

BITS PILANI, DUBAI CAMPUS
DUBAI INTERNATIONAL ACADEMIC CITY, DUBAI

FIRST SEMESTER 2025 – 2026

COURSE: CSF214 (Object Oriented Programming)

COMPONENT: Lab 1

Week: 1

Aim:

To instruct on structured programming in C and cultivate essential problem-solving skills utilizing user-defined data types and basic constructions.

Objective:

Utilize arrays, strings, functions, and structures to develop programs that enhance your comprehension of data organization and modular code writing.

Problem Statements:

1. Give a student a structure that includes:

roll_no (integer)
name (string)
marks[5] (float)

Create a C program to:

- Enter the information for n pupils.
- Determine each student's average score.
- Students with averages higher than 75% should be displayed.

Example Input and Output:

```
Enter number of students: 2
```

```
Enter details for Student 1:
```

```
Roll No: 101
```

```
Name: Alice
```

```
Marks: 80 75 90 85 95
```

```
Enter details for Student 2:
```

```
Roll No: 102
```

```
Name: Bob
```

```
Marks: 65 70 60 68 72
```

```
Students scoring above 75%:
```

```
Roll No: 101
```

```
Name: Alice
```

```
Average Marks: 85.00
```

2. Create a C program to (Do not use built-in functions):

- Fill an array with n integers.
- Eliminate values that are duplicates.
- After eliminating duplicates, display the array.

Example Input and Output:

```
Enter number of elements: 8
Enter elements: 1 2 3 2 4 1 5 3
```

```
Array after removing duplicates: 1 2 3 4 5
```

3. Make two structures:

- Date with the day, month, and year.
- A patient has an ID, a name, a disease, and an admission date (type Date).

Make a C program that does the following:

- Enter information for n patients.
- Let the user pick a month and year.
- Show the patients who were admitted during that month and year.

Example Input and Output:

```
Enter number of patients: 3
```

```
Patient 1:
ID: 1
Name: Rahul
Disease: Dengue
Admission Date (dd mm yyyy): 12 08 2023
```

```
Patient 2:
ID: 2
Name: Priya
Disease: Flu
Admission Date (dd mm yyyy): 05 07 2023
```

```
Patient 3:
ID: 3
Name: Arjun
Disease: Typhoid
Admission Date (dd mm yyyy): 25 08 2023
```

```
Enter month and year to search: 08 2023
Patients admitted in 08/2023:
ID: 1, Name: Rahul, Disease: Dengue, Date: 12-08-2023
ID: 3, Name: Arjun, Disease: Typhoid, Date: 25-08-2023
```

4. Make a C program that:

- Take a paragraph from the user.
- Count how many times each word that is different from the others shows up.
- Show the result, without caring about case or punctuation.

Example Input and Output:

```
Enter paragraph:
The quick brown fox jumps over the lazy dog. The fox was quick.
```

Word Frequencies:

the - 3

quick - 2

brown - 1

fox - 2

jumps - 1

over - 1

lazy - 1

dog - 1

was - 1