**Assignment Specification: your program should include the following:**

* Functions (should include both: pass by value and pass by reference variables, void function and function returning any value)
* Array of structs (at least one single array of struct)
* Selection and repetition structures as needed
* Add your team members names as a comment in the first line of your program.
* You should print a menu to the user and offer him/her different services.
* Main Services:
  + adding new item.
  + search for specific item.
  + update existing record.
  + delete.
  + Sort.
  + Display.
  + At the start, your program should populate the array(s) from a file and allow the user to edit it. At the end overwrite the same file with the latest contents of the array(s).
  + Provide another statistical report as separate text file e.g. the number of records, with date, time of last update.
* The program should continue running until the user chooses to exit it.
* Ensure to avoid any errors of any type (Run-time error, logical error, and syntax error).
* You can add extra functions if wish to.

[**\\Don’t**](file:///\\Don’t) **mind this assignment topic if you’re reading the I’ve not decided yet with the professor**

**Assignment Topic: Each team should choose a single topic only for your assignment ( Duplicated in not allowed which means within the section the topic is selected by one group only) :**

1. **Hospital System:**
   1. **Arrays:** patientsdetails, medicine, and dose.
   2. **Arrays size:** defined by the user.
   3. **Menu:** Represent the main services explained above
2. **Games System:**
   1. **Arrays:** playersdetails (name,id,age, … ), game name, and score.
   2. **Arrays size:** defined by the user.
   3. **Menu:** Represent the main services explained above
3. **Staff System:**
   1. **Arrays:** staffdetails (name,id,age, … ), job name, and salary.
   2. **Arrays size:** defined by the user.
   3. **Menu:** Represent the main services explained above.
4. **Any suggested system you may propose.**

**Evaluation Rubrics:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **Rubric Mark** | | |
|  | **Criterion** | **Description** | **Functions** | **Array and struct** | **Files** |
| 1 | Functions Declaration & Call | Your functions should show how it helped you to develop more reusable and readable program. Each function should serve correctly to achieve your system goals.  You should use functions overloading and extra methods to achieve your goal. | **2** |  |  |
| 2 | Variables , Struct &Arrays Declaration | Effectively make use of arrays including array of struct in your program(s). This include both local and global variables. Those arrays should be easily browsed and searched. |  | **2** |  |
| 3 | Reading from / Writing to file | Successful file access for reading and writing |  |  | **2** |
| 3 | Program Structure | Comprehensible, well-documented and well-structured programs. Organization of code delivery and quality of code. | **0.5** | **0.5** |  |
| 4 | Error Handling | Expected users' errors should be handled well through:   * Using a proper in-depth analysis of all users' input and limiting all users' invalid entry. * Handling all expected run-time errors. |  | **2** |  |
| 5 | Working Demo, Evaluation, Delivery , & Justification | * Successful live demonstration of your working application. * Clear separation of functions; maintainable code; validation * Evaluation of the effectiveness of your approach. * Confident, well-rehearsed and professional; rational explanation for your chosen stories * Justification of your approach, design, implementation and testing. | **0.5** | **0.5** |  |
| **Total=10** | | | **3** | **5** | **2** |