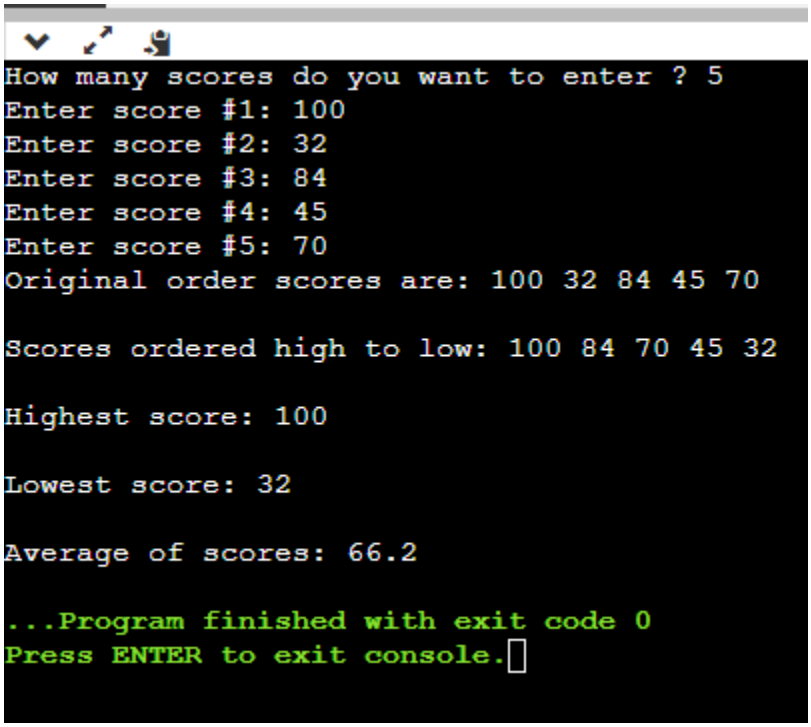
KIERAN YALLA

/*
Header to include in source code:
* Class: CMSC140 CRN
* Instructor: Professor Koo
* Classwork/Homework/<8>
* Description: Develop a program to read as many test scores as the user wants from the keyboard (assuming at most 50 scores).
* Due Date: 12/02/21
* I pledge that I have completed the programming assignment independently.
I have not copied the code from a student or any source.
I have not given my code to any student.
Print your Name here: Kieran Yalla
*/

Outputs of program:



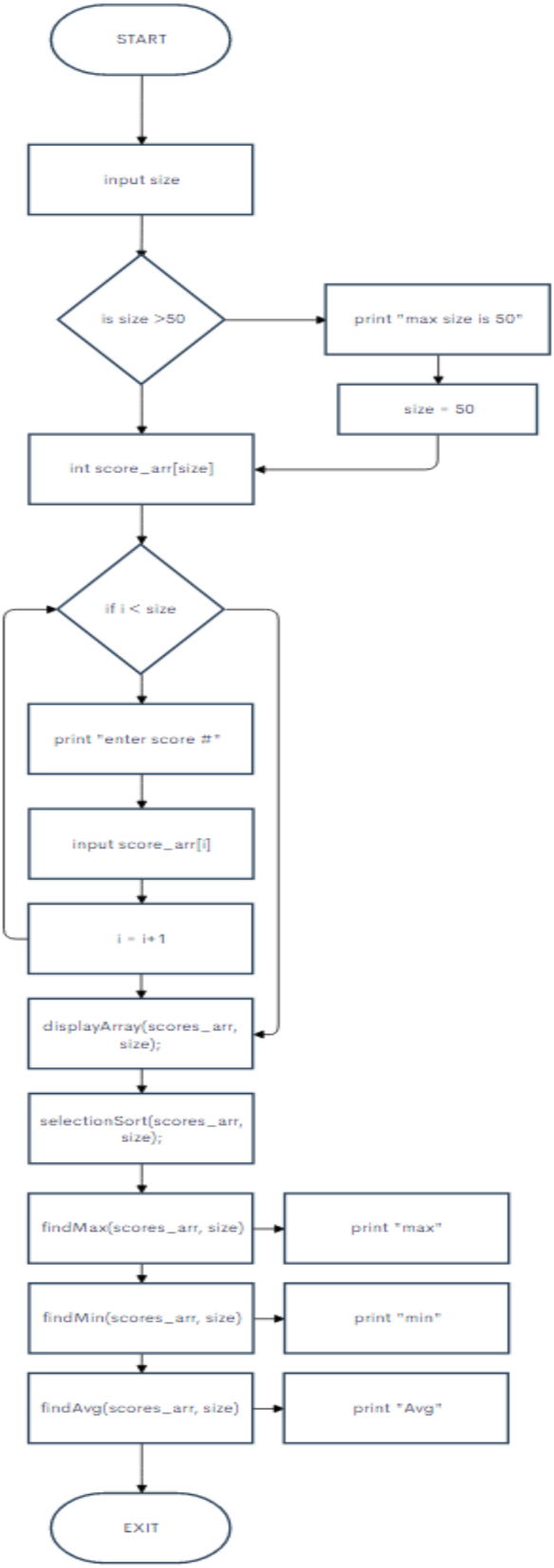

How many scores do you want to enter ? 7
Enter score #1: 13
Enter score #2: 89
Enter score #3: 24
Enter score #4: 67
Enter score #5: 34
Enter score #6: 12
Enter score #7: 8
Original order scores are: 13 89 24 67 34 12 8
Scores ordered high to low: 89 67 34 24 13 12 8
Highest score: 89
Lowest score: 8
Average of scores: 35.2857
...Program finished with exit code 0
Press ENTER to exit console.

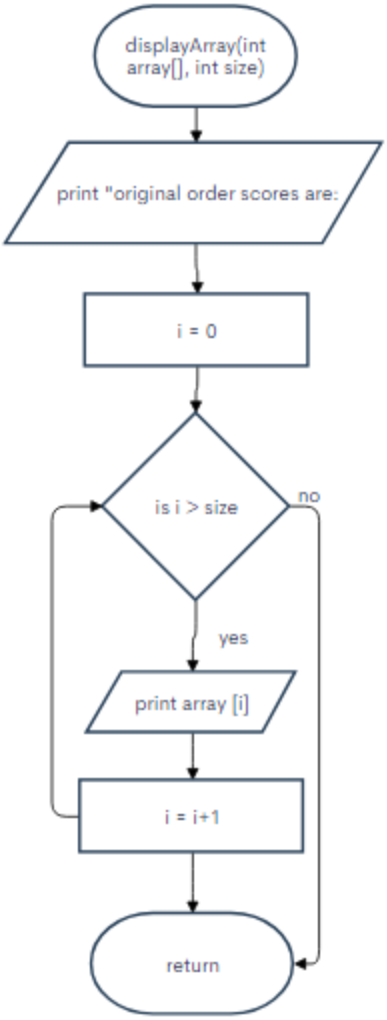

How many scores do you want to enter ? 5
Enter score #1: 100
Enter score #2: 32
Enter score #3: 84
Enter score #4: 45
Enter score #5: 70
Original order scores are: 100 32 84 45 70
Scores ordered high to low: 100 84 70 45 32
Highest score: 100
Lowest score: 32
Average of scores: 66.2
...Program finished with exit code 0
Press ENTER to exit console.

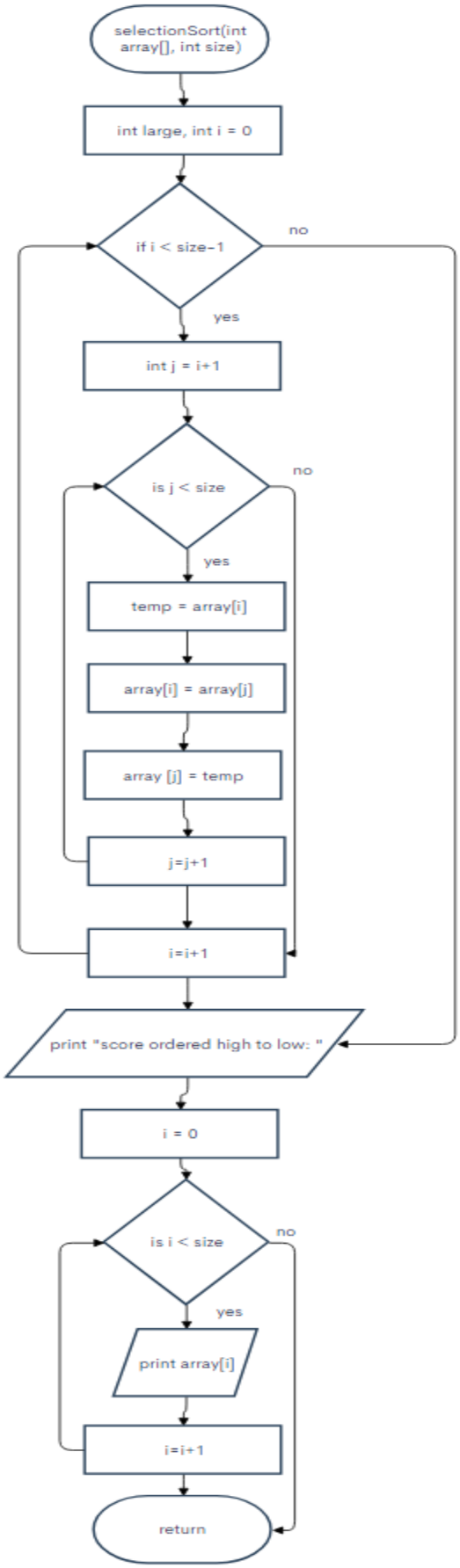
Pseudo code:

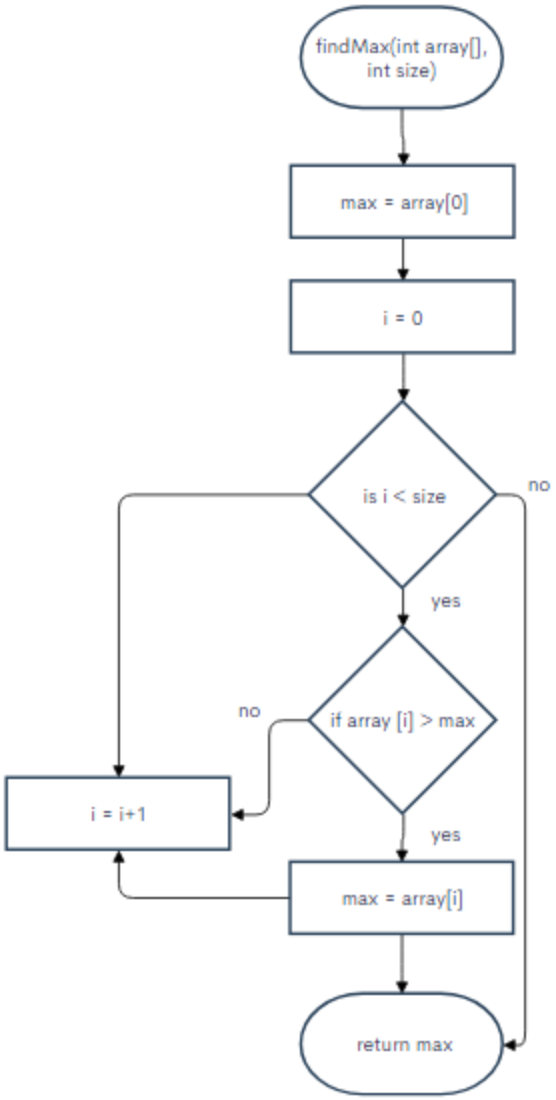
```
Start
Int variable size
Take input size
If size > 50
Size = 50
Int array with size
For loop i = 0 to size
Take input scores
End for loop
Call function displayArray(int array[], int size)
Start for loop for i = 0 to size
Print an element
End loop
End function
Call function
selectionSort(int array[], int size)
Int large
Start for loop i=0 to size -1
Start another loop j = 0 to size
If array[j] > array[i]
Interchange value
Else
Remain as is
Start for loop i = 0 to size
Print “scores ordered high to low”
Call function findMax(int array[], int size)
Int max = array[0]
For loop i=0 to size
If array [i] > max
Max = array[i]
End loop
Return max
Call function findMin(int array[], int size)
Int min = array[0]
For loop i = 0 to size
If array [i] min
min = array[i]
End loop
Return min
Call function findAvg(int array[], int size)
Int sum = 0
For loop i = 0 to size
Sum = sum + array[i]
End loop
avg = ((1.0 * sum) / (1.0 * size));
Return avg
Print “highest score:”
Print “lowest score:”
Print “average of scores:”
Return 0
```

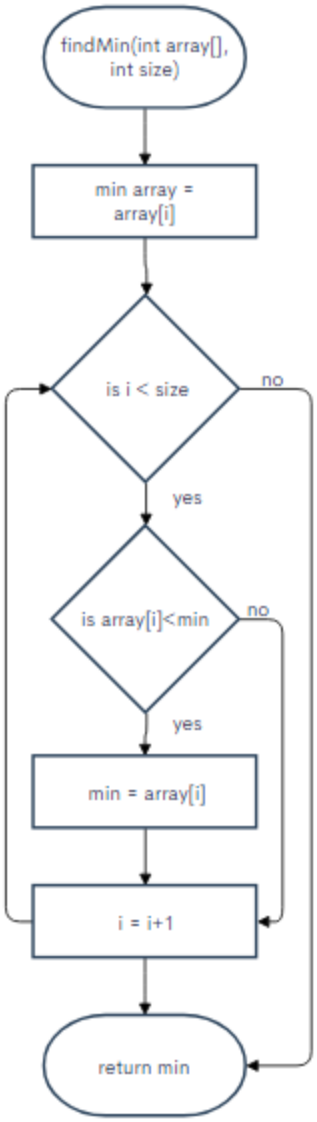
Flowcharts:

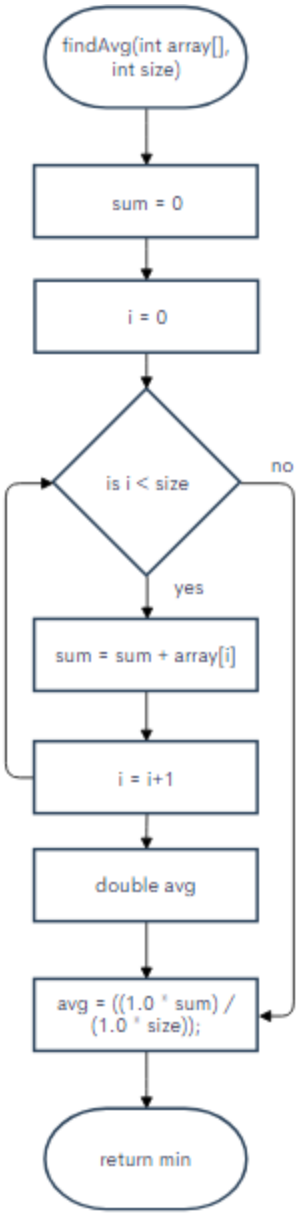

START
input size
is size >50
print "max size is 50"
size = 50
int score_arr[size]
if i < size
print "enter score #"
input score_arr[i]
i = i+1
displayArray(scores_arr, size);
selectionSort(scores_arr, size);
findMax(scores_arr, size)
print "max"
findMin(scores_arr, size)
print "min"
findAvg(scores_arr, size)
print "Avg"
EXIT


displayArray(int array[], int size)
print "original order scores are:
i = 0
is i > size
no
yes
print array [i]
i = i+1
return


selectionSort(int array[], int size)
int large, int i = 0
if i < size-1
no
yes
int j = i+1
is j < size
no
yes
temp = array[i]
array[i] = array[j]
array [j] = temp
j=j+1
i=i+1
print "score ordered high to low: "
i = 0
is i < size
no
yes
print array[i]
i=i+1
return


findMax(int array[], int size)
max = array[0]
i = 0
is i < size
no
yes
if array [i] > max
no
yes
i = i+1
max = array[i]
return max


findMin(int array[], int size)
min array = array[i]
is i < size
no
yes
is array[i]<min
no
yes
min = array[i]
i = i+1
return min


findAvg(int array[], int size)
sum = 0
i = 0
is i < size
no
yes
sum = sum + array[i]
i = i+1
double avg
avg = ((1.0 * sum) / (1.0 * size));
return min