

**C Programming Preparatory Assignments**  
*Feb 2020 – PG batches of Sunbeam Infotech*

1. Input a string from user on command line. String may have multiple commas e.g. "Welcome,to,Sunbeam,CDAC,Diploma,Course". Print each word individually. Hint: use strtok() function.
2. Simulate string library functions strcpy, strcat, strcmp and strrev.
3. Maintain an array of ten positive numbers. Initially all elements are set to zero (indicating array is empty). Write a menu driven program to perform operations like add number, delete number, find maximum number (along with its index), find minimum number (along with its index) and sum of numbers. While adding number display available indexes and user can select any of them. If no index is free, display appropriate message. Also while deleting number display available indexes along with values and user can clear value there (set to zero).
4. Create an array of 10 books with details id, name, price. Sort array in descending order of price using merge sort. Also sort array in ascending order of name using library function qsort().
5. Input employee information from the user including his employee id, name, address, salary, birth date and date of joining. Find the age of person when he joined company (in years) and his experience till date (in months). Also print the date when his probation period is over, assuming that probation period is of 90 days from date of joining.
6. Implement a circular queue of students. Each student information includes roll, name, std, subject names and corresponding subject marks. Assume that each student hold subject names & marks of 6 subjects. Write a menu-driven program to implement push and pop functionality.
7. Implement doubly linked list of bank accounts. Each account have information including id, type, balance and account holder. The account holder details includes name, address & contact details. Write an menu-driven program to implement add first, add last, display all (forward), display all (backward), find by account id, find by account holder name, delete all functionalities.
8. A CSV file contains movies data in given form. Read the file and load data into a singly linked list of movie objects. Also give facility to find movies by name and by genre.  
movieid,title,genres  
1,Toy Story (1995),Adventure|Animation|Children|Comedy|Fantasy  
2,Jumanji (1995),Adventure|Children|Fantasy  
3,Grumpier Old Men (1995),Comedy|Romance  
4,Waiting to Exhale (1995),Comedy|Drama|Romance  
5,Father of the Bride Part II (1995),Comedy  
6,Heat (1995),Action|Crime|Thriller  
7,Sabrina (1995),Comedy|Romance  
8,Tom and Huck (1995),Adventure|Children  
9,Sudden Death (1995),Action  
10,GoldenEye (1995),Action|Adventure|Thriller
9. An inventory management system needs to manage data of the items into binary file. Each item have id, name, price and quantity. Write a menu-driven program to implement add, find, display all, edit and delete operations from the items file. Order id (int) should be generated automatically and must be unique.