LOVELY PROFESSIONAL UNIVERSITY

Academic Task No. 1

School of Computer Applications

Faculty of Technology & Sciences

Name of the faculty member : Dr S Jahangeer

Course Code: CAP 770

Course Title: Data Structure Laboratory

Program: BCA/MCA

Term: 21222

Max. Marks: 30

Is Rubric Applicable: NA

Date of Allotment: 02-11-2021

Date of Submission: 02-18-2021

Important Guidelines:

1. All questions in this Academic Task are compulsory.

2. It is mandatory to attempt all questions of the assignment in your own handwriting on A4 size sheets/pages with a blue colour ink pen. Any other mode of attempt (typed or printed codes or table) except hand written/drawn will not be accepted/considered as valid submission(s) under any circumstances.

3. Every attempted sheet/page should carry clear details of student such as Name, Registration number, Roll number, Question number and Page number. The page numbers should be written clearly on the bottom of every attempted sheet in a prescribed format as: for page 1; **Page 1 of 4**, for page 2; **Page 2 of 4**, for page 3; **Page 3 of 4** and for page 4; **Page 4 of 4**, in case your assignment/document is of 4 pages.

4. After attempting the answer(s), student needs to take photograph of each of these answer sheets/pages and needs to convert the **jpeg** format images into a sequential single **pdf** format document (can be done with many free online available converters).

5. This PDF file should be uploaded onto the UMS interface on or before the last date of the submission.

6. Refrain from indulging into plagiarism as copy cases will be marked zero.

Set:-1

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different	Write a program to insert an item in a stack	• Logic • Effectiveness towards the solution • Originality • Formatting	1. Student will learn about traversing, inserting, and deleting elements in stack.

		methods for stacks. 3. apply appropriate data structures to solve real world problems efficiently			
2	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods for queue 3. apply appropriate data structures to solve real world problems efficiently	Write a code to find the frequency of prime numbers from a stack implemented using linked list following stack rules.	• Logic • Effectiveness towards the solution • Originality • Formatting	1. Student will learn about inserting and deleting elements from queue using sequential representation
3	**List attached**	1. apply appropriate data structures to solve real world problems efficiently 2. demonstrate different methods for stack 3. apply appropriate data structures to solve real world problems efficiently	Write a program to count number of vowels from a stack	• Logic • Effectiveness towards the solution • Originality • Formatting	1. Student will learn about inserting and deleting elements from stack using sequential representation

Set:-2

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List**	1. understand	Write a code to		1. Student will

	attached	how basic data structures are represented in memory 2. demonstrate different methods for stacks. 3. apply appropriate data structures to solve real world problems efficiently	find the frequency of a number among N numbers from a stack named as DATA		learn about traversing, inserting, and deleting elements in stack.
2	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods for queues 3. apply appropriate data structures to solve real world problems efficiently	Write a code to insert an element in a queue	• Logic • Effectiveness towards the solution • Originality • Formatting	1. Student will learn about inserting and deleting elements from queue using sequential representation
3	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods for stack 3. apply appropriate data structures to solve real world	Write a code to implement stack using linked list		1. Student will learn about inserting and deleting elements from stack .

		problems efficiently			

Set:-3

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods for queue. 3. apply appropriate data structures to solve real world problems efficiently	Write a code to delete three values from a queue	• Logic • Effectiveness towards the solution • Originality • Formatting	1. Student will learn about traversing, inserting, and deleting elements from queue.
2	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods stack 3. apply appropriate data structures to solve real world problems efficiently	Write a program to delete the first element from array.		1. Student will learn about inserting and deleting elements from stack using sequential representation
3	**List attached**	1. understand how basic data structures are represented in	Write a code to display the elements of		1. Student will learn about inserting and deleting

		memory 2. demonstrate different methods of stacks 3. apply appropriate data structures to solve real world problems efficiently	stack using linked list represenation.		elements from stack.

Set:-4

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods for stack. 3. apply appropriate data structures to solve real world problems efficiently	Write a code to find the sum of all odd numbers from stack	• Logic • Effectiveness towards the solution • Originality • Formatting	1. Student will learn about traversing, inserting, and deleting elements in stack.
2	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods stack 3. apply appropriate data	Write a program to insert the first element in array.		1. Student will learn about inserting and deleting elements from stack using sequential representation

		structures to solve real world problems efficiently			
3	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods queue 3. apply appropriate data structures to solve real world problems efficiently	Write a code to find the sum of all odd numbers from Queue		1. Student will learn about inserting and deleting elements from queue using sequential representation

Set:-5

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods for stack. 3. apply appropriate data structures to solve real world problems efficiently	Write a code to reverse the elements of stack and then find the index of minimum valued number using array	• Logic • Effectiveness towards the solution • Originality	1. Student will learn about traversing, inserting, and deleting elements in linked list.
	List attached	1. understand how basic data	Write a code to		1. Student will learn about

2		structures are represented in memory 2. demonstrate different methods for queue 3. apply appropriate data structures to solve real world problems efficiently	delete the minimum valued item among N numbers from a queue	• Formatting	inserting and deleting elements from queue using sequential representation
3	**List attached**	1. understand how basic data structures are represented in memory 2. demonstrate different methods queue 3. apply appropriate data structures to solve real world problems efficiently	Write a code to insert a node in queue using linked list		1. Student will learn about inserting and deleting elements from queue.

SET:-6

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List attached**	4. understand how basic data structures are represented in memory 5. demonstrate	Write a program to add a node after a particular node identified by the value of a node in a linked list.		2. Student will learn about traversing, inserting, and deleting elements in

		different methods for stack. 6. apply appropriate data structures to solve real world problems efficiently		• Logic • Effectiveness towards the solution • Originality • Formatting	linked list.
2	**List attached**	4. understand how basic data structures are represented in memory 5. demonstrate different methods for queue 6. apply appropriate data structures to solve real world problems efficiently	Write a code to search an element from a queue		2. Student will learn about inserting and deleting elements from queue using sequential representation
3	**List attached**	4. understand how basic data structures are represented in memory 5. demonstrate different methods queue 6. apply appropriate data structures to solve real world problems efficiently	Write a code to find the frequency of prime numbers from a queue using queue rules.		2. Student will learn about inserting and deleting elements from queue.

SET:-7

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List attached**	7. understand how basic data structures are represented in memory 8. demonstrate different methods for stack. 9. apply appropriate data structures to solve real world problems efficiently	Write a program to delete a particular node(on the basis of data item) from a linked list.	• Logic • Effectiveness towards the solution • Originality • Formatting	3. Student will learn about traversing, inserting, and deleting elements in linked list.
2	**List attached**	7. understand how basic data structures are represented in memory 8. demonstrate different methods for queue 9. apply appropriate data structures to solve real world problems efficiently	Write a code to solve postfix notation expressions.		3. Student will learn about inserting and deleting elements from queue using sequential representation
3	**List attached**	7. understand how basic data structures are represented in memory 8. demonstrate different methods queue	Write a code to reverse the contents of an array using stack.		3. Student will learn about inserting and deleting elements from queue.

		9. apply appropriate data structures to solve real world problems efficiently			

SET:-8

S. No.	Roll No.	Objectives of Academic Activity	Topic/Question Details	Evaluation Parameters	Expected Outcomes
1	**List attached**	10. understand how basic data structures are represented in memory 11. demonstrate different methods for stack. 12. apply appropriate data structures to solve real world problems efficiently	Write a code to display the values of stack in reverse order	• Logic • Effectiveness towards the solution • Originality • Formatting	4. Student will learn about traversing, inserting, and deleting elements in linked list.
2	**List attached**	10. understand how basic data structures are represented in memory 11. demonstrate different methods for queue 12. apply appropriate data structures to solve real world problems	Write a code to display the occurrence of prime number from a stack of N elements		4. Student will learn about inserting and deleting elements from queue using sequential representation

		efficiently			
3	**List attached**	10. understand how basic data structures are represented in memory 11. demonstrate different methods queue 12. apply appropriate data structures to solve real world problems efficiently	Write a code to delete the element from the middle of array.		4. Student will learn about inserting and deleting elements from queue.

Student Roll numbers with Set number Detail

☑	RegisterationNumber	Name	Set Assigned	RollNumber
☑	12111861	Srishti Saini	1	RD2112A01
☑	12111670	Jayshri Lal Pandit	2	RD2112A03
☑	12112590	Sarthak Verma	3	RD2112A04
☑	12112598	Anwesha Singh	4	RD2112A05
☑	12113019	Md Aftab Quraishi	5	RD2112A06
☑	12113027	Anjali Prasad	6	RD2112A07
☑	12108999	Deepak Kumar Prajapati	7	RD2112A08
☑	12108986	Bharti	8	RD2112A09
☑	12109070	Nikita Kumari	1	RD2112A10
☑	12106969	Chorge Nishant bhagwan	2	RD2112A11
☑	12107058	Manash Ranjan Purohita	3	RD2112A12

☑	12107037	Shobhit Pandey	4	RD2112A13
☑	12107039	Pradeep Chauhan	5	RD2112A14
☑	12107030	Vivek Kumar	6	RD2112A15
☑	12107075	Garnipudi Siva Sai Kiran	7	RD2112A16
☑	12107106	Utkarsh Singh Chouhan	8	RD2112A17
☑	12107108	Shashi Kumar	1	RD2112A18
☑	12107069	Tannu Priya	2	RD2112A19
☑	12107168	Aman Kumar	3	RD2112A20
☑	12107142	Tapas Dey	4	RD2112A21
☑	12107144	Rijuan Mallick	5	RD2112A22
☑	12107372	Chandra Sekhar Baksi	6	RD2112A23
☑	12107343	Yash Tandan	7	RD2112A24
☑	12107352	Sahil	8	RD2112A25
☑	12107389	Aklesh Kumar	1	RD2112A26
☑	12107390	Sujal Kumar Gupta	2	RD2112A27
☑	12107386	Manish Kumar Choudhary	3	RD2112A28
☑	12107402	Komal Singh	4	RD2112A29
☑	12107418	Madhav Jha	5	RD2112A30
☑	12107304	Raghuvansh Mani Tiwari	6	RD2112A31
☑	12107216	Paras Sen	7	RD2112A32
☑	12107218	Mukesh Patra	8	RD2112A33
☑	12107241	Subhash Chandra	1	RD2112A34
☑	12107248	Rahul Kumar	2	RD2112A35
☑	12107249	Ankit Raj	3	RD2112A36
☑	12106812	Abhishek Kumar	4	RD2112A37
☑	12106759	Akash Mondal	5	RD2112A38
☑	12106780	Akash Kumar Mall	6	RD2112A39
☑	12106860	Prabhav Vaishnav	7	RD2112A40

☑	12106871	Raman Kumar	8	RD2112A41
☑	12106877	Anil Kumar	1	RD2112A42
☑	12106882	Bhaskarayini Bhargava	2	RD2112A43
☑	12106562	Aviral Shukla	3	RD2112A44
☑	12106128	Harshit Khodani	4	RD2112A45
☑	12106133	Aprajita Kumari	5	RD2112A46
☑	12102666	Arunbakam Nagaraju Abhinay	6	RD2112A47
☑	12104517	Arun Pratap Singh	7	RD2112A48
☑	12105488	Amresh Kumar	8	RD2112B49
☑	12106006	Astuti	1	RD2112B50
☑	12103717	Apurwa	2	RD2112B51
☑	12107507	Jasmeen	3	RD2112B52
☑	12107456	Shubham Khosla	4	RD2112B53
☑	12108423	Megha Garhkoti	5	RD2112B54
☑	12108382	Akash Raj	6	RD2112B55
☑	12108385	Ms. Bhawna Kewlani	7	RD2112B56
☑	12108480	Nitin Agrahari	8	RD2112B57
☑	12108481	Shiv Sundar Das	1	RD2112B58
☑	12108451	Shubham Raj Keshri	2	RD2112B59
☑	12108465	Akanksha	3	RD2112B60
☑	12108329	Shreyansh Shekhar	4	RD2112B61
☑	12108348	Aniket Kumar	5	RD2112B62
☑	12108372	Shalini kumari	6	RD2112B63
☑	12108305	Krishna Kumar	7	RD2112B64
☑	12108235	Santosh Kumar	8	RD2112B65
☑	12108245	Abhay Kumar	1	RD2112B66
☑	12108247	Saksham Arora	2	RD2112B67
☑	12108691	Jain Harshitkumar	3	RD2112B68

		Gopalbhai		
☑	12108565	Krrish Kumar	4	RD2112B69
☑	12108696	Vashi Dattpalsinh Ajitsinh	5	RD2112B70
☑	12108739	Reza Yawari	6	RD2112B71
☑	12108052	Deepak Vishwakarma	7	RD2112B72
☑	12108080	Shivam Kumar	8	RD2112B73
☑	12108071	Maulik Jain	1	RD2112B74
☑	12107974	Sirjanpreet Kaur	2	RD2112B75
☑	12108193	Md.Ghulam Azad Ansari	3	RD2112B76
☑	12108195	Afsar Alam	4	RD2112B77
☑	12108164	Anchal Gupta	5	RD2112B78
☑	12108142	Irshad Khazir Bhat	6	RD2112B79
☑	12108134	Vishal Kumar	7	RD2112B80
☑	12107695	Jobin S	8	RD2112B81
☑	12107872	Munier Eisa Elnour Hassab	1	RD2112B82
☑	12110343	Ayan Pakhira	2	RD2112B83
☑	12110345	Ashish Dubey	3	RD2112B84
☑	12110950	Pushkar Dahal	4	RD2112B85
☑	12110903	Mohammad Suliman Joya	5	RD2112B86
☑	12113030	Kamalesh Ray	6	RD2112B87
☑	12112715	Vishal Pratap Singh	7	RD2112B88
☑	12112027	Ajay Singh	8	RD2112B89
☑	12111974	Pallavi	1	RD2112B90
☑	12111879	Sunita	2	RD2112B91
☑	12111883	Muskan	3	RD2112B92
☑	12111457	Adarsh Kumar	4	RD2112B93
☑	12111549	Ankit Nayak	5	RD2112B94
☑	12111537	Ravi Kumar	6	RD2112B96

☑	12111600	Shyam Kumar	7	RD2112B97
☑	12111590	Shambhavee Kumari	8	RD2112B98