CS211 Fundamentals of Programming Course Assignment

Assignment Goal: To write a program that contains the usage of functions and arrays

Submission Deadline: **Sunday 15th April, 12 noon for all teams**

Team Size: Each team or group should consist of 3 students including the team leader.

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)
- Arrays (more than single array in your program)
- 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 difference services. 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.

Submission Format:

- You should submit both softcopy (*PDF format)* through Blackboard and hardcopy to your instructor. Also, you should submit the source file in format of c++ file (.cpp)
- Your submission should be delivered in professional appearance. This using the template given, logo, Title, appropriate structure of reports/presentation.
- You will be giving a small presentation (5 minutes per team) explaining your program structure and how you have implement it. All team members should participate in it.
- The presentation will take place in week#13.

Notes:

1. ***Groups must be registered online through Blackboard***
2. *All your submissions must include your academic information (Name, ID, Project Group Number & Name).*
3. ***No** submissions will be accepted through emails.*
4. *Each member of the team must participate equally in the project. Otherwise, if a student didn't participate well in its team's project marks will be deducted according to the inactive student's participation.*

Assignment Topic: Each team should choose a <u>single topic only</u> for your assignment:

1. **Students System:**
    a. **Arrays:** names, courses, and grade.
    b. **Arrays size:** defined by the user.
    c. **Menu:**
        1. Add a student's grade in a course.
        2. Print grades for a certain course and the average of students' grades in this course.
        3. Print the grade letter for all courses of a certain student.
        4. Update the grade of a student in a certain grade.
        5. Delete a certain mark for certain student (use shifting array elements)
        6. Exit

2. **Hospital System:**
    a. **Arrays:** patients names, medicine, and dose.
    b. **Arrays size:** defined by the user.
    c. **Menu:**
        1. Add a patient's medicine and its dose.
        2. Print doses for a certain medicine and the average of medicine's doses.
        3. Print the if the dosage is high or low for all medicines of a certain patient.
        4. Update the dosage of a patient in a certain medicine.
        5. Delete a certain medicine for certain patient (use shifting array elements)
        6. Exit
3. **Games System:**
    a. **Arrays:** players names, game name, and score.
    b. **Arrays size:** defined by the user.
    c. **Menu:**
        1. Add a player's score in a game.
        2. Print scores for a certain game and the average of players' score in this game.
        3. Print the winning state for all games of a certain player.
        4. Update the score of a player in a certain game.
        5. Delete a certain game for certain player (use shifting array elements)
        6. Exit

Evaluation Rubrics:

			Rubric Mark	
	Criterion	**Description**	**Functions**	**Arrays**
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.	**2.5**	
2	Variables & Arrays Declaration	Effectively make use of variables and arrays in your program(s). This include both local and global variables. Those arrays should be easily browsed and searched.		**2.5**
3	Program Structure	Comprehensible, well-documented and well-structured programs. Organization of code delivery and quality of code.	**1.5**	**1.5**
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.		**1**
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.	**1**	
		Total=10	**5**	**5**

CS211 Fundamentals of Programming Course Assignment Submission Template

Team Number in Blackboard#

Section Number #

Chosen Program Topic: □ **Students System** □ **Patients System** □ **Players System**

Team Members:

	Name	ID
1 (Leader)		
2		
3		

Names of Arrays in-use:

List All Functions Prototype (Headers):

Comments:

Add here any comment or note you wish to pinpoint to your instructor.