








# FRANCIS XAVIER<sup>TM</sup> ENGINEERING COLLEGE AN AUTONOMOUS INSTITUTION

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 /fxengg  /fxengg  /fx\_ec  /fxengg

 /francisxavierengineeringcollege

## Department of Computer Science and Engineering

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**  
**4<sup>TH</sup> BOARD OF STUDIES MEETING**

FXEC\CSE\2020-2021\BOS-4 Minutes

Mode: Through Online (Meeting Link: <http://meet.google.com/zka-bqkw-oyw>)

Venue: Google Meet

Date & Time: 12.01.2021 & 11:00AM

**AGENDA**

BoS / CSE 4.1: Welcome address and Opening Remarks by Chairman, Board of studies in the Department of Computer Science and Engineering

BoS/CSE 4.2: Confirmation of the Minutes of the 3<sup>rd</sup> meeting of Board of studies in the department of Computer Science and Engineering held on 25.07.2020 and Action taken report of 3<sup>rd</sup> meeting of Board of studies

BoS /CSE 4.3: Business brought forward by the Chairman, Board of Studies

4.3.1. Value Added Courses

4.3.2 Minor Courses

4.3.3 Online Courses

4.3.4 Industry Supported Courses

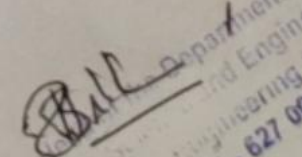
4.3.5 Industry Interaction/Internship

4.3.6 Syllabus Revision for 19CS3601-Data Structures

4.3.7 Curriculum & Syllabus for B.Tech. Computer Science and Business Systems

BoS / CSE 4.4: Suggestions given by the BOS Members

BoS / CSE 4.5: Any other items for discussion

  
Computer Science and Engineering Department  
Francis Xavier Engineering College  
Munaiyeli - 627 003

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING  
MINUTES OF THE MEETING**

The 4<sup>th</sup> Meeting of the Board of studies of the Department of Computer Science and Engineering was held on 12<sup>th</sup> January 2021 at 11 am through online.

The following members were present:

1. **Head of BOS**  
Prof. P.Brundha, Professor/Head,  
Department of Computer Science and Engineering,  
Francis Xavier Engineering College,  
Tirunelveli
  
2. **University Nominee**  
**Dr.S.Padmavathi**  
Professor,  
Department of Information Technology,  
Thiagarajar College of Engineering,  
Madurai-625015
  
3. **Academic Experts**  
**Dr.E.Ilavarasan**  
Professor/CSE,  
Pondicherry Engineering College,  
Pondicherry- 605014.  
**Dr.D Murugan**  
Professor/CSE,  
Manonmanium Sundaranar University,  
Tirunelveli-627012
  
4. **Industrial Experts**  
**Mr.B.Durgasanth**  
Senior Software Development,  
Rishon Communication Technologies,  
Tirunelveli
  
5. **Alumni Members**  
**Mr.A.Alan Selva Denis**  
System Engineer  
Tata Consultancy Services  
Chennai -603103

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*B.L.L*  
Head of the Department  
Computer Science and Engineering  
Francis Xavier Engineering College  
Tirunelveli - 627 003

6. Internal Members

S. No	Name of the Member	Designation
1.	Dr.S.Balaji	Professor/CSE
2.	Dr.G.Aravind Swaminathan	Professor/CSE
3.	Dr.S.Gomathi	Professor/CSE
4.	Dr.C.Yesubhai Rubavathy	Professor/CSE
5.	Dr.E.Manohar	Assoc. Prof / CSE
6.	Mr.J.Zahariya Gabriel	AP/ CSE
7.	Mrs.J.Priskilla Angel Rani	AP/ CSE
8.	Mrs.S.Jasmine Mary	AP/ CSE
9.	Mr.K.Sivakumar	AP/ CSE
10.	Mrs.N.Raja Priya	AP/ CSE
11.	Mr.S.Malaiarasan	AP/ CSE
12.	Mrs.P.Jenifer	AP/ CSE
13.	Mrs.M.Sharon Nisha	AP/ CSE
14.	Mrs.B.Benita	AP/ CSE
15.	Mr.J.A.Jevin	AP/ CSE
16.	Mrs.P.J.Beslin Pajila	AP/ CSE
17.	Mr.M.Mukesh krishnan	AP/ CSE
18.	Mr.M.A.Y.Peer Mohamed	AP/ CSE
19.	Ms.R.Valarmathi	AP/ CSE
20.	Mrs.M.Manimegalai	AP/ CSE
21.	Mrs.A.Muthulakshmi	AP/ CSE

7. Ex-officio Members

Principal, Francis Xavier Engineering College, Tirunelveli

Professor Academics, Francis Xavier Engineering College, Tirunelveli

Controller of Examinations, Francis Xavier Engineering College, Tirunelveli

**Members Absent - Nil**

Board of Studies Meeting started with a prayer by Professor Dr.G.Aravind Swaminathan

**BoS / CSE 4.1: WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

The Chairman, BOS of the Computer Science and Engineering welcomed and introduced the members of 4<sup>th</sup> Board of Studies and thanked each of them for sparing their valuable time to attend the meeting.

**BoS / CSE 4.2: TO CONFIRM THE MINUTES OF THIRD BOS MEETING HELD ON 25.07.2020**

The minutes of the Third Board of Studies meeting held on 25.07.2020 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 3<sup>rd</sup> Academic Council.

**BoS / CSE 4.3: Business brought forward by the Chairman, Board of Studies**

**BoS / CSE 4.3.1: TO CONFIRM AND APPROVE the Value Added Courses**

3 Value Added Courses with one 2 credits and two 1 credit courses were defined and syllabus were framed and it was presented by the chairman BOS

✓ RESOLVED TO APPROVE the value added courses

**BoS / CSE 4.3.2: TO CONFIRM AND APPROVE the Minor Courses**

The Minor Courses-Specialization in Cyber Security has been proposed and 6 Courses with 18 credits and their syllabus was presented by the chairman BOS

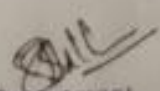
✓ RESOLVED TO APPROVE -Regarding the minor courses Valuable Suggestions are under discussion

**BoS / CSE 4.3.3: TO CONFIRM AND APPROVE the Online Courses**

Professional core subjects should not be opted for Online Courses. Recent Online courses that can be opted for the students were discussed

✓ RESOLVED TO APPROVE the Online Courses

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Head of the Department  
Computer Science and Engineering  
Francis Xavier Engineering College  
Tirunelveli - 627 003

**BoS / CSE 4.3.4: TO CONFIRM AND APPROVE the Industry Supported Courses**

Industries Connected with Industry Supported Courses

1. Atos Syntel ,Kangaikondan
2. Ntech Solutions,Chennai
3. Rishon Communications, Tirunelveli

These Industries were identified for offering Industry Supported Courses to the students

- ✓ RESOLVED TO APPROVE the Industry Supported Courses

**BoS / CSE 4.3.5: TO CONFIRM AND APPROVE the Industry Interaction/ Internship**

List of industries were identified and it was decided to send the students for internship with the companies with whom we have signed the MoU

- ✓ RESOLVED TO APPROVE the Industry Interaction/ Internship

**BoS / CSE 4.3.6: TO CONFIRM AND APPROVE the Syllabus Revision for 19CS3601-Data Structures**

Analysis topics from unit IV and Unit V may be removed since the separate course Design and analysis of algorithm is studied in the IV semester including the analysis part for every problem solving.

**Annexure I: Revised Syllabus for 19CS3601-Data Structures**

- ✓ RESOLVED TO APPROVE the Syllabus Revision for 19CS3601-Data Structures

**BoS / CSE 4.3.7: TO CONFIRM AND APPROVE the Curriculum & Syllabi for the new programme B.Tech. Computer Science and Business Systems**

New Programme B.Tech Computer Science and Business Systems has been proposed to apply in the Academic year (2021-2022).The Curriculum and syllabi was presented to the BOS members

- ✓ RESOLVED TO APPROVE the Curriculum & Syllabi for First & Second Semester

**BoS / CSE 4.4 : Suggestions Given by the Members**

- 4.4.1 The Minor courses which are based on the willingness of the students with a total of 18 credits, which will be added to existing B.E Computer Science and Engineering degree
- 4.4.2 Already the students have to earn 165 credits and to earn additional credits will be burden
- 4.4.3 The Minor Courses with Specialization in Cyber Security and Specialization in Blockchain, the courses are good
- 4.4.4 The Criteria can be defined for whom the minor courses will be opted
- 4.4.5 A Basic structure must be framed, Course can be by industry or higher will be useful

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- 4.4.6 Repetition in content and title must be recollected and instead of including the minor course from third semester it will be good if we include from 4<sup>th</sup> semester
- 4.4.7 Faculty handling the minor courses must have some training for practical cum theory for value added courses
- 4.4.8 The Minor Courses can be referred from IIT, MIT and other foreign universities
- 4.4.9 The Courses such as Microservices and Serverless computing can also be included
- 4.4.10 The Minor courses with Specialization in Cyber Security and Specialization in Blockchain for other department students
- 4.4.11 For B.E CSE Degree students the Specialization course can be mentioned as Major courses and the topics must be more advanced
- 4.4.12 Mobile Networking course is recent blooming we can add as minor courses or Programme
- 4.4.13 Cyber security and blockchain courses are good

**BoS / CSE 4.5: Any other items for discussion**

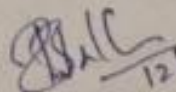
- 4.5.1 The Feedback for the M.E Computer Science and Engineering courses were discussed and further no amendment was needed
- 4.5.2 The Feedback for the M.E Computer Science and Engineering (With Specialization in Networks) courses were discussed and further no amendment was needed

The members had a brainstorming discussion, deliberation and interaction among themselves. After discussion, productive suggestions were incorporated appropriately in the UG and PG Curriculum and Syllabi.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

1. RESOLVED TO APPROVE the value added courses
2. RESOLVED TO APPROVE -Regarding the minor courses Valuable Suggestions are under discussion
3. RESOLVED TO APPROVE the Online Courses
4. RESOLVED TO APPROVE the Industry Supported Courses
5. RESOLVED TO APPROVE the Industry Interaction/ Internship
6. RESOLVED TO APPROVE the Syllabus Revision for 19CS3601-Data Structures

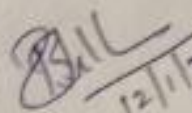
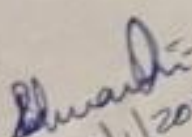
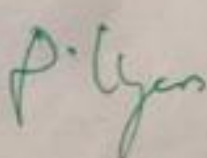
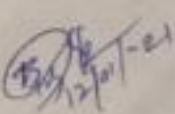
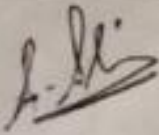
Dr.G.Aravind Swaminathan ,Professor/Associate Head thanked all the members for their kind cooperation and the meeting came to an end.

  
 12/1/2021  
 CHAIRMAN  
 BOARD OF STUDIES

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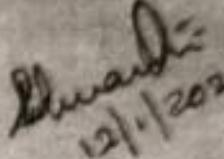
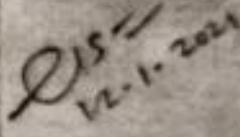

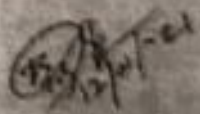
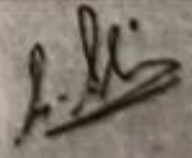
Head of the Department  
 Computer Science and Engineering  
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 Tutunelveli - 627 003

### Attendance Sheet Table of Members:

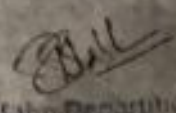
S. No	Members as per UGC Norms	Members Nominated	Signature
1	Head of the Department concerned (Chairman)	<b>Prof. P.Brundha,</b> Professor/Head, Department of Computer Science and Engineering, Francis Xavier Engineering College, Tirunelveli	 12/1/2021
2	One Expert nominated by the Vice Chancellor from a panel of six recommended by the college Principal	<b>Dr.S.Padmavathi</b> Professor, Department of Information Technology, Thiagarajar College of Engineering, Madurai-625015	 12/1/2021
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
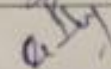
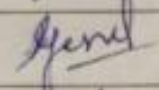
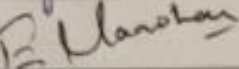

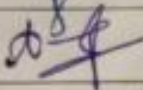
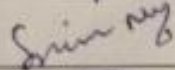
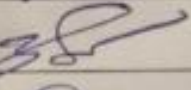
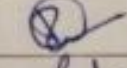
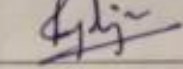
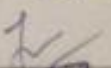

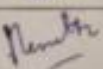
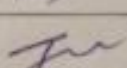
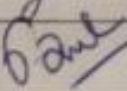

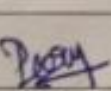

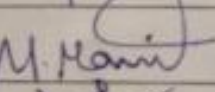
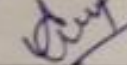


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Google online meet link: <http://meet.google.com/zka-bqkw-oyw>

zka-bqkw-oyw (2021-01-11 at 21:39 GMT-8)

**DATA REPRESENTATION** L 1 P 1  
1998

**Course Objectives**

- 1. To understand the concept of DDTs
- 2. To know basic data structures - lists, stacks, and queues
- 3. To understand sorting, searching and hashing algorithms
- 4. To apply TFC and Graphs methods

**Course Outcomes**

Upon completion of the course, the students will be able to

1. Represent abstract data forms for basic data structures.
2. Apply the different linear data structures to perform solutions.
3. Apply the different non-linear data structures to perform solutions.
4. Critically analyze the various sorting algorithms.
5. Evaluate the suitability of different data structures by writing programs.

Play (M) 3:10 / 51:14

zka-bqkw-oyw (2021-01-11 at 21:39 GMT-8)

Data Structure	Data Type	Complexity
1. List	Array	Linear
2. Stack	Array	Linear
3. Queue	Array	Linear
4. Graphs	Array	Linear

**Stacks**

**Course Objectives**

- 1. Understand the concept of DDTs
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**Course Outcomes**

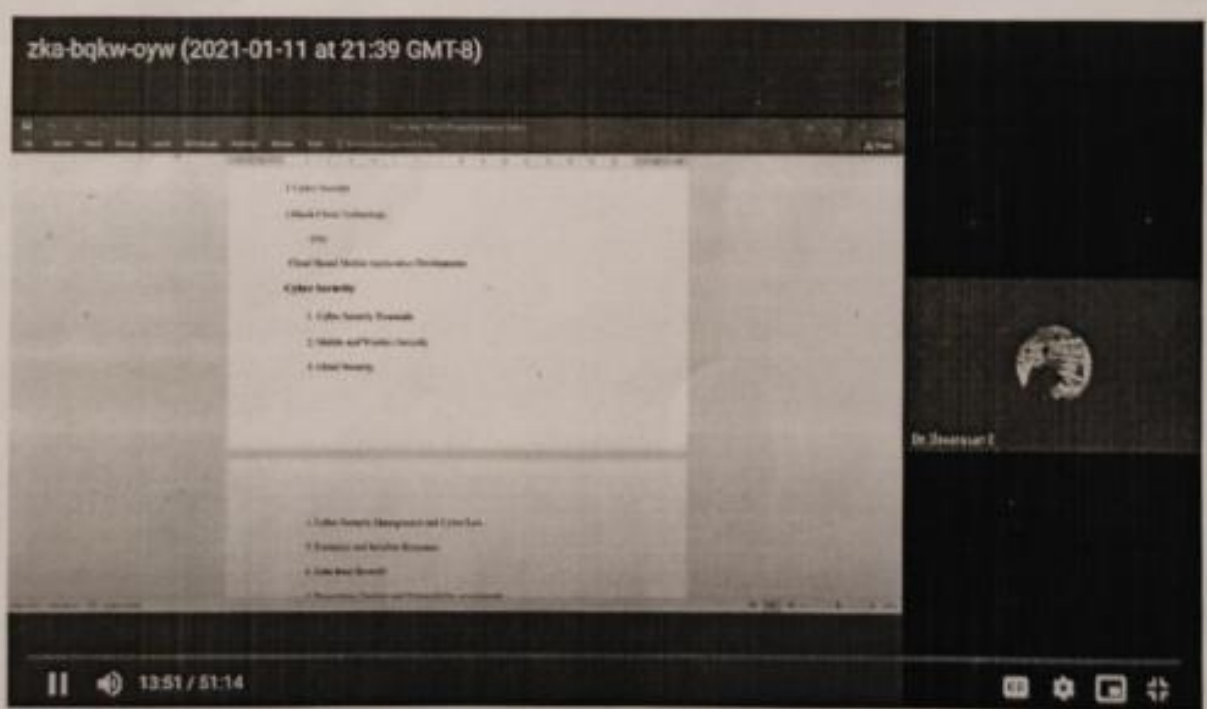
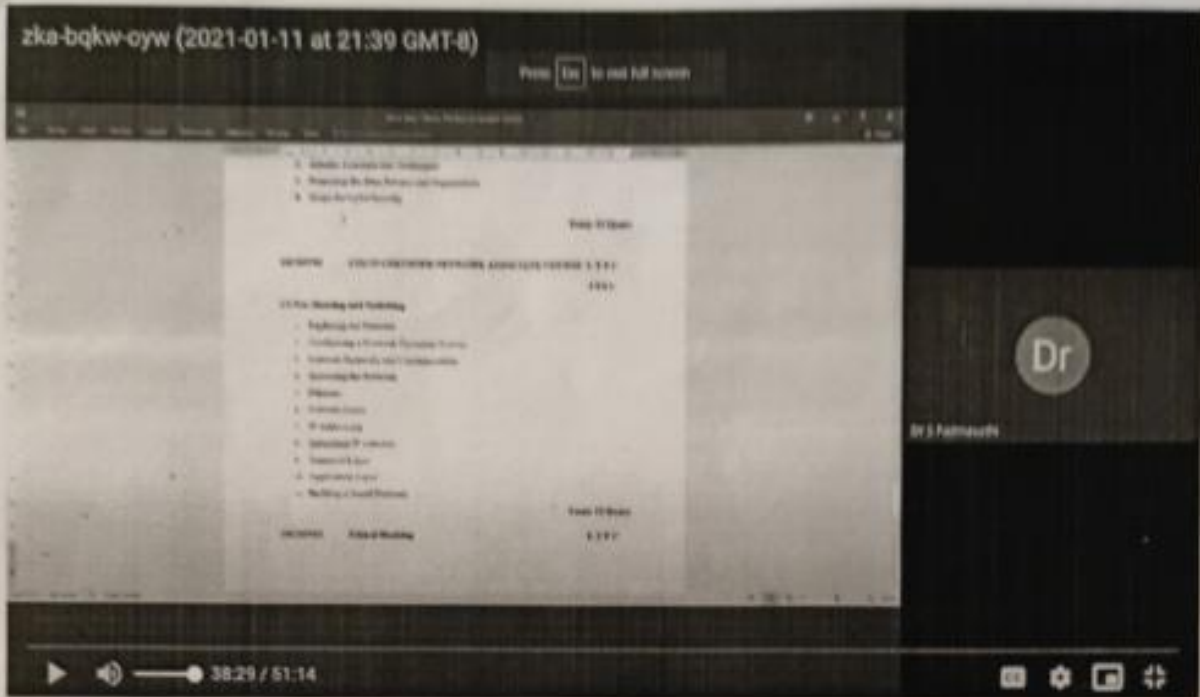
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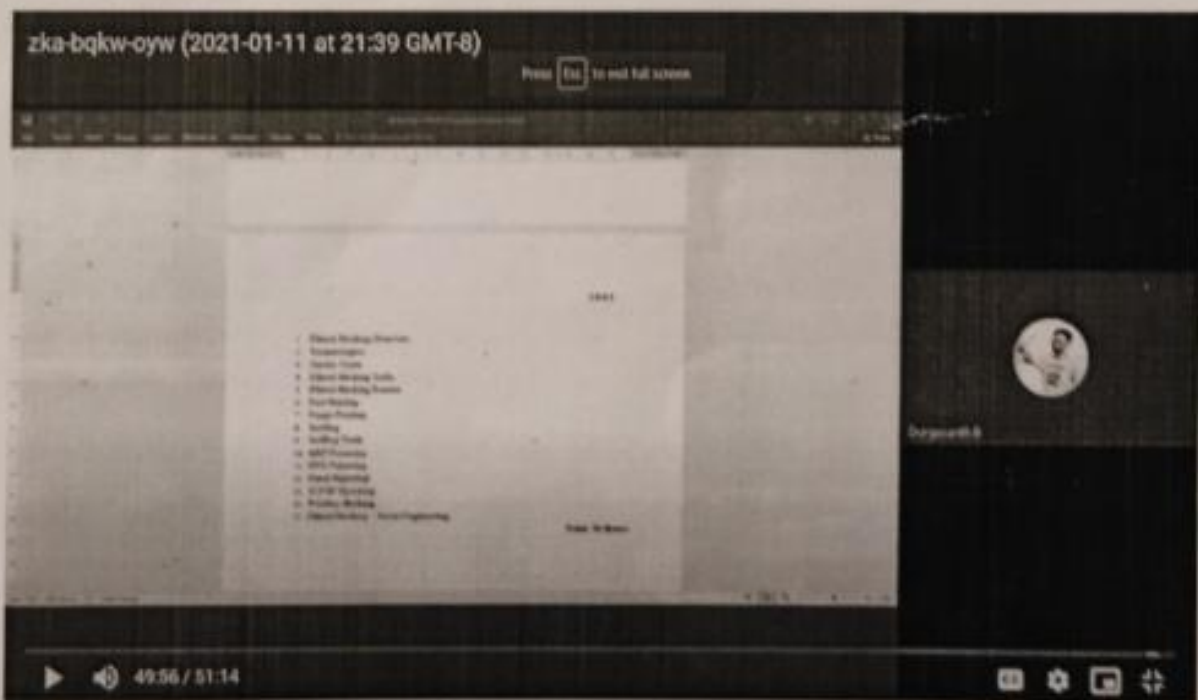
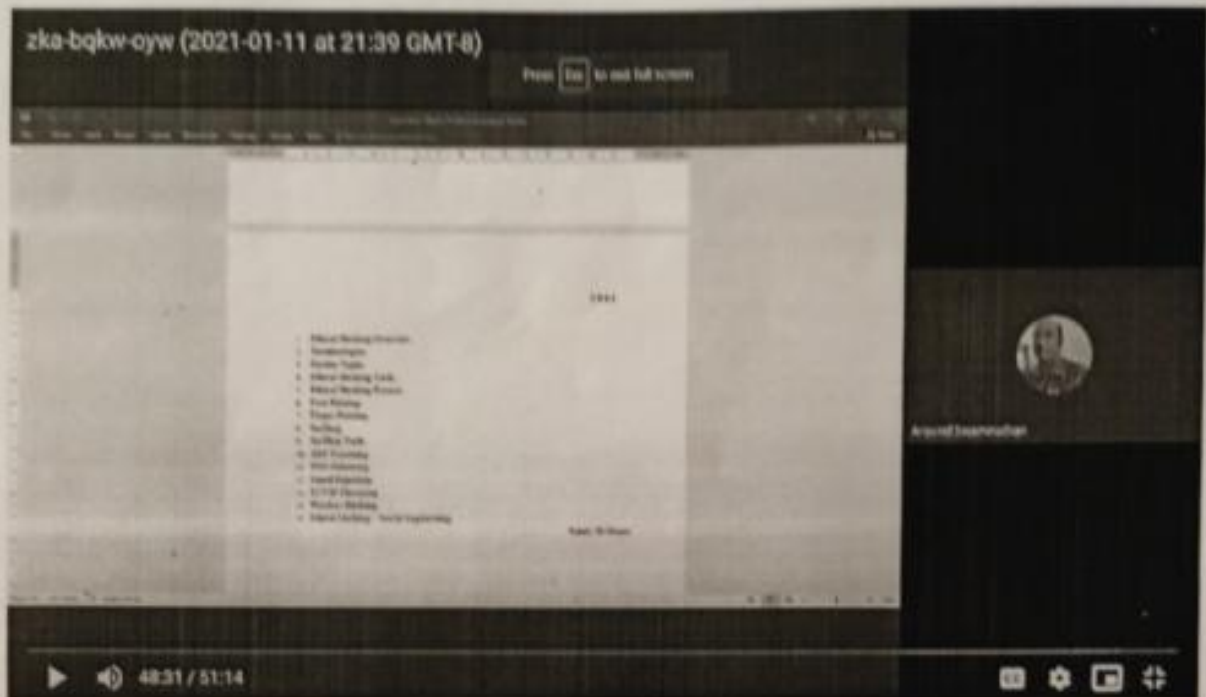
Dr. S. Palanisamy

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*S. Palanisamy*  
Head of the Department  
Computer Science and Engineering  
Francis Xavier Engineering College  
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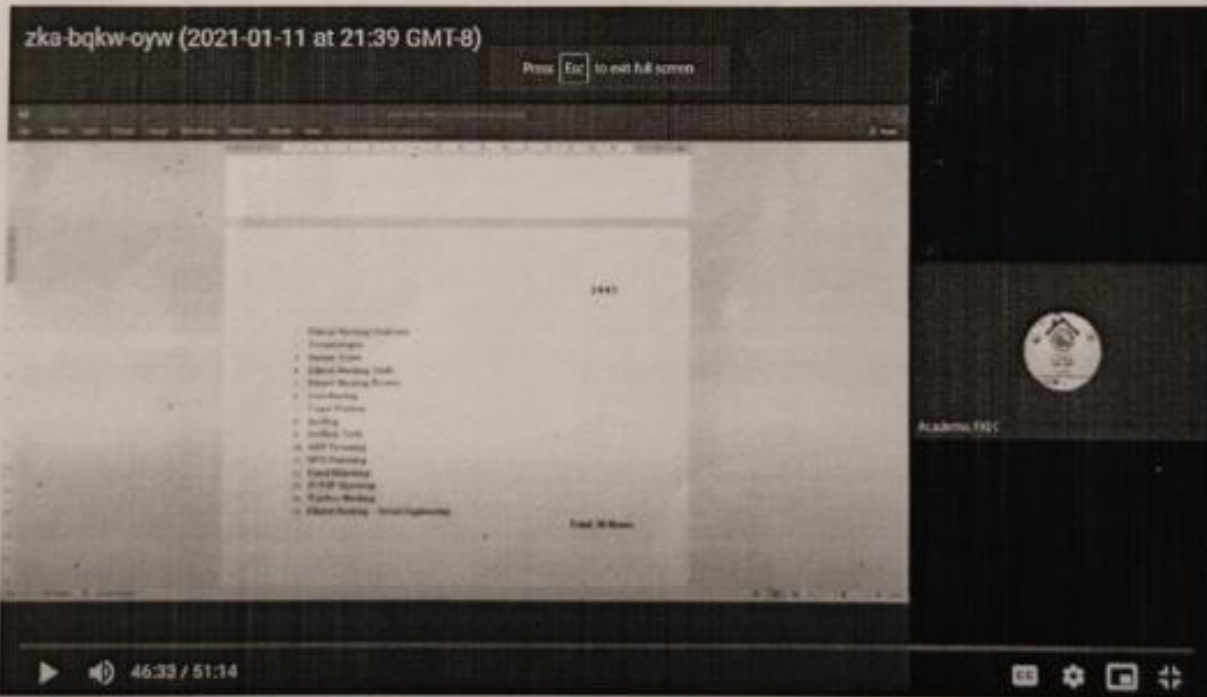
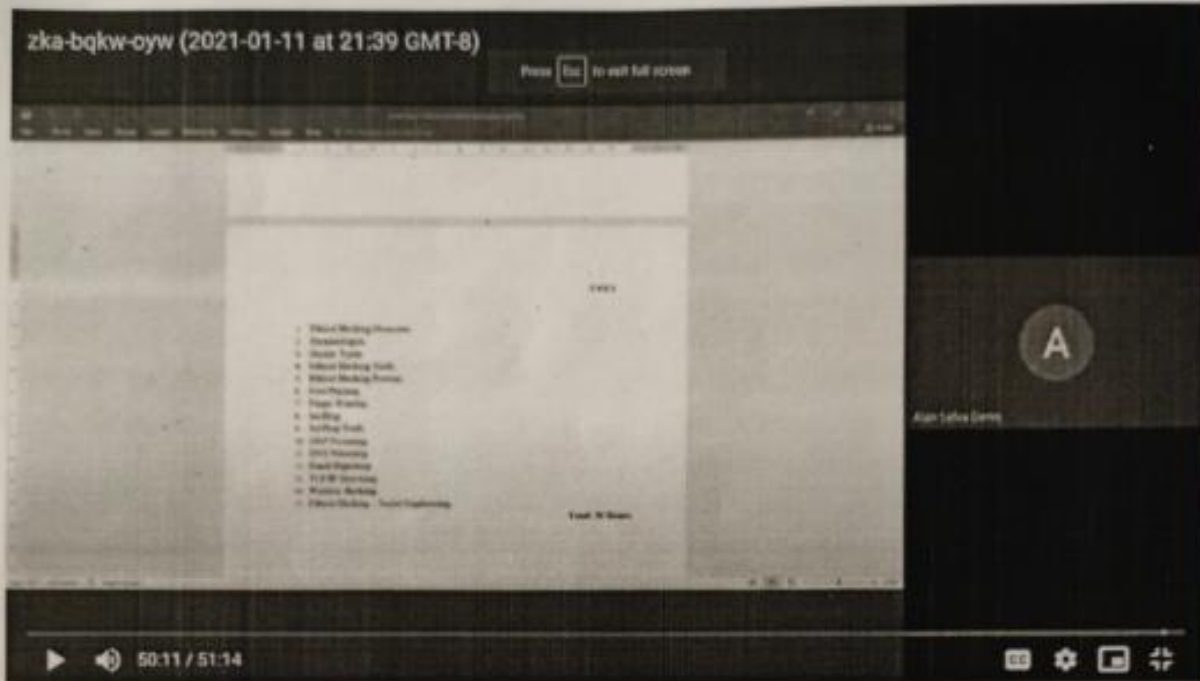


*[Signature]*  
Head of the Department  
Computer Science and Engineering  
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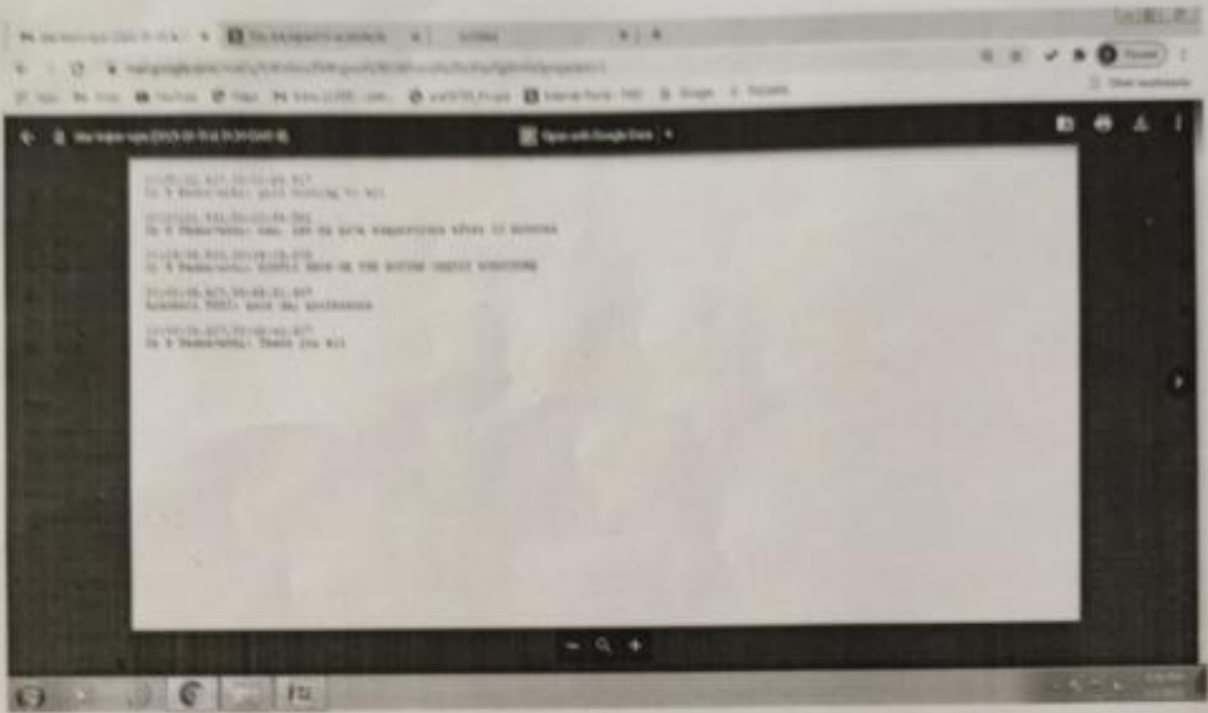
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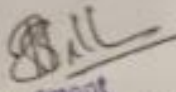
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# Daily Attendance Report for Class-List: 2021-01-12

Class Name: Class-List Meet ID: zka-bqkw-oyw Date: 2021-01-12 v Earliest Arrivals: 10:59 Start: 10:59 End: 12:02 Duration: 63 min

* 28 Names (1 Absent) *	10:55	10:59	11:00	11:05	11:10	11:15	11:20	11:25	11:30	11:35	11:40	11:45	11:50	11:55	12:00	12:02
? Jevin A																
? Muthulakshmi A Muthul...																
✓ Priskilla Angelrani																
? Benita B																
? Durgasanth B																
? Yesubai Rubavathi C Yes...																
✓ Exec Cse																
? Peer Mohamed Y Cse																
? Valarmathi R Cse																
? Alan Selva Denis																
? Dr. Ilavarasan E																
? Manohar E																
? Academic Fxec																
? Zahariya Gabriel																
? Beslin Pajila J																
? Sivakumar K																
? Mukesh Krishnan Krishnan																
? Manimegalai M Manime...																
? Raja Priya N																
Brundha P																
✓ Jennifer P																
? Dr S Padmavathi																
? Murugan Congrats Roopa																
? Balaji S																
✓ Gomathy S																
? Jasmine Mary S																
? Malaiarasan S																
? Aravind Swaminathan																

## Daily Attendance Legend:

✓ The student was present then exited, rejoined, then exited again, and rejoined again, etc., etc.

The alternating background patterns indicate that the student may have left and rejoined the Meet

✓ The student was marked present by the teacher (but did not show up in the Meet window)

The student missed the entire class

To help your eye follow across the page, the table rows alternate between white and grey backgrounds which leads to two subtly different shades of green for the times when the student was present

**NB** - If you want a printed copy of this report, make sure that the 'More settings' → 'Background graphics' checkbox is checked in the Print dialog



Logging Information:

10:59 - \*\*\*\* Settings \*\*\*\*  
10:59 - - version: 1.3.0

Generated by the Google Meet Attendance extension (v1.3.0)

## Attendance for:

## Class-List

Names	"Time:" "Email"	"10:59" "Commn"	"Meet ID:" "Arrival tir"	"zka-bqkw-oyw" "# of Chec"	"Joined"	"Details"
Jevin A	"2021-01-12"	"10:59"	"11:54"	"14"	"2"	"11:44 (11:10:59 (3min) [ 11:01 ]
Muthulakshmi A	"2021-01-12"	"12:00"	"12:01"	"2"	"1"	
Priskilla Angelrani	"2021-01-12"	"10:59"	"12:00"	"14"	"1"	
Benita B	"2021-01-12"	"11:12"	"12:00"	"2"	"2"	"12:00 (11:11:12 (1min) [ 11:12 ]
Durgasanth B	"2021-01-12"	"11:11"	"12:00"	"46"	"1"	
Yesubai Rubavathi C	"2021-01-12"	"11:04"	"12:00"	"2"	"2"	"12:00 (11:11:04 (1min) [ 11:04 ]
Fxec Cse	"2021-01-12"	"10:59"	"12:02"	"64"	"1"	
Peer Mohamed Y Cse	"2021-01-12"	"11:01"	"12:01"	"13"	"1"	
Valarmathi R Cse	"2021-01-12"	"12:00"	"12:00"	"1"	"1"	
Alan Selva Denis	"2021-01-12"	"11:05"	"12:00"	"49"	"1"	
Dr. Ilavarasan E	"2021-01-12"	"11:07"	"12:00"	"47"	"2"	"11:07 (38:11:44 (9min) [ 12:00 ]
Manohar E	"2021-01-12"	"11:03"	"11:12"	"10"	"1"	
Academic Fxec	"2021-01-12"	"11:49"	"11:59"	"6"	"1"	
Zahariya Gabriel	"2021-01-12"	"11:18"	"11:18"	"1"	"1"	
Beslin Pajila J	"2021-01-12"	"11:17"	"12:02"	"3"	"1"	
Sivakumar K	"2021-01-12"	"10:59"	"11:01"	"3"	"1"	
Mukesh Krishnan Krishnan	"2021-01-12"	"11:11"	"12:01"	"4"	"2"	"11:11 (21:12:00 (2min) [ 12:01 ]
Manimegalai M	"2021-01-12"	"11:01"	"12:02"	"12"	"3"	"12:00 (11:12:01 (2mi:11:01 (9min) [ 11:09 ]
Raja Priya N	"2021-01-12"	"11:00"	"11:15"	"14"	"3"	"11:02 (10:11:00 (3mi:11:15 (1min) [ 11:15 ]
Brundha P	"2021-01-12"	"10:59"	"11:06"	"8"	"1"	
Jenifer P	"2021-01-12"	"11:04"	"12:01"	"55"	"4"	
Dr S Padmavathi	"2021-01-12"	"11:11"	"11:58"	"50"	"3"	"11:09 (44:11:54 (7mi:12:00 (2mi:11:04 (2min) [ 11:05 ]
Murugan Congrats Roopa	"2021-01-12"	"11:00"	"12:02"	"15"	"1"	"11:11 (13:11:23 (2mi:11:24 (35min) [ 11:58 ]
Balaji S	"2021-01-12"	"10:59"	"11:07"	"7"	"1"	
Gomathy S	"2021-01-12"	"12:01"	"12:01"	"1"	"1"	
Jasmine Mary S	"2021-01-12"	"11:30"	"11:30"	"1"	"1"	
Malalarasan S	"2021-01-12"	"10:59"	"12:01"	"75"	"4"	"11:17 (11:11:00 (1mi:11:00 (6211:10:59 (1min) [ 10:59 ]
Aravind Swaminathan	"2021-01-12"	"10:59"	"12:01"	"75"	"4"	

Help/more info:

<https://tinyurl.com/y5peu3nk>

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<https://tinyurl.com/y6k2yqts>

**Course Objectives**

- To understand the concepts of ADTs
- To Learn linear data structures – lists, stacks, and queues
- To understand sorting, searching and hashing algorithms
- To apply Tree and Graph structures

**Course Outcomes**

Upon completion of the course, the students will be able to

1. Implement abstract data types for linear data structures.
2. Apply the different linear data structures to problem solutions.
3. Apply the different non-linear data structures to problem solutions.
4. Critically analyze the various sorting algorithms.
5. Evaluate the suitability of different data structures for solving computing problems.

**UNIT I LINEAR DATA STRUCTURES – LIST 9**

Abstract Data Types (ADTs) – List ADT – array-based implementation – linked list implementation – singly linked lists- circularly linked lists- doubly-linked lists – applications of lists – Polynomial Manipulation – All operations (Insertion, Deletion, Merge, Traversal).

**UNIT II LINEAR DATA STRUCTURES – STACKS, QUEUES 9**

Stack ADT – Operations - Applications - Evaluating arithmetic expressions- Conversion of Infix to postfix expression - Queue ADT – Operations - Circular Queue – Priority Queue – de Queue – applications of queues.

**UNIT III NON LINEAR DATA STRUCTURES – TREES 9**

Tree ADT – tree traversals - Binary Tree ADT – expression trees – applications of trees – binary search tree ADT – Threaded Binary Trees- AVL Trees– Splay trees - B-Tree - B+ Tree - Heap – Binary Heap - Applications of heap

**UNIT IV NON LINEAR DATA STRUCTURES - GRAPHS 9**

Definition – Representation of Graph – Types of graph - Breadth-first traversal - Depth-first traversal – Topological Sort – Bi-connectivity – Cut vertex – Euler circuits – Minimum Spanning Trees – Kruskal and Prim algorithm – Shortest path algorithm – Dijkstra's algorithm -Applications of graphs.

## UNIT V SEARCHING, SORTING AND HASHING TECHNIQUES

9

Searching- Linear Search - Binary Search. Sorting - Bubble sort - Selection sort - Insertion sort - Shell sort - Radix sort. Hashing- Hash Functions - Separate Chaining - Open Addressing - Rehashing - Extendible Hashing.

**Total: 45 Periods**

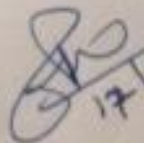
### Text books:

1. Mark Allen Weiss, —Data Structures and Algorithm Analysis in C, 2nd Edition, Pearson Education, 2006.
2. Reema Thareja, —Data Structures Using C, Second Edition, Oxford University Press, 2011.


### References:

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, —Introduction to Algorithms", Second Edition, Mcgraw Hill, 2002.
2. Aho, Hopcroft and Ullman, —Data Structures and Algorithms, Pearson Education, 1983.
3. Stephen G. Kochan, —Programming in C, 3rd edition, Pearson Education.
4. Ellis Horowitz, Sartaj Sahni, Susan Anderson-Freed, —Fundamentals of Data Structures in C, Second Edition, University Press, 2008

Academic Professor

  
17/11/2021

True Copy.

  
12/11/2021

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