**DATA STRUCTURE AND ALGORITHMS LAB**

**SUBJECT CODE: PCC CS391**

**Odd Semester\_2024**

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| **ASSIGNMENTS** | **MODULE DETAILS** | **EEPERIMENT DETAILS** | **Date of Experiment** | **Date of Submission** |
| **ARRAY** | | | | |
| **Assignment 1** | Array Operations | Write the C programs to implement array operations: a)    Insert a number in to a specific position of an array b)     Delete a number from a specific position of an array c)     Display the elements of an array | GR-A  22/07/2024  GR-B  25/07/2024 | GR-A  29/07/2024  GR-B  01/08/2024 |
| **LINKED LIST** | | | | |
| **Assignment 2** | Single Linked List Creation Operation | Write a C program to Create and Display a Single Linked List. | GR-A  29/07/2024  GR-B  01/08/2024 | GR-A  05/08/2024  GR-B  8/08/2024 |
| **Assignment 3** | Single Linked List Insertion Operations | Write the C programs for the following operations: a) Insert a node at the beginning of a Single Linked List b) Insert a node at the end of a Single Linked List c) Insert a node at a specific position of a Single Linked List | GR-A  05/08/2024  GR-B  8/08/2024 | GR-A  12/08/2024  GR-B  14/08/2024 |
| **Assignment 4** | Single Linked List Deletion Operations | Write the C programs for the following operations: a) Delete a node from the beginning of a Single Linked List b) Delete a node from the end of a Single Linked List c) Delete a node from a specific position of a Single Linked List | GR-A 12/08/2024  GR-B 14/08/2024 | GR-A  19/08/2024  GR-B  22/08/2024 |
| **Assignment 5** | Circular Linked List Insertion Operations | i)Write a C program to Create and Display a Circular Linked List. ii) Write the C programs for the following operations: a) Insert a node at the beginning of a Circular Linked List. b) Insert a node at the end of a Circular Linked List. | GR-A  02/09/2024  GR-B  29/08/2024 | GR-A  09/09/2024  GR-B  05/09/2024 |
| Circular Linked List Deletion Operations | Write the C programs for the following operations: a) Delete a node from the beginning of a Circular Linked List.  b) Delete a node from the end of a Circular Linked List. |
| **Assignment 6** | Double Linked List Insertion Operations | Write a C program to Create a Double Linked List and implement the following operations:  i) Insert a node at the beginning of a Double Linked List.  i)Insert a node to a specific position of a Double Linked List.  iii) Insert a node at the end of a Double Linked List.  Double Linked List  [Consider first and last position. | GR-A  09/09/2024  GR-B  12/09/2024 | GR-A  18/09/2024  GR-B  19/09/2024 |
| Double Linked List Deletion Operations | Write a C program to delete a node from a specific position of a Double Linked List [Consider first and last position]. |
| **Assignment 7** | Circular Double Linked List Insertion Operations | Write a C program to create a Circular Double Linked List and to insert a node to a specific position of a Circular Double Linked List [Consider first and last position]. | GR-A  18/09/2024  GR-B  19/09/2024 | GR-A  23/09/2024  GR-B  26/09/2024 |
| Circular Double Linked List Deletion Operations | Write a C program to delete a node from a specific position of a Circular Double Linked List [Consider first and last position]. |
| **STACK** | | | | |
| **Assignment 8** | PUSH and POP Operations of Stack using Array | Write a C program to implement PUSH and POP operations of STACK using array. | GR-A  23/09/2024  GR-B  26/09/2024 | GR-A  30/09/2024  GR-B  04/10/2024 |
| **Assignment 9** | PUSH and POP Operations of Stack using linked list | Write a C program to implement PUSH and POP operations of STACK using linked list. | GR-A  30/09/2024  GR-B  04/10/2024 | GR-A  21/10/2024  GR-B  24/10/2024 |
| **Assignment 10** | Recursion using Stack | Write the C programs using recursion for the followings: a) Factorial of a number b) Fibonacci Series c) GCD of two numbers | GR-A  21/10/2024  GR-B  24/10/2024 | GR-A  04/11/2024  GR-B  06/11/2024 |
| **QUEUE** | | | | |
| **Assignment 11** | Insert and Delete Operations of Queue using array | Write a C program to implement Insert and Delete operations of QUEUE using array. | GR-A  04/11/2024  GR-B  06/11/2024 | GR-A  11/11/2024  GR-B  14/11/2024 |
| **Assignment 12** | Insert and Delete Operations of Queue using linked list | Write a C program to implement Insert and Delete operations of QUEUE using linked list. | GR-A  11/11/2024  GR-B  14/11/2024 | GR-A  18/11/2024  GR-B  21/11/2024 |
| **SORTING** | | | | |
| **Assignment 13** | Sorting Algorithm | Write the C programs for the followings: a) Bubble Sort algorithm. b) Selection Sort algorithm. c) Insertion Sort algorithm | GR-A  18/11/2024  GR-B  21/11/2024 | GR-A  25/11/2024  GR-B  28/11/2024 |
| **SEARCHING** | | | | |
| **Assignment 14** | Searching Operations | Write the C programs for the followings: a) Linear search algorithm b) Binary search algorithm | GR-A  25/11/2024  GR-B  28/11/2024 | GR-A  2/12/2024  GR-B  5/12/2024 |