



Set: A [Morning]

United International University
Dept. of Computer Science & Engineering
Course Code: CSE 1112

Course Title: Structured Programming Language Laboratory
Trimester: Spring 2025
Final Examination

Total Mark: 20

Time: 09:00 AM – 10:00 AM (1 hour)

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Question 01 :

[10]

Write a C program that takes a string as input and prints the number of consonants. Complete the following tasks given below to solve the problem.

[The use of any string library functions is strictly prohibited.]

Vowels: a, e, i, o, u]

- Write a function named `int get_length(char str[])` which returns the length of the string `str`.
- Write a function named `int count_vowel(char str[])` which returns the number of vowels present in the string `str`.
- Write a function named `int count_consonant(char str[])` which returns the number of consonants present in the string `str`. You need to use both functions (a) and (b).
- Write the `main()` function to take input from the user, call the required functions, and print the number of consonants.

Sample Input	Sample Output
input	3
sample	4

Question 02 : Course Registration System

[10]

Suppose the university has introduced a new system to manage online course registrations. And you were tasked with creating the system using C programming. Every course is assigned a special course code in the following format:

AAA-XXXX-YYY-X

- **AAA**: Short form of the department (e.g., CSE, EEE, BBA)
- **XXXX**: A unique code related to each individual course (1111, 1112, etc.)
- **YYY**: A 3-digit code where the first two digits represent the year (e.g., 25 = 2025), and the last digit is the semester (1 = Spring, 2 = Summer, 3 = Fall)
- **X**: Number of credits

For example, CSE-1111-253-3 means a course of the CSE dept., in Fall 2025, of 3 credits.

Each course is stored in a structure with the attributes: Course Code (string), Course Title (string), Credit (float), Enrolled Students (int), and No. of Instructors (int).

Tasks: Write the following functions

a) **void addCourse(struct Course courses[], int count)**: Takes the course code, course title, enrolled students, and no. of instructors as input from the user and adds it to an array named courses. Also, updates the total count of the courses added.

Use an array of structures to store up to 50 courses.

b) **void printSummary(struct Course courses[], int count)**: Prints course code, course title, credit, number of enrolled students, number of instructors, and average students per instructor (rounded down) for all the courses in a tabular format.

c) **int isOffered(char course_name[], char semester[], struct Course courses[], int count)**: Takes the course name and a semester name (Fall, Spring, or Summer) from the user. Then searches the courses array and Returns 1 if the course is offered in **that semester** (Hint: last digit of YYY), otherwise 0.

Implement a **menu-driven approach** using if-else/switch case.

Sample Input and Output are given below

Course Registration System

1. Add a new course
2. Display all courses
3. Find out if a course is offered or not
4. Exit

Enter your choice: 1
Enter course name: SPL
Enter course code: CSE-1111-252-3
Enrolled students: 75
No. of Instructors: 7
Course added successfully.

Enter your choice: 1
Enter course name: SPL Lab
Enter course code: CSE-1112-252-1
Enrolled students: 70
No. of Instructors: 6
Course added successfully.

Enter your choice: 2

Courses Summary:

Code: CSE-1111-252-3, Title: SPL, Credit: 3, Enrolled students: 75, Instructors: 7, Average stu/ins: 11

Code: CSE-1112-252-1, Title: SPL Lab, Credit: 1, Enrolled students: 70, Instructors: 6, Average stu/ins: 12

Enter your choice: 3

Give the course name that you want to inquire: SPL

Term: Fall

Not offered

Enter your choice: 3

Give the course name that you want to inquire: SPL

Term: Summer

Offered

Enter your choice: 4

Exiting the system...