

## ICS 104 LAB – T211 – SEC 65 – Lab Project

### Course Offering System

#### A. Description

The information of offered courses/sections are stored in “**sectionsInfo.txt**” file, such that each line represents a record that corresponds to a unique offered section. Each record contains the following information separated by commas:

- CRN (unique 5 digits)
- Course name
- Section number
- Department
- Number of students
- Day
- Time

You are required to develop a menu-driven program that display the following menu and keep displaying it until the user chooses the exit option.

Course Offering System

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1. View offered sections
2. Search for a section
3. Update a section
4. Delete a section
5. Add new section
6. View Courses Information
7. View departments Information
8. Exit

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Enter your choice:

Below are the details for each possible choice:

## 1. View offered courses

The information of all offered courses shall be displayed in a proper tabular format

## 2. Search for a section

The user can search for a section by one of the following options:

- a) **By CRN:** the user will enter the CRN of the section, and you should display all the information of that section, otherwise you display an error message for not found or invalid CRN
- b) **By course name:** in this case, the user will enter the course name (or part of it), and you should display the information of all matched sections in a proper tabular format.  
Note: your program should ignore the case(lower/upper) or any extra spaces, and find the correct matches regardless.

## 3. Update a section

- The user will enter the CRN of the section,
- then you display the information of that section in a proper tabular format
- the items that can be modified are: day, time, and number of students
- the user can modify one, many, or none of the above items.
- File shall be updated accordingly
- Note: Number of students: should be an int number greater than or equal to 0

## 4. Delete a section

- The user will enter the CRN of the section,
- then you display the information of that section in a proper tabular format
- user needs to confirm deleting the section
- if the user confirms, the corresponding record shall be deleted from the file

## 5. Add new section

- The user should enter all required information as per the record items
- You should validate the user input as follows:
  - o CRN: it should be of 5 digits, and it should not match any of existing CRNs
  - o Number of students: should be an int number greater than or equal to 0
  - o Section number: should be an int number from 1 to 99
  - o Other items: you can accept any input string, but should ignore any leading or trailing spaces

## **6. Print Course Statistics**

For each course, you shall print the following information:

- Course name
- Number of offered sections for that course
- Total number of registered students in all sections offered for that course

## **7. Print Department Statistics**

For each department, you shall print the following information:

- Department name
- Total number of registered students in all sections offered for that department
- Total number of sections offered in that department
- List of unique offered courses in that department, for each course display the following:
  - o Course name
  - o Number of offered sections for that course
  - o Total number of registered students in all sections offered for that course