# **PEX 2: Basic Assembly Code**

### *Due Lesson T22 (1630 07 Mar 12)*

**Help Policy**

**AUTHORIZED RESOURCES:** Any, EXCEPT another cadet’s program.

**NOTE:**

* Never copy another person’s work and submit it as your own.
* You must document all help received from sources other than your instructor.
* DFCS will recommend a course grade of F for any cadet who egregiously violates this Help Policy or contributes to a violation by others.

1. Requirements

This PEX is designed to ensure that you have a working knowledge of how to write and debug a program that uses procedures and manipulates data in memory. You will write an assembly language program that stores and retrieves information about USAFA.

Your program should read in the following data for each record

* Squadron Name
* Squadron Number
* Number of Cadets

Your program should continue to read in information about personnel until the user enters ‘none’ for the name.

Your program should allow for three queries to be made to the data base

* Search By Squadron Name
* Search By Number Of Cadets (Can be multiple results)
* Display All Records

Your program should be written using the MARS simulator and should be named **PEX2\_Your Last Name.s**. Use functional decomposition to create at least 4 separate procedures (with arguments):

* AddData (Takes a starting address of a record and Prompts the user to add data, returns 1 if the add was successful and 0 if the user typed in “none”).
* DisplayMenu (return the user selection).
* SearchName (takes the memory location of a name to match and returns the starting address of the record that contains the name)
* PrintRecord (takes the staring address of a record to print and prints it to the screen)

You are not limited to these 5 procedures. You can add more as you see fit.

**Task 1:** Your program should print out this menu of options for the user to choose from:

1. Turn In Requirements

Deliverables

1. An Assembly Code File.
2. Documentation Statement.
3. Sample Run

The following is an example run of the program with user inputs in bold:

Enter Cadet Data

Squadron Name: **Tigers**

Squadron Number: **10**

Number of Members: **105**

Squadron Name: **Blackjacks**

Squadron Number: **21**

Number of Members: **110**

Squadron Name: **Reapers**

Squadron Number: **31**

Number of Members: **105**

Squadron Name: **none**

1. Search by squadron name

2. Search by number of members

3. Display all

4. Quit.

Your selection: **1**

Squadron name: **Tigers**

Squadron Name: Tigers

Squadron Number: 10

Number of Members: 105

1. Search by squadron name

2. Search by number of members

3. Display all

4. Quit.

Your selection: **2**

Number of Members: **105**

Squadron Name: Tigers

Squadron Number: 10

Number of Members: 105

Squadron Name: Reapers

Squadron Number: 31

Number of Members: 105

1. Search by squadron name

2. Search by number of members

3. Display all

4. Quit.

Your selection: **3**

Squadron Name: Tigers

Squadron Number: 10

Number of Members: 105

Squadron Name: Blackjacks

Squadron Number: 21

Number of Members: 110

Squadron Name: Reapers

Squadron Number: 31

Number of Members: 105

1. Search by last name

2. Search by class

3. Display all

4. Quit.

Your selection: **4**

Goodbye!

**PEX 2 Cut Sheet (75 Points)**

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| **Name:**  **Grade: /75** |

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| **Requirements** |  |  |
| **Implementation** | Reads in data using AddData procedure | 15 |
|  | Displays menu using DisplayMenu proceedure | 15 |
|  | Allows For name to be searched using SearchName Proceedure | 15 |
|  | Allows For Search by Squadron | 15 |
|  | Displays all records with PrintRecord Method | 15 |
| **Design** | Poorly Commented | -(5-20) |
|  | Poor Organization | -10 |
|  |  | **(75)** |
| **Penalties** |  |  |
|  | **Vague/Missing Documentation (5%):** | **−** |
|  | **Late Penalty Cap ( %):** | **−** |
|  |  | **−** |

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| --- | --- | --- |
| **Total** |  | **(75)** |