Pseudocode:

Module Main()

//Constant for the array size

Constant Integer SIZE = 20

Declare String names[SIZE]

Call getname(names,SIZE)

// Loop counter

Declare Integer index

// Sort the names.

Call bubbleSort(names, SIZE)

// Display the sorted array

Call display(names)

Module getname(String Ref names[], SIZE)

// Counter variable to use in the loop, initialized with 0.

Declare Integer order = 0

// Declare an input file.

Declare InputFile nameFile

// Open the names.dat file

Open nameFile “names.dat”

// Read the contents of the file into array.

While (order <= SIZE - 1) AND (NOT eof(nameFile))

Write nameFile names[index]

Set order = order + 1

End While

// Close the file.

Close nameFile

// The bubbleSort module accepts an array of Strings

// and the array’s size as arguments. When the module

// is finished, the values in the array will be sorted

// in ascending order.

Module bubbleSort (String Ref array[], Integer arraySize)

// the maxElement variable will contain the subscript

// of the last element in the array to compare.

Declare Integer maxElement

// The index variable will be used as a counter in the inner loop.

Declare Integer index

// The outer loop positions maxElement at the last element

// to compare during each pass through the array. Initially

// maxElement is the index of the last element in the array.

// During each iteration, it is decreased by one.

For maxElement = arraySize – 1 To Setp – 1

// The inner loop steps through the array, comparing

// each element with its neighbor. All of the elements

// from index 0 through maxElement are out of order,

// they are swapped.

For index = 0 To maxElement – 1

// Compare an element with its neighbor and swap if necessary.

If array [index] > array [index + 1] Then

Call swap(array[index], array[index + 1])

End if

End For

End For

// The swap module accepts two String arguments

// and swaps their contents.

Module swap(String Ref a , String Ref b)

// Local variable for temporary storage

Declare String temp

// Swap the values in a and b.

Set temp = a

Set a = b

Set b = temp

Module display(String Real array[],SIZE)

Display “The students’ name sorted in ascending order: ”

For index = 0 To SIZE – 1

Display names[index]

End for

End module