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CRITERIA NO :2	**Teaching Learning and Evaluation**
KEY INDICATOR:2.2	**Teaching Learning Process**
METRIC NO. 2.2.1	**Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences**

INDEX SHEET

SELF-LEARNING

AKSHAYA

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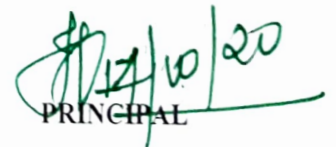
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1	Civil Engineering	2739	475	3214
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3	Electrical And Electronics Engineering	2123	319	2442
4	Electronics And Communi.Engineering	3763	577	4340
5	Management	119	12	131
6	Mechanical Engineering	4632	739	5371
7	Mechatronics Engineering	1219	117	1336
8	Science & Humanities	1254	116	1370
	Grand Total	**18132**	**2776**	**20908**

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Total number of computers for public access	15 computers
Total number of printers	1
Total number of Photocopying machine	1
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		DELNET	DELNET	DELNET	DELNET	IESTC	IEI	DELNET	IESTC
1	Civil Engineering	100	100	100	100	106		100	106
2	Computer Science Engineering	110	93	93	93	144		93	144
3	Electrical and electronics engineering	30	30	30	30	28		30	28
4	Electronic s and communication Engineering	41	41	41	41	59	5	41	59
5	Management	-	-	-	-	28		-	28
6	Mechanical Engineering	76	76	76	76	108		76	108
7	Mechatronics Engineering	113	117	117	117	48		117	48
8	Science and Humanities	347	347	347	347	106		347	106
9	Other areas	-	-	-	-	751		-	751
	Total	**817**	**804**	**804**	**804**	**1378**	**5**	**804**	**1378**

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(Mechanical, Production, Aerospace and Marine Engineering)

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8.	Foundation Engineering
9.	Hydraulics
10.	Introduction to Transportation Engineering
11.	Modern Surveying Techniques
12.	Prestressed Concrete Structures
13.	Soil Mechanics
14.	Strength of Materials
15.	Structural Analysis
16.	Surveying
17.	Transportation Engineering II
18.	Water and wastewater Engineering
19.	Water Resources Engineering
20.	Advanced Structural Analysis
21.	Finite element analysis
22.	Ground improvement techniques
23.	Probability Methods in Civil Engineering
24.	Stochastic Hydrology
25.	Stochastic Structural Dynamics
26.	Urban transportation planning
27.	Water Resources Systems Modeling Techniques and Analysis
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29.	Adv. Hydraulics
30.	Adv.Foundation Engineering
31.	Advanced Hydrology
32.	Advanced Structural Analysis
33.	Concrete Engineering & Technology
34.	Concrete Technology
35.	Finite Element Analysis
36.	Geosynthetics Engineering
37.	Geotechnical Earthquake Engineering
38.	Geotechnical Measurements & Explorations
39.	Ground Improvement Techniques

40.	Numerical Methods In Civil Engineering
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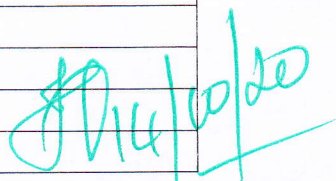**PRINCIPAL**

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23.	Graph Theory
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26.	Real Time Systems
27.	Theory of Automata, Formal Languages and Computation
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29.	Combinators
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32.	Computer Algorithms-II
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7.	Electromagnetic Field for EEE Students
8.	Embedded Systems
9.	Energy Resources & Technology
10.	Estimation of Signal and systems
11.	Illumination Engineering & Electric Utility Services
12.	Industrial Automation & Control
13.	Industrial Instrumentation
14.	Intelligent Systems & Control
15.	Networks & Systems
16.	Networks Signals & Systems
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18.	Power System Analysis
19.	Power System Operation & Control
20.	Power Systems
21.	Power Systems Dynamics
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25.	Advanced Control Systems
26.	High Voltage DC Transmission
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11.	Engineering Mechanics
12.	Finite Element Method
13.	Fundamentals of Environmental Pollution & Control
14.	Fundamentals of Operations Research
15.	Heat & Mass Transfer
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19.	Manufacturing Process
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30.	Biomicroelectro mechanical systems
31.	Computational Fluid Dynamics
32.	Conduction And Radiation
33.	Convective Heat and Mass Transfer
34.	Cryogenic Engineering
35.	Design and Optimization of Energy systems
36.	Engineering Fracture Mechanics
37.	Ergonomics for beginners Industrial design perspective

38.	Experimental Stress Analysis
39.	Fuels Refractory and Furnaces
40.	Materials and Energy balance in Metallurgical Processes
41.	Non-ferrous Extractive Metallurgy
42.	Physics of Materials, Rocket Propulsion,
43.	Steel Making, Tribology, Vibration of Structures
44.	Advanced Manufacturing Processes
45.	Computer Aided Engi.Design
46.	Convective HMT
47.	Cryogenic Engineering
48.	Design & Optimization of Energy Systems
49.	Engineering Fracture Mechanics
50.	Experimental Stress Analysis
51.	Fluid Mechanics
52.	Nonlinear Vibration
53.	Processing of Non Metal
54.	Rocket Propulsion
55.	Solar Energy Technology
56.	Theory & Practice of rotor Dynamics
57.	Vibration of Structures, Welding Engineering

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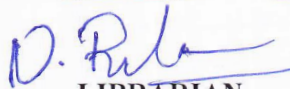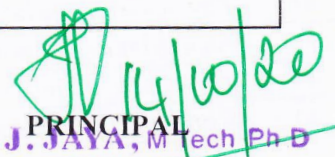Kinathukadavu. Coimbatore-642 109

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10	Dynamics of Machines
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40	Non-ferrous Extractive Metallurgy
41	Physics of Materials,Rocket Propulsion,
42	Steel Making,Tribology,Vibration of Structures
43	Advanced Manufacturing Processes
44	Computer Aided Engi.Design

45	Convective HMT
46	Cryogenic Engineering
47	Design & Optimization of Energy Systems
48	Engineering Fracture Mechanics
49	Experimental Stress Analysis
50	Fluid Mechanics
51	Nonlinear Vibration
52	Processing of Non Metal
53	Rocket Propulsion
54	Solar Energy Technology
55	Theory & Practice of rotor Dynamics
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57	Adaptive Signals Processing
58	Broadband Networks
59	Communication Engineering
60	Digital Circuits & Systems
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62	Digital Computer Organization
63	Digital image processing
64	Digital Signal Processing
65	Digital Systems Design
66	Digital VLSI System Design
67	Digital Voice & Picture Communication
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69	Electronics For Analog signal Processing
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83	Circuits for Analog System Design
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85	Adv.3G,4G Wireless mobile Communication
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7.	Convex Optimization
8.	Elementary Numerical Analysis
9.	Functional Analysis
10.	Linear programming and Extensions
11.	Measure and Integration
12.	Probability and Statistics
13.	Advance Analytical Course
14.	Contemporary Issues in Philosophy of Mind & Cognition
15.	Game Theory and Economics
16.	A Basic Course in Real Analysis
17.	Advanced Engineering Mathematics
18.	Advanced Matrix Theory
19.	Applied Multivariate Analysis
20.	Calculus of variations & Integral Equations
21.	Complex Analysis,Convex Optimization
22.	Elementry Numerical Analysis
23.	Foundations of Optimization,
24.	Functional Analysis
25.	Linear Programming & Extensions
26.	Measure & Integration,
27.	Optimization, Probability & Statistics
28.	Stastical Inference, Stochastic Processes
29.	Engineering Physics-II
30.	Physics,Oscillations & Waves
31.	Quantum Physics
32.	Quantum Mechanics and Applications
33.	Select,Special Topics in Classical Mechanics
34.	Classical Field Theory
35.	Electromagnetic Theory
36.	Electronics,Nuclear Physics
37.	Plasma Physics,Quantum Electronics
38.	Quantum Mechanics & Applications
39.	Selected Topics in Mathematical physics
40.	Semiconducter Optoelectronics
41.	Special Theory of Relativity
42.	Special Topics in Classical Mechanics

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Participative Learning

(Sample from CSE Dept.)

a. TECHNICAL QUIZ

Subject Code /Name: CS8651/ Internet Programming

Class: III B.E. CSE

Faculty Name: Ms.P.Sowkarthiga, AP/CSE

Connect to network   ×   You are signed in as acet00452   ×   Inbox (4,786) - sowkarthikap@ac   ×   Classwork for III CSE IP (2017 - 20   ×   Unit 1 Quiz   ×   +

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Unit 1 Quiz

If we want define style for an unique element, then which css selector will we use ?   1 point

○ Id

○ text

○ class

○ name

If we want to wrap a block of text around an image, which css property will we use ?   1 point

○ wrap

○ push

○ float

○ align

Which of the following is used to create Web Page.   1 point

○ Java

○ HTML

○ C

classroom.google.com/u/2/w/NDc5ODMyNjE2MTBa/t/all

III CSE IP (2017 – 2021 Batch)
A

Stream   **Classwork**   People   Grades

UNIT 2

📖	Lecture Notes	Posted Feb 29, 2020
📖	Part B - Unit 2	Posted Feb 29, 2020
📖	Part A - Question Bank	Posted Feb 29, 2020
📖	PPT	Posted Mar 5, 2020
📖	Session Plan	Posted Mar 5, 2020
📄	Assignment 2	Due Mar 31, 2020

| 📄 | UNIT 2 QUIZ | Edited Feb 29, 2020 |

No due date

2	**38**
Turned in	Assigned

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UNIT 2
Google Forms

UNIT 2

Your email address (**sowkarthikap@acetcbe.edu.in**) will be recorded when you submit this form. Not you? Switch account

What is the HTML tag under which one can write the JavaScript code?   1 point

○ <javascript>

○ <scripted>

○ <script>

○ <js>

The external JavaScript file must contain <script> tag. True or False?   1 point

○ true

○ false

Which of the following is not a reserved word in JavaScript?   1 point

○ interface

○ throws

○ program

○ short

III CSE IP (2017 - 2021 Batch)
A

Stream   **Classwork**   People   Grades

UNIT 3   ⋮

📖 Lecture Notes		Posted Feb 29, 2020
📖 PPT		Posted Mar 5, 2020
📖 Session Plan		Posted Mar 5, 2020
📋 Assignment 3		Posted Mar 11, 2020
📖 Part A - Question Bank		Posted Feb 29, 2020
📖 Part B - Question Bank		Posted Feb 29, 2020

📋 Quiz - UNIT 3	Due Mar 6, 2020

Posted Feb 24, 2020 (Edited Mar 11, 2020)

1	39
Turned in	Assigned

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UNIT 3
Google Forms

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UNIT 3

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---

Which object of HttpSession can be used to view and manipulate information about a session?   1 point

○ session identifier

○ creation time

○ last accessed time

○ All mentioned above

Using mail API we cannot send mail from a servlet.   1 point

○ True

○ False

Which of these ways used to communicate from an applet to servlet?   1 point

○ RMI Communication

○ HTTP Communication

○ Socket Communication

○ All mentioned above

classroom.google.com/u/2/w/NDc5ODMyNjE2MTBa/t/all

III CSE IP (2017 - 2021 Batch)
A

Stream   **Classwork**   People   Grades

UNIT 4

📖 Lecture Notes		Posted Feb 29, 2020
📖 PPT		Posted Mar 11, 2020
📋 Assignment 4		Due Apr 3, 2020
📖 Part A - Question Bank		Posted Feb 29, 2020
📖 Part B - Question Bank		Posted Feb 29, 2020
📋 Quiz - Unit 4		Due Mar 31, 2020

Posted Mar 11, 2020

0	40
Turned in	Assigned

Unit 4 Quiz
Google Forms

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Unit 4 Quiz

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What does PHP stand for?   1 point

○ i) Personal Home Page

○ ii) Hypertext Preprocessor

○ iii) Pretext Hypertext Processor

○ iv) Preprocessor Home Page

We can use ___ to comment a single line?   1 point

○ i) /?

○ ii) //

○ iii) #

○ iv) /* */

Which of the below symbols is a newline character?   1 point

○ A. \r

○ B. \n

○ C. /n

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III CSE IP (2017 - 2021 Batch)
A

Stream   **Classwork**   People   Grades
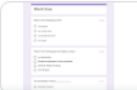
UNIT 5

📙	Lecture Notes	Posted Feb 29, 2020
📙	PPT Unit 5	Posted Mar 11, 2020
📋	Assignment 5	Due Apr 2, 2020
📙	Part A - Question Bank	Posted Feb 29, 2020
📙	Part B - Question Bank	Posted Feb 29, 2020

📋	QUIZ	Due Apr 1, 2020

Posted Mar 11, 2020

1   **39**
Turned in   Assigned

Blank Quiz
Google Forms

📥   Class is archived. Restore it to add or edit anything.   **Restore**

Blank Quiz

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---

Which of the following is AJAX?   1 point

○ is a program

○ is a country name

○ is a football club name

○ All of these

Which of the following are the features of Ajax?   1 point

☐ Live data binding

☐ Declarative instantiation of client components

☐ Client-side template rendering

☐ All of the above

The advantages of Ajax is _____ .   1 point

○ Bandwidth utilization

○ More interactive

○ Speeder retrieval of data

Participative Learning

(Sample from CSE Dept.)

b). SEMINAR

The Institution of Engineers (India)

Coimbatore Local Centre

&

Department of Computer Science and Engineering

Akshaya College of Engineering and Technology Coimbatore

Cordially invite you all for the Inauguration of

One day Seminar on

Impact of Computational Intelligence in Wireless Sensor Networks

Under the aegis of

Computer Science and Engineering Division Board, IE(I)

Chief Guest

Mr. Kathiravan Velusamy

Advisory Software Engineer

IBM, Banglore

DATE: 31-01-2020   **TIME: 9:30 am**

VENUE: CONFERENCE HALL, ACET

Agenda

Prayer Song

Welcome Address

Dr. P. R. Natarajan
Chairman, IEI,
Coimbatore Local Centre

Presidential Address

Dr. J. Jaya
Principal
Akshaya College of Engineering and Technology

About the Seminar

Mr. P. Parthasarathi,
Assistant Professor/CSE,
Akshaya College of Engineering and Technology

Chief Guest Address

Mr. Kathiravan Velusamy
Advisory Software Engineer
IBM, Bangalore

Vote of Thanks

Dr. H. Rammohan
Honorary Secretary, IEI,
Coimbatore Local centre

AKSHAYA
COLLEGE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennal - An ISO 9001:2008 Certified Institution)
Kinathukadavu, Coimbatore - 642 109.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
One Day Seminar on

"Impact of Computational Intelligence in Wireless Sensor Networks"
Participants Attendance

Year / Brach: II CSE
Venue: Conference Hall-I

Date: 31.01.2020

S.No.	Registration Number	Name of the Student	31.01.2020	
			FN	AN
2	720318104002	Amal Shameen A		
3	720318104003	Arunachalam P		
4	720318104004	Bhuvaneshwari K		
5	720318104005	Bhuvaneswari N		
6	720318104007	Gokul N		
7	720318104008	Gopikrishnan A		
8	720318104009	Jayavarshni N		
9	720318104010	Jone Solomon D		
10	720318104011	Kaviyarasan N		
11	720318104012	Keshoth U		
12	720318104014	Nirsheelan K G		
13	720318104015	Nivethitha A		
14	720318104016	Prabu M		
15	720318104017	Rajesh P V		
16	720318104018	Rameshbabu G		
17	720318104019	Sankarnath M		
18	720318104020	Sandhiya V		
19	720318104021	Sanjay M		
20	720318104022	Saranya V		
21	720318104026	Swathi R		
22	720318104027	Tarshana A		
23	720318104028	Vignesh T		
24	720318104029	Vigneshwaran L		
25	720318104031	Vijey A		
26	720318104303	Sundar. K		
27	720318104701	Dharanees Kumar.S		
28	720318104702	Harsha Vardhini S		

P. Parthuth 31/01/2020

Event Coordinator
P. Parthasarathi

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
One Day Seminar on

"Impact of Computational Intelligence in Wireless Sensor Networks"
Participants Attendance

Year / Brach: III CSE
Venue: Conference Hall-I

Date: 31.01.2020

S.No.	Registration Number	Name of the Student	31.01.2020	
			FN	AN
1	720317104002	Akshai Kanth K		
2	720317104003	Antony Jerold J		
3	720317104004	Arunachalam C V		
4	720317104006	Bala Murali Krishnan J		
5	720317104009	Gokulakrishnan A		
6	720317104010	Hariharan R		
7	720317104012	Haripriya K		
8	720317104013	Harnee K.P		
9	720317104016	Keerthiga D		
10	720317104017	Malarvizhi K		
11	720317104018	Manimegalai K		
12	720317104019	Mathushri R		
13	720317104021	Mohan Prasath S		
14	720317104022	Nandhini K		
15	720317104023	Navaneethan A		
16	720317104024	Nickelson S		
17	720317104025	Nihasahamed I		
18	720317104028	Pavithra D		
19	720317104030	Prathiksha M		
20	720317104031	Sadhasivam S		
21	720317104032	Sajith T		
22	720317104033	Samal A		
23	720317104034	Sandhiya S		
24	720317104035	Santhose D		
25	720317104036	Saranhariharajeyan E		
26	720317104037	Sarumathi D		
27	720317104038	Selvapriya R		

28	720317104039	Senthalan S		
29	720317104040	Shanmuga Priyanka Devi S		
30	720317104041	Sree Vidya R		
31	720317104044	Vasanth V		
32	720317104045	Vidya Krishnan		
33	720317104303	Balavishnu M		

P.Barthith
31/01/2020

Event Co-ordinator

P. Parthasarathi

Participative Learning

(Sample from CSE Dept.)

c). WORKSHOP

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ONE DAY WORKSHOP ON INTERNET OF THINGS

ACADEMIC YEAR 2019 – 2020 (ODD SEMESTER)

II YEAR CSE (TOTAL STRENGTH: 34 STUDENTS)

III SEMESTER

DURATION: 1 DAY (25.09.2019)

VENUE: Computer Lab 18

Organized by

Department of Computer Science and Engineering

Akshaya College of Engineering and Technology

Kinathukadavu, Coimbatore

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Kinathukadavu, Coimbatore - 642 109.

One Day Workshop on "INTERNET OF THINGS"

SCHEDULE OF THE WORKSHOP

Date	Topics Covered	
	Forenoon Session(FN)	**Afternoon Session(AN)**
25.9.2019	• Introduction to IoT • Introduction to MSP 430 • Architecture of MSP 430 • Features of MSP430 • Addon Components Supports	• Configuration details • Application of MSP430 • Mini Projects

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One Day Workshop on "INTERNET OF THINGS"

LIST OF PARTICIPANTS

YEAR/BRANCH: II CSE **SEMESTER: III**

S.No	Register No	Name of the Student	Total Arrear	CGPA
1.	720318104001	Akilash S K	0	7.12
2.	720318104002	Amal Shameen A	0	7.73
3.	720318104003	Arunachalam P	1	7.28
4.	720318104004	Bhuvaneshwari K	3	7.18
5.	720318104005	Bhuvaneswari N	1	7.46
6.	720318104006	Gayathri V	7	7.81
7.	720318104007	Gokul N	1	7.22
8.	720318104008	Gopikrishnan A	1	7.59
9.	720318104009	Jayavarshni N	4	6.88
10.	720318104010	Jone Solomon D	7	6.92
11.	720318104011	Kaviyarasan N	8	7.27
12.	720318104012	Keshoth U	2	7.44
13.	720318104014	Nirsheelan K G	7	6.96
14.	720318104015	Nivethitha A	8	7.27
15.	720318104016	Prabu M	4	6.83
16.	720318104017	Rajesh P V	7	7.23
17.	720318104018	Rameshbabu G	7	7.68

S.No	Register No	Name of the Student	Total Arrear	CGPA
18.	720318104019	Sankarnath M	7	7.50
19.	720318104020	Sandhiya V	0	7.51
20.	720318104021	Sanjay M	2	7.00
21.	720318104022	Saranya V	0	7.18
22.	720318104024	Sriragavi M	4	7.64
23.	720318104025	Sujith A	3	7.16
24.	720318104026	Swathi R	4	6.97
25.	720318104027	Tarshana A	1	7.13
26.	720318104028	Vignesh T	9	6.76
27.	720318104029	Vigneshwaran L	7	7.36
28.	720318104030	Vijetha A	0	8.71
29.	720318104031	Vijey A	0	7.94
30.	720318104032	Nagaranjeni R	8	6.78
31.	720318104302	Sreeleka.N	-	-
32.	720318104303	Sundar. K	-	-
33.	720318104701	DharaneesKumar.S	-	-
34.	720318104702	Harsha Vardhini S	-	-

Conducted By:
Mr. T. Boopalan, AP/ECE
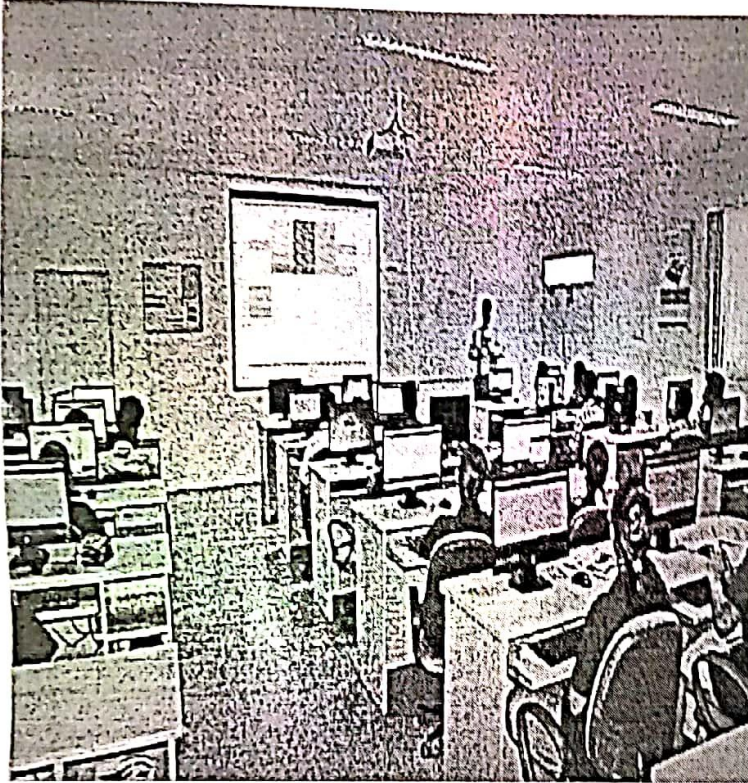
Faculty Coordinators:
Mr.P.Parthasarathi, AP/CSE

24/9/19
Faculty Advisory
P PARTHASARATHI.

P. 24/9/19
Dept. VAP Coordinator
P. Sowkarthiga

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Report on "One-day Workshop on Internet of Things (IoT)"

Akshaya College of Engineering and Technology, Kinathukadavu conducted a certified one day workshop on 25th September 2019, on "Internet of Things (IoT)".

The expert Mr.T.Boopalan conducted session on the interconnection of wireless devices using internet and features of MSP 430 and simple programming using MSP 430 was also covered. The event was executed in groups among which several healthy competitions were conducted. Participants from Second year students of Computer Science and Engineering took part in the workshop.

Event coordinator **Mr. P.Parthasarathi** said "The aim of such workshops is to provide a platform for hands-on experience on state-of-the-art technologies in which people from various levels can participate, interact and share their expertise. We are going to conduct a series of such workshops on a not-for-profit basis. Soon we shall be conducting a summer workshop targeting various tools required for scientists and engineers". The details about the upcoming workshops can be obtained through the official website of Akshaya College of Engineering and Technology www.acetcbe.edu.in

The event was successful completed and the participants got the awareness of the importance and evolution of Internet of Things (IoT) and how they are playing vital role in smart living.

P. Parthh 25/9/2019

HoD / CSE

P. Parthasarathi

Participative Learning

(Sample from CSE Dept.)

d). Group Discussion

Academic Year : 2019-20   Day : Friday   Date : 12·07·19

.No.	Course Name	Topics Covered	Absentees		Name & Signature of the Faculty
			Reg. No.	Total No.	
1	CNS/GCC	Cloud computing, Grid Computing Infrastructures	19, 41	2	(S. Jeevanandham)
2	RMT	Unit-II Duality and Network, Applications. (Definition of dual Problem & Formulation)	19,41	2	(D. Radhika)
3	CNS/GCC	Cloud Computing, Service Oriented Architecture	19, 41	2	(S. Jeevanandhan)
4	Lib	Book reading & Group discussion	19, 41	2	(S. Nithyapriya &)
5	GCC LAB (A)	Ex. no: 2			(S. Jeevanandham)
6	SEC LAB (B)	Ex:1.6	19,41	2	
7		Aptitude training			(S. Sivavardhan)
8	RNS	Aptitude Training	19, 41	2	

OD Details : Rently s/w, Internship

No. of Students availed OD : 1
Register Numbers: 301

P. _____
Faculty Advisor

P.
HoD

Department of Computer Science and Engineering
Academic Year 2019-2020 – Odd Semester
Group Discussion

Class/Sem: IV/VII   **Batch: 2016 – 2020**

S.No	Date	Topic	Batch
1.	28.06.2019	E-learning – Pros & Challenges	Adith A.K
			Ajith Kumar S
			Akalya S
			Aneesparvin. M
			Arshad A.M
			Atchaya R
2.	05.07.2019	Do deadlines destroy creativity?	Azhagumanikandan R
			Balaji Manikandan M
			Blessy Z
			Chockalingam PL
			Durga Devi N
3.	12.07.2019	Work from home – Pros & Cons	Gowri T
			Gowtham M
			Ishwarya S
			Jaya Suriya C
			Lavanya A
			Manoj Kumar R
4.	19.07.2019	Data Localisation – Benefits & Challenges	Manojsudharsan S
			Nandhakumar S
			Naveen M
			Nivatha M
			Nivetha M.R
			Praveena A.M
5.	02.08.2019	Factors that contributed to the growth of MNCs	Sanath K.S
			Sandhiya M
			Sangeetha M
			Sangeetha P
			Santhiya V U
			Saravana Kumar B
6.	16.08.2019	Can Artificial intelligence replace Human intelligence?	Sarumathi A
			SenthilKumar A
			Soundara Rajan M
			Subadharshini S
			Sukumar S

S.No	Date	Topic	Batch
7.	30.08.2019	The Future of Cryptocurrencies	Tamilarasi K
			Vishal M
			Christina Joice. S
			Nandhini M
			Manirathnam K
8.	06.09.2019	Innovation vs Invention – What is more important?	Prem R
			Adith A.K
			Ajith Kumar S
			Akalya S
			Aneesparvin. M
			Arshad A.M

P. 1 ———— 12/9/2019

Faculty Advisor

P. Sowkarthiga

P. ᗞ𝓁𝓉𝒽𝑜𝓊 12/2/2019

HoD

P. Damodharan

Participative Learning

(Sample from CSE Dept.)

d). CONTENT BEYOND SYLLABUS

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CONTENT BEYOND SYLLABUS DETAILS

ACADEMIC YEAR 2019 – 2020

Batch   : 2017 - 2021   YEAR/SEM: III/VI
Course Code   : CS8651
Course Title   : Internet Programming
Name of the Faculty : Ms.P.Sowkarthiga
Designation   : Assistant Professor

Suggestions for Content Beyond Syllabus

S.No	Topic	Status
1.	Digital rights management	Conducted
2.	Java Applet Basic	Conducted
3.	Servlet Filter	Conducted

Faculty

HoD

Topics covered over and above the syllabus :

Sl. No.	Date & Period	Description of topics covered
01	14.12.2019	Digital rights management
02	29.01.2020	Applets
03	19.02.2020	Servlet Filter
04		
05		

Additional Coaching classes handled

Sl.No.	Date	Time From	Time To	Description of topics covered
1.	28.01.2020	1.00 pm	1.35 pm	class test 1
2.	4.02.2020	1.00 pm	1.35 pm	class test 2
3.	13.02.2020	8.45 am	10.15 am	cia coaching

6/3/2020

Signature of the staff

9/3/2020

HoD

Digital rights management (**DRM**) tools or **technological protection measures** (**TPM**) are a set of access control technologies for restricting the use of proprietary hardware and copyrighted works. DRM technologies try to control the use, modification, and distribution of copyrighted works (such as software and multimedia content), as well as systems within devices that enforce these policies.

The use of digital rights management is not universally accepted. Proponents of DRM argue that it is necessary to prevent intellectual property from being copied freely, just as physical locks are needed to prevent personal property from being stolen,[1] that it can help the copyright holder maintain artistic control,[4] and that it can ensure continued revenue streams.[5] Those opposed to DRM contend there is no evidence that DRM helps prevent copyright infringement, arguing instead that it serves only to inconvenience legitimate customers, and that DRM helps big business stifle innovation and competition. Furthermore, works can become permanently inaccessible if the DRM scheme changes or if the service is discontinued. DRM can also restrict users from exercising their legal rights under the copyright law, such as backing up copies of CDs or DVDs (instead having to buy another copy, if it can still be purchased), lending materials out through a library, accessing works in the public domain, or using copyrighted materials for research and education under the fair use doctrine.

Worldwide, many laws have been created which criminalize the circumvention of DRM, communication about such circumvention, and the creation and distribution of tools used for such circumvention. Such laws are part of the United States' Digital Millennium Copyright Act,and the European Union's Information Society Directive, (the French DADVSI is an example of a member state of the European Union ("EU") implementing the directive)

Technologies

Verifications[edit]

Product keys[edit]

One of the oldest and least complicated DRM protection methods for computer and Nintendo Entertainment System games was when the game would pause and prompt the player to look up a certain page in a booklet or manual that came with the game; if the player lacked access to such material, they would not be able to continue the game. A product key, a typically alphanumerical serial number used to represent a license to a particular piece of software, served a similar function. During the installation process or launch for the software, the user is asked to

input the key; if the key correctly corresponds to a valid license (typically via internal algorithms), the key is accepted, then the user who bought the game can continue. In modern practice, product keys are typically combined with other DRM practices (such as online "activation"), as the software could be cracked to run without a product key, or "keygen" programs could be developed to generate keys that would be accepted.

Limited install activations

Some DRM systems limit the number of installations a user can activate on different computers by requiring authentication with an online server. Most games with this restriction allow three or five installs, although some allow an installation to be 'recovered' when the game is uninstalled. This not only limits users who have more than three or five computers in their homes, but can also prove to be a problem if the user has to unexpectedly perform certain tasks like upgrading operating systems or reformatting the computer's storage device.

In mid-2008, the Windows version of *Mass Effect* marked the start of a wave of titles primarily making use of SecuROM for DRM and requiring authentication with a server. The use of the DRM scheme in 2008's *Spore* backfired and there were protests, resulting in a considerable number of users seeking an unlicensed version instead. This backlash against the three-activation limit was a significant factor in *Spore* becoming the most pirated game in 2008, with TorrentFreak compiling a "top 10" list with *Spore* topping the list.[25][26] However, Tweakguides concluded that the presence of intrusive DRM does not appear to increase video game piracy, noting that other games on the list such as *Call of Duty 4* and *Assassin's Creed* use DRM which has no install limits or online activation. Additionally, other video games that do use intrusive DRM such as *BioShock*, *Crysis Warhead*, and *Mass Effect*, do not appear on the list.

Persistent online authentication

Many mainstream publishers continued to rely on online DRM throughout the later half of 2008 and early 2009, including Electronic Arts, Ubisoft, Valve, and Atari, *The Sims 3* being a notable exception in the case of Electronic Arts.Ubisoft broke with the tendency to use online DRM in late 2008, with the release of *Prince of Persia* as an experiment to "see how truthful people really are" regarding the claim that DRM was inciting people to use illegal copies.Although Ubisoft has not commented on the results of the "experiment", Tweakguides noted that two torrents on Mininova had over 23,000 people downloading the game within 24 hours of its release.

Ubisoft formally announced a return to online authentication on 9 February 2010, through its Uplay online game platform, starting with *Silent Hunter 5*, *The Settlers 7*, and *Assassin's Creed II*.*Silent Hunter 5* was first reported to have been compromised within 24 hours of release,but users of the cracked version soon found out that only early parts of the game were playable.The Uplay system works by having the installed game on the local PCs incomplete and then continuously downloading parts of the game-code from Ubisoft's servers as the game progresses. It was more than a month after the PC release in the first week of April that software was released that could bypass Ubisoft's DRM in *Assassin's Creed II*. The software did this by emulating a Ubisoft server for the game. Later that month, a real crack was released that was able to remove the connection requirement altogether.

In early March 2010, the Uplay servers suffered a period of inaccessibility due to a large-scale DDoS attack, causing around 5% of game owners to become locked out of playing their game. The company later credited owners of the affected games with a free download, and there has been no further downtime.

Other developers, such as Blizzard Entertainment are also shifting to a strategy where most of the game logic is on the "side" or taken care of by the servers of the game maker. Blizzard uses this strategy for its game Diablo III and Electronic Arts used this same strategy with their reboot of SimCity, the necessity of which has been questioned.

Encryption

An early example of a DRM system is the Content Scrambling System (CSS) employed by the DVD Forum on film DVDs circa 1996. CSS uses an encryption algorithm to encrypt content on the DVD disc. Manufacturers of DVD players must license this technology and implement it in their devices so that they can decrypt the encrypted content to play it. The CSS license agreement includes restrictions on how the DVD content is played, including what outputs are permitted and how such permitted outputs are made available. This keeps the encryption intact as the video material is played out to a TV.

In 1999, Jon Lech Johansen released an application called DeCSS, which allowed a CSS-encrypted DVD to play on a computer running the Linux operating system, at a time when no licensed DVD player application for Linux had yet been created. The legality of DeCSS is questionable: one of the authors has been the subject of a lawsuit, and reproduction of the keys themselves is subject to restrictions as illegal numbers.

Encryption can ensure that other restriction measures cannot be bypassed by modifying the software, so sophisticated DRM systems rely on encryption to be fully effective. More modern examples include ADEPT, FairPlay, Advanced Access Content System.

Copying Restriction

Further restrictions can be applied to electronic books and documents, in order to prevent copying, printing, forwarding, and saving backups. This is common for both e-publishers and enterprise Information Rights Management. It typically integrates with content management system software but corporations such as Samsung Electronics also develop their own custom DRM systems.

While some commentators believe DRM makes e-book publishing complex, it has been used by organizations such as the British Library in its secure electronic delivery service to permit worldwide access to substantial numbers of rare documents which, for legal reasons, were previously only available to authorized individuals actually visiting the Library's document centre at Boston Spa in England.

There are four main e-book DRM schemes in common use today, one each from Adobe, Amazon, Apple, and the Marlin Trust Management Organization (MTMO).

- Adobe's DRM is applied to EPUBs and PDFs, and can be read by several third-party e-book readers, as well as Adobe Digital Editions (ADE) software. Barnes & Noble uses a DRM technology provided by Adobe, applied to EPUBs and the older PDB (Palm OS) format e-books.
- Amazon's DRM is an adaption of the original Mobipocket encryption and is applied to Amazon's .azw4, KF8, and Mobipocket format e-books. Topaz format e-books have their own encryption system.
- Apple's FairPlay DRM is applied to EPUBs and can currently only be read by Apple's iBooks app on iOS devices and Mac OS computers.
- The Marlin DRM was developed and is maintained in an open industry group known as the Marlin Developer Community (MDC) and is licensed by MTMO. (Marlin was founded by five companies, Intertrust, Panasonic, Philips, Samsung, and Sony.) The Kno online textbook publisher uses Marlin to protect e-books it sells in the EPUB format. These books can be read on the Kno App for iOS and Android.

Java Applet Basics

Let's understand first how many Package does GUI support:

1. AWT(Abstract Window Toolkit)
2. Swing

Throwback of making GUI application:

Java was launched on 23-Jan-1996(JDK 1.0) and at that time it only supported CUI(Character User Interface) application. But in 1996 VB(Visual Basic) of Microsoft was preferred for GUI programming. So the Java developers in hurry(i.e within 7 days) have given the support for GUI from Operating System(OS). Now, the components like button,etc. were platform-dependent(i.e in each platform there will be different size, shape button). But they did the intersection of such components from all platforms and gave a small library which contains these intersections and it is available in AWT(Abstract Window Toolkit) technology but it doesn't have advanced features like dialogue box, etc.

What is Applet?

An applet is a Java program that can be embedded into a web page. It runs inside the web browser and works at client side. An applet is embedded in an HTML page using the APPLET or OBJECT tag and hosted on a web server.

Applets are used to make the web site more dynamic and entertaining.

Important points :

1. All applets are sub-classes (either directly or indirectly) of *java.applet.Applet* class.
2. Applets are not stand-alone programs. Instead, they run within either a web browser or an applet viewer. JDK provides a standard applet viewer tool called applet viewer.
3. In general, execution of an applet does not begin at main() method.
4. Output of an applet window is not performed by *System.out.println()*. Rather it is handled with various AWT methods, such as *drawString()*.

Life cycle of an applet :
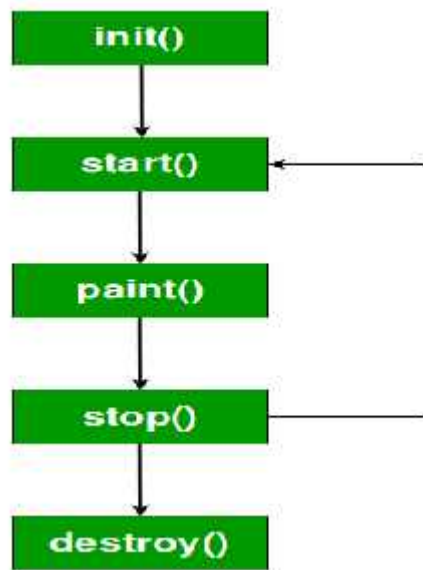
It is important to understand the order in which the various methods shown in the above image are called. When an applet begins, the following methods are called, in this sequence:

1. init( )
2. start( )
3. paint( )

When an applet is terminated, the following sequence of method calls takes place:

1. stop( )
2. destroy( )

Let's look more closely at these methods.

1. **init( ) :** The **init( )** method is the first method to be called. This is where you should initialize variables. This method is called **only once** during the run time of your applet.

2. **start( ) :** The **start( )** method is called after **init( )**. It is also called to restart an applet after it has been stopped. Note that **init( )** is called once i.e. when the first time an applet is loaded whereas **start( )** is called each time an applet's HTML document is displayed onscreen. So, if a user leaves a web page and comes back, the applet resumes execution at **start( )**.

3. **paint( ) :** The **paint( )** method is called each time an AWT-based applet's output must be redrawn. This situation can occur for several reasons. For example, the window in which the applet is running may be overwritten by another window and then uncovered. Or the applet window may be minimized and then restored.

   paint( ) is also called when the applet begins execution. Whatever the cause, whenever the applet must redraw its output, **paint( )** is called.

The **paint( )** method has one parameter of type <u>Graphics</u>. This parameter will contain the graphics context, which describes the graphics environment in which the applet is running. This context is used whenever output to the applet is required.

Note: This is the only method among all the method mention above, which is parametrised.

It's prototype is

public void paint(Graphics g)

where g is an object reference of class Graphic.

Example:

import java.applet.Applet;

import java.awt.Graphics;

// HelloWorld class extends Applet

public class HelloWorld extends Applet

{

  // Overriding paint() method

  @Override

  public void paint(Graphics g)

  {

    g.drawString("Hello World", 20, 20);

  }

  }

A **filter** is an object that is invoked at the preprocessing and postprocessing of a request.

It is mainly used to perform filtering tasks such as conversion, logging, compression, encryption and decryption, input validation etc.

The **servlet filter is pluggable**, i.e. its entry is defined in the web.xml file, if we remove the entry of filter from the web.xml file, filter will be removed automatically and we don't need to change the servlet.

So maintenance cost will be less.

Usage of Filter

- o   recording all incoming requests
- o   logs the IP addresses of the computers from which the requests originate
- o   conversion
- o   data compression
- o   encryption and decryption
- o   input validation etc.

Advantage of Filter

1. Filter is pluggable.
2. One filter don't have dependency onto another resource.
3. Less Maintenance

Filter API

Like servlet filter have its own API. The javax.servlet package contains the three interfaces of Filter API.

1. Filter
2. FilterChain
3. FilterConfig

1) Filter interface

For creating any filter, you must implement the Filter interface. Filter interface provides the life cycle methods for a filter.

Method	Description
public void init(FilterConfigconfig)	init() method is invoked only once. It is used to initialize the filter.

public void doFilter(HttpServletRequestrequest,HttpServletResponse response, FilterChain chain)	doFilter() method is invoked every time when user request to any resource, to which the filter is mapped.It is used to perform filtering tasks.
public void destroy()	This is invoked only once when filter is taken out of the service.

2) FilterChain interface

The object of FilterChain is responsible to invoke the next filter or resource in the chain.This object is passed in the doFilter method of Filter interface.TheFilterChain interface contains only one method:

1. **public void doFilter(HttpServletRequest request, HttpServletResponse response):** it passes the control to the next filter or resource.

How to define Filter

We can define filter same as servlet. Let's see the elements of filter and filter-mapping.

<web-app>

<filter>

<filter-name>...</filter-name>

<filter-class>...</filter-class>

</filter>

<filter-mapping>

<filter-name>...</filter-name>

<url-pattern>...</url-pattern>

</filter-mapping>

</web-app>

MyFilter.java

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.*;
public class MyFilter implements Filter{
public void init(FilterConfig arg0) throws ServletException {}
public void doFilter(ServletRequest req, ServletResponse resp,
    FilterChain chain) throws IOException, ServletException {
    PrintWriter out=resp.getWriter();
```

```java
    out.print("filter is invoked before");
    chain.doFilter(req, resp);//sends request to next resource

    out.print("filter is invoked after");
    }
    public void destroy() {}
}
```

HelloServlet.java
```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.*;
public class HelloServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    response.setContentType("text/html");
    PrintWriter out = response.getWriter();
    out.print("<br>welcome to servlet<br>");
    }
}
```
web.xml

```xml
<web-app>
<servlet>
<servlet-name>s1</servlet-name>
<servlet-class>HelloServlet</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>s1</servlet-name>
<url-pattern>/servlet1</url-pattern>
</servlet-mapping>
<filter>
<filter-name>f1</filter-name>
<filter-class>MyFilter</filter-class>
</filter>
<filter-mapping>
<filter-name>f1</filter-name>
<url-pattern>/servlet1</url-pattern>
</filter-mapping>
</web-app>
```

Experiential Learning

DATA LINK   :http://www.acetcbe.edu.in/naac/qn/C1/C%201.3.2.xlsx

Problem Solving Strategies

a) Sample copy of Timetable (Tutorial session)
b) List of Value Added Programmes