

5 Year Integrated M. Sc. (Computer Science)
Semester-I
Advanced Programming
Assignment - I
2022

- Note :
- (1) Write modular programs (using functions)
 - (2) Do not use global variables
 - (3) Use proper variable names
 - (4) Program should contain program definition as comments and should have proper indentation

LAST DATE OF SUBMISSION : 20th APRIL 2022

Structures and Unions

1. Write a program to create structure Student with student's rollno, name and marks of three subjects (Maths, Science and English) and display the details of student with total marks of all subjects along with the percentage in proper format.
2. Write a program to create structure Num (int n1, int n2, int n3). Display total and average of n1, n2 and n3.
3. Write a program to create structure Time (int h, int m). Read a value as minutes from user to display new time after adding the value to minutes in Time structure.
4. Write a program to create structure employee with employee's id, name and salary (Basic Salary, HRA, DA, OA). Calculate gross salary for each employee.
5. Write a program to write student information using structure and enter record and display them in ascending order of their percentage in proper format.

6. Write a program to define a structure called book. Write a program to read information about 10 books and display books details in ascending order of price in proper format.
7. In a program declare following structure member: name, code, age, weight and height. Read all members of the structure for 15 persons and find list of persons with all related data whose weight > 50 and height > 40 and print the same with suitable format and title.
8. Define a structure called cricket that will classify the following information:-

- a. Player name
- b. Team name
- c. Batting average

Using cricket declare and array player with 50 elements and write a program to read information about the players and print team wise listing containing names of players with their batting average.

9. Given a player name write a program to show all the details of the player.
10. Write a complete 'c' program that will accept the following information for each team in either football or baseball league:
 - a. Team name
 - b. City
 - c. Number of wins

For a baseball team, add the following information

- I. Number of hits
- II. Number of runs
- III. No. of errors
- IV. No. of extra-timing games

Similarly add the following for a football team

- I. No. of ties
- II. No. of field goals
- III. No. of touchdowns
- IV. No. of turn overs

Enter this information for all the teams in the league then reorder and print the list of teams according to their win-lose records.

11. Write a program to maintain the inventory of the books in a bookshop. The details of the book include:

- a. Author
- b. Title
- c. Price
- d. Publisher
- e. Stock position

Whenever a customer wants a book, the shopkeeper inputs the title and author of the books and the program should reply whether it is available or not by looking through the list of books. If the book is in the list then the system displays the book's details and asks for no. of copies. If the book is not in the list, an appropriate message should be displayed. If the no. of copies are available, the total cost of the book is displayed; otherwise, display an appropriate message.

12. Write a complete 'C' program that will accept the following information for each vehicle, either two-wheeler and four-wheeler :-

- a. Vehicle Name
- b. Vehicle Price
- c. Vehicle Type [2/4]

For a two-wheeler, add the following information

- I. Mileage
- II. Type (Geared / Gearless)

Similarly add the following for a four-wheeler

- I. Usage(Auto / Manual)
- II. Engine Number
- III. Type (Heavy / Light)

Enter this information for at least 10 vehicles and print list of 2 & 4 wheeler vehicles accordingly.

