**Makerere University**

**Faculty of Computing and Informatics Technology**

**Department of Computer Science**

**CSC 1208 Assignment I – 2010/2011**

Theme: **Proper usage of arrays and functions**

**Aim:**

The aim of this assignment is for the student to demonstrate ability to use arrays as a means of storing data and use of functions as means of manipulating data and get information out of it.

**The problem:**

Consider the faculty registrar who has to process results for 1st year 1st semester students. Students offer five courses CSC 1100, CSK 1101, CSC 1104, CSC 1105 and CSC 1106. The courses have credit units 4,4,4,3 and 3 respectively. Lecturers provide course work and exam marks. For each course, course work constitutes 40% of the final mark while the exam constitutes 60% of the final mark. The role of the registrar is to

* Compute the final mark for each student for each course. The final mark must be a whole number
* Compute the grade and grade point of the students for each course they offered. According to senate regulations, grades and grade points are awarded to final marks according to the following criteria

|  |  |  |
| --- | --- | --- |
| Range | Grade | Grade Point |
| 90 – 100 | A+ | 5.0 |
| 80 – 89 | A | 5.0 |
| 75 – 79 | B+ | 4.5 |
| 70 – 74 | B | 4.0 |
| 65 – 69 | C+ | 3.5 |
| 60 – 64 | C | 3.0 |
| 55 – 59 | D+ | 2.5 |
| 50 – 54 | D | 2.0 |
| 45 – 49 | E | 1.5 |
| 40 – 44 | E- | 1.0 |
| 0 – 39 | F | 0.0 |

* Put a comment ‘Retake’ to a student for every course where the Grade Point is less than 2.0
* Compute the cumulative grade point average CGPA for each student. The senate formula for CGPA is GGPA =
* Put a comment “Progress” for any student whose GGPA is greater than 2 and “Stay Put” on a student whose CGPA is less than 2

You are required to create a c program that considers a class of 25 students and:

1. Initializes an array ‘student’ which stores student names
2. Initializes arrays for course work and exam for each course. ‘cw\_csc\_1100’ and ‘ex\_csc\_1100’ store course work and exam marks (respectively) for CSC 1100. The same approach is considered for all other courses
3. Initializes the coursework and exam marks arrays with marks between 0 and 99
4. Write appropriate functions that will generate the final marks, generate grades, generate grade points, generate cumulative grade points, generate comments for students and comments for courses per student
5. Create appropriate arrays for final marks and insert the data there using the appropriate functions
6. Without having to create any extra arrays, use the functions created to generate a report per student that looks like the one bellow.

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Student Name: Ngubiri

Course Unit Final mark Grade Grade Point Course Comment

CSC 1100 43 E- 1.0 Retake

CSK 1101 50 D 2.0

CSC 1104 59 D+ 2.5

CSC 1105 70 B 4.0

CSC 1106 65 C+ 3.5

CGPA 2.47 Overall Comment Progress

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NB

* It is advisable that the indices are used to identify the owners. Eg if student[x] is John, then cs\_csc\_100[x] should be a mark for John since the index is the same

Mode of delivery: Upload the soft copy of the code on muele before the deadline

Yu will be given appointments to present your codes. This will be mostly on weekends