**Programmer Manual**

Instruction to run the code:

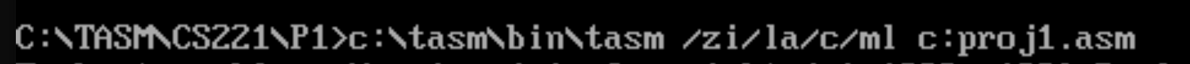
* Name of Source Code (provided): **Proj1.ASM**
* Get a copy of the following files: **Proj1.ASM** and **iofar.lib** and save it to the following drive path: **C:\tasm\tasm\cs221\p1.**
* Click on the **DOS box** icon and watch the console open up, type the following:

**mount c c:\tasm**

* At the DOS box prompt make sure to change directory to your **P1** with the specified path listed.
  + The prompt should now look like:A screenshot of a cell phone

    Description automatically generated
* To Assemble the source file (assuming **TASM.EXE** is in C:\tasm\tasm\bin), type the following line:

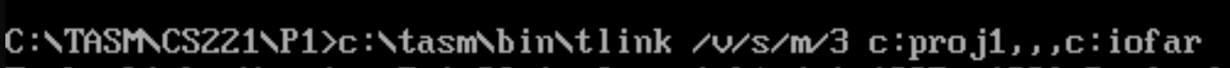
**c:\tasm\bin\tasm /zi/la/c/ml c:proj1.asm**

Console should look like this:****

* To Link the source file (assuming **TLINK.EXE** is in C:\tasm\tasm\bin), type the following line:

**c:\tasm\bin\tlink /v/s/m/3 c:proj1,,,c:iofar**

Console should look like this:



* **Now** **PROJ1.EXE is generated,** to run the program at the prompt type: **Proj1.**

**When the program executes:** It will prompt user for 10 integers, and sort them in ascending order by insertion sort, eventually it will display arr1 and arr2 using two columns format: Unsorted List, and Sorted List.

**Major Procedures and Variables used:**

* **InsertSort procedure**
  + **void InsertSort(iNum,arr1)**
* **Greet procedure**
  + **void Greet()**

**Structure of the Code:**

* To print initial greeting messages to the user by calling Greet procedure;
* It will prompt user for ten integers, and store them in the array **arr1;**
* Then copy all items from array **arr1** into array **arr2;**
* Push **iNum**(total items in the array) in arr1 and address of arr1 onto stack.
* Sort **arr1** using Insertion Sort by calling **InsertSort** procedure;
* Use a loop to print **arr1** and **arr2** in two-column format.

**Functionality of certain aspects of the code as to the project requirements:**

* line 36~108 **Prompt user for 10 integers**
* line 19~20, line 139, line 146 **Insert spaces in row to center the column**
* line 125~154 **Print a table as output to screen**
* line 12~13 **Working with 16-bit integers**
* line 122, line 161~240 **Using the Insertion Sort** **algorithm**
* line 232~238 **clean the stack before returning**