



Preparation and adherence of Academic Calendar and Teaching plans by the institution



MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

Sponsored by CMR Educational Society

(Affiliated to JNTUH, Hyderabad, Approved by AICTE - Accredited by NAAC – 'A' Grade - ISO 9001:2015 Certified)

Maisammaguda, Dhulapally, Kompally, Secunderabad – 500100, Telangana State, India.

Contact Number: 7207034237, 9133555162, E-Mail ID: mrcet2004@gmail.com, website: www.mrcet.ac.in



Estd : 2004

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

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Recognized under 2(f) and 12 (B) of UGC ACT 1956



2.3.4 PREAMBLE

The Institution plans and organizes the teaching learning and evaluation schedules in the following manner:

- Institute develops an academic calendar for the semester in accordance with university guidelines and with the involvement and supervision of Academic Council. The Academic Council comprises of academicians, members from Industry and R&D centers. The calendar is announced well before the commencement of the academic session.
- It is available in the college website for the view of students, parents and faculty members before the commencement of the semester. It consists of all the academic activities planned for the semester which includes dates commencement of classwork, dates of internal exams, lab exams and external exams etc.
- Lesson plans and course files are prepared according to the number of lectures required in each subject. The academic calendar defines the number of teaching days available according to which timetables are prepared and session examinations are scheduled.

All courses are handled as per the schedule in the academic calendar. For each course, a course file is prepared by the subject handling Faculty in a pre-defined format. The course file consists of syllabus, detailed course information with course outcomes, lecture notes, model question papers and sample assignments. The course file consists of following items.

- Teaching plan: Teaching plans for each and every course are prepared by the faculty. Whole syllabus is divided into X units and Y lectures as per the teaching scheme prescribed by the university.
- The course objectives are defined for each course in line with the PO's.
- Lesson Plan: Lesson plans are prepared for each lecture in the teaching plan, by the faculty before the commencement of the semester and it is duly approved after careful examination by the Head of the Department and made available to the students. The Lecture notes are included in the course file and corresponding digital notes are posted.
- Question Banks: Question banks are prepared for each topic in the course based on the course objectives and considering the nature of the university question papers. The previous question Papers of University and internal assessments are also maintained in the course files.
- Assignment questions list and model question papers along with key solutions are included in the course files

The course file is verified by HOD at the beginning of the semester and during the semester on a regular basis to check for compliance with the set standards. The attendance registers are closely monitored to correct any deviations from the academic schedules.

The IQAC nominee in the Dept checks for adherence to the academic calendar and teaching plans. In case of an exception, the Academic Calendar is duly updated to accommodate the contemporary changes in schedules and other dependant documents and schedules are duly modified to enable a smooth execution of processes without any hindrance to the teaching-learning process.

Sd/-
Principal

MRCET



MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

Ref: MRCET/Academic Calendar/B.Tech/2019-2020

August 02, 2019

ACADEMIC CALENDAR FOR THE I B.TECH I SEM: ACADEMIC YEAR 2019-2020

The Academic Calendar for B.Tech I Year – I Semester for the academic year 2019-2020 is approved by academic senate of the institution. The details are given below:

B.TECH : I YEAR – I SEMESTER ACADEMIC YEAR 2019-2020

S.No.	Description	Period	Duration
1	Orientation day	02.08.2019	
2	I Spell of Instructions	02.08.2019 to 28.09.2019	8 weeks
3	I Mid Examinations	30.09.2019 to 03.10.2019	4 days
4	Dussehra Holidays	06.10.2019 to 13.10.2019	1 week
5	II Spell of Instructions	04.10.2019 to 30.11.2019	8 weeks
6	II Mid Examinations	02.12.2019 to 04.12.2019	3 days
7	Preparation & Practical Examinations	05.12.2019 to 12.12.2019	8 days
8	End Semester Examinations (Regular)	13.12.2019 to 28.12.2019	2 weeks
9	Commencement of Class work for I Year II Semester for the Academic Year 2019-2020	30.12.2019	

- ❖ Dussehra Holidays from 06.10.2019 to 13.10.2019 may change subjected to the directions from the Government of Telangana

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Contact Number: 040-23792146/64634237, E-Mail ID: mrctet2004@gmail.com, website: www.mrctet.ac.in

Ref: MRCET/Academic Calendar/B.Tech/2019-2020

August 02, 2019

ACADEMIC CALENDAR FOR THE I B.TECH II SEM: ACADEMIC YEAR 2019-2020

The Academic Calendar for B.Tech I Year – II Semester for the academic year 2019-2020 is approved by academic senate of the institution. The details are given below:

B.TECH : I YEAR – II SEMESTER ACADEMIC YEAR 2019-2020

S.No.	Description	Period
1	I Spell of Instructions	30.12.2019 to 01.03.2020
2	I Mid Examinations	02.03.2020 to 04.03.2020
3	Submission of I Mid Exam Marks	07.03.2020
4	II Spell of Instructions	09.03.2020 to 22.04.2020
5	II Mid Examinations	23.04.2020 to 25.04.2020
6	Submission of II Mid Exam Marks	30.04.2020
7	Preparation & Practical Examinations	27.04.2020 to 30.04.2020
8	End Semester Examinations (Regular)	01.05.2020 to 13.05.2020
9	Semester Break/ Supplementary Examinations	14.05.2020 to 20.06.2020
10	Commencement of Class work for II Year I Semester for the Academic Year 2020-2021	22.06.2020

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Contact Number: 040-23792146/64634237, E-Mail ID: mrcet2004@gmail.com, website: www.mrcet.ac.in

Ref: MRCET/Academic Calendar/B.Tech/2019-2020

Date: 17.06.2019

ACADEMIC CALENDAR FOR THE II ,III & IV B.TECH I SEM ACADEMIC YEAR 2019-2020

The Academic Calendar for B.Tech II, III, and IV Year – I Semester (Autonomous) for the academic year 2019-2020 is approved by academic senate of the institution. The details are given below:

B.Tech : II III & IV Year – I Semester

S.No.	Description	Period
	Commencement of Class Work	24.06.2019
1	I Spell of Instructions	24.06.2019 to 24.08.2019
2	Last date of rejoining readmitted students	13.07.2019
3	I Mid Examinations	26.08.2019 to 28.08.2019
4	Submission of I Mid Exam Marks	05-09-2019
5	II Spell of Instructions	29.08.2019 to 31.10.2019
6	Dussehra Holidays	07.10.2019 to 12.10.2019
7	II Mid Examinations	04.11.2019 to 06.11.2019
8	Submission of II Mid Exam Marks	09.11.2019
9	Preparation & Practical Examinations	07.11.2019 to 14.11.2019
10	End Semester Examinations (Regular)	15.11.2019 to 30.11.2019
11	Winter Break/ supplementary Examinations	02.12. 2019 to 14.12.2019
12	Commencement of Class work for II, III & IV Year II Semester for the Academic Year 2019-2020	16.12.2019

- ❖ Dussehra Holidays from 07.10.2019 to 12.10.2019 may change subjected to the directions from the Government of Telangana

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Ref: MRCET/Academic Calendar/B.Tech/2019-2020

Date: 26.08.2019

ACADEMIC CALENDAR FOR THE II ,III & IV B.TECH II SEM ACADEMIC YEAR 2019-2020

The Academic Calendar for B.Tech II, III, and IV Year – II Semester (Autonomous) for the academic year 2019-2020 is approved by academic senate of the institution. The details are given below:

B.Tech : II III & IV Year – II Semester

S.No.	Description	Period
1	I Spell of Instructions	16.12.2019 to 01.03.2020
2	I Mid Examinations	02.03.2020 to 04.03.2020
3	Submission of I Mid Exam Marks	07.03.2020
4	II Spell of Instructions	09.03.2020 to 22.04.2020
5	II Mid Examinations	23.04.2020 to 25.04.2020
6	Submission of II Mid Exam Marks	30.04.2020
7	Preparation & Practical Examinations	27.04.2020 to 30.04.2020
8	End Semester Examinations (Regular)	01.05.2020 to 13.05.2020
9	Semester Break/ Supplementary Examinations	14.05.2020 to 20.06.2020
10	Commencement of Class work for III/IV Year I Semester for the Academic Year 2020-2021	22.06.2020

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Code No: R17A0507

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

R17

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MODEL QUESTION PAPER - 1

JAVA PROGRAMMING

(IT)

Roll No									
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Time: 3 hours

Max. Marks: 70

Note: Question paper Consists of 5 SECTIONS (One SECTION for each UNIT).

Answer **FIVE** Questions, Choosing **ONE** Question from each SECTION and each Question carries 14 marks.

SECTION-I

1). Explain briefly about Object Oriented Programming concepts? [14M]

(OR)

2. a) Explain briefly about type conversion and type casting with example program? [7M]

b) Write a java program for finding the factorial of a given number using recursion? [7M]

SECTION-II

3. a) Explain different types of inheritances with example program? [7M]

b) What is a package? Explain User defined package with program? [7M]

(OR)

4. a) What is an Object class? Explain Object class methods? [7M]

b) Explain super keyword with program? [7M]

SECTION-III

5. a) What is an Exception? Explain different types of Exceptions? [7M]

b) Explain about try and catch with example program? [7M]

(OR)

6 a) Explain how to create a Thread with example program? [7M]

b) Explain about Thread Priority with example program? [7M]

SECTION- IV

7). Explain about Vector class and StringTokenizer class with example Program? [14M]

(OR)

9. a) Explain File class methods with program? [7M]

b) Explain different types of Drivers in JDBC? [7M]

SECTION- V

10.a) Write a java program for handling Mouse Events and Key Events? [7M]

b) Explain about AWT and Swing? [7M]

(OR)

11) Explain different types of Layouts with example program? [14M]

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MODEL QUESTION PAPER - 2
JAVA PROGRAMMING
(IT)

Roll No										
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Time: 3 hours**Max. Marks: 70****Note:**

Question paper Consists of 5 SECTIONS (One SECTION for each UNIT).

Answer **FIVE** Questions, Choosing **ONE** Question from each SECTION and each Question carries 14 marks.

SECTION-I

- 1). Explain Procedure oriented programming and Object Oriented programming? [14M]
(OR)
2. a) Explain different loop control statements with example program? [7M]
b) Explain parameter passing Mechanism with example program? [7M]

SECTION-II

3. a) Explain Method overriding and Abstract class with example program? [7M]
b) What is inner class? Explain different types of inner classes? [7M]
(OR)
4. a) Difference between Interface and Abstract class? [7M]
b) Explain final keyword with method and class? [7M]

SECTION-III

5. a) What is user defined Exception? Explain user defined Exception with program? [7M]
b) Explain Multiple catch blocks with program? [7M]
(OR)
- 6 a) What is a Thread? Explain Thread Life cycle with neat diagram? [7M]
b) Explain Inter-Thread Communication with Producer and Consumer problem? [7M]

SECTION- IV

- 7). Explain Array List class, Vector class and Hash table class with example program? [14M]
(OR)
9. a) Explain FileInputStream and FileOutputStream class with example program? [7M]
b) Write a program to update data in the database using JDBC? [7M]

SECTION- V

- 10.a) Explain Applet life cycle with neat diagram? [7M]
b) Explain any three Swing components? [7M]
(OR)
- 11) Write a program for Calculator using Swings? [14M]

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MODEL QUESTION PAPER - 3
JAVA PROGRAMMING
(IT)

Roll No										
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Time: 3 hours**Max. Marks: 70****Note:** Question paper Consists of 5 SECTIONS (One SECTION for each UNIT).

Answer **FIVE** Questions, Choosing **ONE** Question from each SECTION and each Question carries 14 marks.

SECTION-I

- 1). Explain Constructor Overloading and Method Overloading with example program? [14M]
(OR)
2. a) Explain different Operators in Java with examples [7M]
 b) Explain different String Handling methods with examples? [7M]

SECTION-II

3. a) Explain Dynamic binding with example program? [7M]
 b) What is an interface? Explain how to extend an interface with program? [7M]
(OR)
4. a) Explain different Access Specifiers in java? [7M]
 b) Explain about this keyword and built in packages? [7M]

SECTION-III

5. a) Explain throw and throws keyword with example program? [7M]
 b) Explain nested try block with example program? [7M]
(OR)
- 6 a) Explain Thread Synchronization with example program? [7M]
 b) Explain about Interrupting thread with example program? [7M]

SECTION- IV

- 7). Explain Stack class, Random class and Scanner class with example program? [14M]
(OR)
9. a) Explain RandomAccessFile methods with example program? [7M]
 b) Write a program to insert data in to the database using JDBC? [7M]

SECTION- V

- 10.a) Explain Adapter class with example program? [7M]
 b) Difference between Applets and Applications? [7M]
(OR)
- 11) Explain Event classes and Event Listeners in Event handling Mechanism [14M]

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MODEL QUESTION PAPER - 4
JAVA PROGRAMMING
(IT)

Roll No										
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Time: 3 hours**Max. Marks: 70****Note:** Question paper Consists of 5 SECTIONS (One SECTION for each UNIT).

Answer **FIVE** Questions, Choosing **ONE** Question from each SECTION and each Question carries 14 marks.

SECTION-I

- 1). Explain about Java Buzz words or Features and History of java [14M]
(OR)
2. a) Explain about Garbage Collector in java ? [7M]
b) Explain this keyword with example program? [7M]

SECTION-II

3. a) Explain Object class Methods with example? [7M]
b) Explain difference between Abstract class and Interface? [7M]
(OR)
4. a) Explain about super keyword with example program? [7M]
b) Explain how multiple inheritance is supported in java? Justify [7M]

SECTION-III

5. a) What is Exception? Explain Built in Exceptions in java [7M]
b) What is User defined Exception? Explain User defined Exception with program [7M]
(OR)
- 6 a) Explain about Thread Group in java with program? [7M]
b) Explain Daemon Thread with example program? [7M]

SECTION- IV

- 7). Explain Calendar class and Random class with example program? [14M]
(OR)
9. a) Explain different steps for creating JDBC? [7M]
b) Write a program to delete data from the database using JDBC? [7M]

SECTION- V

- 10.a) Explain about Delegation Event Model? [7M]
b) Explain how to pass parameters to an applet with program [7M]
(OR)
- 11) Explain Swing components [14M]
i) JButton ii) JLabel iii) JTextField iv) JTextArea



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LESSON PLAN

Academic Year : _____

COURSE - OBJECT ORIENTED PROGRAMMING

FACULTY: _____

CLASS : _____

YEAR/SEM: _____

Unit	Topic Name	No. of Classes
Introduction to Object Oriented Programming		
I	Object oriented paradigm- Benefits of OOP	1
	Differences between Object Oriented Programming and Procedure oriented programming	1
	Introduction to basic concepts of Object Oriented Programming	1
	Concepts -Encapsulation, Inheritance and Polymorphism	1
	Structure of a C++ program, namespace, Data types	1
	C++ tokens - Identifiers,	1
	C++ tokens - Variables, Constants	1
	C++ Operators	1
	Control structures in C++	1
	Loops in C++	1
Functions, Classes and Objects		
II	Introduction of Classes and Class Definition	1
	Defining a Members and Objects	1
	Access Control	1
	Class Scope, and Scope Resolution Operator	1
	Inline functions	1
	Memory Allocation for Objects	1
	Static Data Members and Static Member Functions	1
	Arrays of Objects	1
	Objects as Function Arguments	1
	Friend Functions	1
Constructors, Destructors, Inheritance		
III	Introduction to Constructors.	1
	Default Constructors and Parameterized Constructors	1
	Copy Constructors	1
	Multiple Constructors in a Class, Destructors	1
	Inheritance : Introduction to inheritance	1
	Defining Derived Classes	1
	Single Inheritance, Multiple Inheritance	1
	Multi level Inheritance	1

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	Hierarchical Inheritance	1
	Hybrid Inheritance	1
Pointers, Virtual Functions and Polymorphism		
IV	Introduction to Memory management, new operator and delete operator	1
	Pointers to objects	1
	Pointers to Derived Classes	1
	Polymorphism- Compile time polymorphism	1
	Run time polymorphism	1
	Virtual Functions	1
	Overloading- Function Overloading	2
	Overloading- Operator overloading	2
Templates and Exception handling		
V	Introduction to Templates - Class Templates	1
	Class Templates	1
	Class Templates with Multiple Parameters	1
	Function Templates	1
	Function Templates with Multiple Parameters	1
	Exception handling: Basics of Exception Handling	1
	Types of exceptions	1
	Exception Handling Mechanism- Throwing and Catching Mechanism,	1
	Rethrowing an Exception	1
	Specifying Exceptions	1

TEXT BOOKS:

1. Object Oriented Programming with C++ by Balagurusamy
2. C++, the Complete Reference, 4th Edition, Herbert Schildt, TMH.

REFERENCES:

1. C++ Primer, 3rd Edition, S.B.Lippman and J.Lajoie, Pearson Education.
2. The C++ Programming Language, 3rd Edition, B.Stroutstrup, Pearson Education

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DIGITAL NOTES ON COMPUTER ORGANIZATION

**B.TECH II YEAR - I SEM
(2018-19)**



DEPARTMENT OF INFORMATION TECHNOLOGY

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY

(R17A0510) COMPUTER ORGANIZATION

OBJECTIVES:

- To understand basic components of system
- To explore the memory organization
- To explore I/O organization in depth
- Ability to analyze the hardware and software issues related to computers and the interface between the two.

UNIT I :

BASIC STRUCTURE OF COMPUTERS: Computer Types, Functional unit, Basic OPERATIONAL concepts, Bus structures, Software, Performance, multiprocessors and multi computers. Data Representation. Fixed Point Representation. Floating – Point Representation. Error Detection codes.

REGISTER TRANSFER LANGUAGE AND MICRO OPERATIONS : Register Transfer language. Register Transfer Bus and memory transfers, Arithmetic Micro operations, logic micro operations, shift micro operations, Arithmetic logic shift unit.

UNIT-II:

Basic Computer Organization and Design:

Instruction codes. Computer Registers Computer instructions, Timing and Control, Instruction cycle. Memory Reference Instructions, Input – Output and Interrupt, Complete Computer Description.

Micro Programmed Control: Control memory, Address sequencing, micro program example, design of control unit, micro Programmed control

UNIT-III:

Computer Processing Unit Organization: General Register Organization ,STACK organization, Instruction Formats, Addressing modes, Data Transfer and Manipulation ,Program Control. CISC and RISC. **Computer Arithmetic:** Addition and subtraction, multiplication Algorithms, Division Algorithms, Floating – point Arithmetic operations. BCD Adder

UNIT-IV:

Input-Output Organization: Peripheral Devices, Input-Output Interface, Asynchronous data transfer Modes of Transfer, Priority Interrupt Direct memory Access, Input –Output Processor (IOP)

Pipeline And Vector Processing: Parallel Processing, Pipelining, Arithmetic Pipeline, Instruction Pipeline, Dependencies, Vector Processing.

UNIT-V:

Memory Organization: Memory Hierarchy, Main Memory –RAM And ROM Chips, Memory Address map, Auxiliary memory-magnetic Disks, Magnetic tapes, Associate Memory,-Hardware Organization, Match Logic, Cache Memory –Associative Mapping , Direct Mapping, Set associative mapping ,Writing in to cache and cache Initialization , Cache Coherence ,Virtual memory-Address Space and memory Space ,Address mapping using pages, Associative memory page table ,page Replacement .

TEXT BOOKS:

1. “Computer Organization” special edition-MRCET,TATA McGraw Hill. 2017
2. Computer Organization – Carl Hamacher, Zvonks Vranesic, SafeaZaky, Vth Edition, McGraw Hill.
3. Computer Systems Architecture – M.Moris Mano, Illrd Edition, Pearson/PHI

REFERENCES:

1. Computer Organization and Architecture – William Stallings Sixth Edition, Pearson/PHI
2. Structured Computer Organization – Andrew S. Tanenbaum, 4th Edition PHI/Pearson
3. Fundamentals or Computer Organization and Design, - Sivaraama Dandamudi Springer Int. Edition.
4. Computer Architecture a quantitative approach, John L. Hennessy and David A. Patterson, Fourth Edition Elsevier
5. Computer Architecture: Fundamentals and principles of Computer Design, Joseph D. Dumas II, BS Publication.



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INDEX

S. No	Unit	Topic	Page no
1	I	Computer Types	1
2	I	Functional unit	4
3	I	Basic OPERATIONAL concepts	6
4	I	Bus structures	8
5	I	Software, Performance	9
6	I	multiprocessors and multi computers	11
7	I	Data Representation	11
8	I	Error Detection codes.	12
9	I	Register Transfer language	13
10	II	Basic Computer Organization and Design:	
11	II	Instruction codes. Computer Registers	29
12	II	Memory reference instructions	40
13	II	Instruction cycle	41
14	II	Micro Programmed Control	42
15	II	Address sequencing	43
16	III	Computer Processing Unit Organization	
17	III	General Register Organization	45

18	III	STACK organization, Instruction Formats	46
19	III	Addressing modes	50
20	III	Data Transfer and Manipulation ,Program Control	55
21	III	Computer airthmatic	60
22	III	Multiplication Algorithm	63
23	III	Division algorithm	63
24	IV	Input-Output Organization	
25	IV	Peripheral Devices, Input-Output Interface	76
26	IV	Asynchronous data transfer Modes of Transfer	77
27	IV	Priority Interrupt Direct memory Access	82
28	IV	Input –Output Processor (IOP)	84
29	IV	Pipeline And Vector Processing	
30	IV	Parallel Processing, Pipelining	85
31	IV	Arithmetic Pipeline, Instruction Pipeline	86
32	IV	Dependencies, Vector Processing	87
33	V	Memory Organization	
34	V	Memory Hierarchy, Main Memory –RAM And ROM Chips	89
35	V	Memory Address map, Auxiliary memory-magnetic Disks	91
36	V	Match Logic, Cache Memory –Associative Mapping , Direct Mapping	92
37	V	Set associative mapping ,Writing in to cache and cache Initialization	93
	V	Cache Coherence ,Virtual memory-Address Space and memory Space	94

	V	Address mapping using pages, Associative memory page table	95
	V	page Replacement	96

QUESTION BANKS

III B.Tech IT Sem I : DISTRIBUTED SYSTEMS – QUESTION BANK

PART – A (SHORT ANSWER QUESTIONS)

<u>UNIT – I</u>	
1	Define distributed system?
2	Define the properties of the distributed system?
3	Define effective resource sharing?
4	List the examples of the distributed systems?
5	State the challenges of the distributed systems?
6	Define distributed client and distributed server?
7	Give some reasons why centralized systems are not adequate to modern computing?
8	Compare architectural and fundamental models?
9	Define interaction model?
10	Describe failure model?
11	Explain transparency and its types?
12	Define synchronous and asynchronous distributed systems?
13	Define omission failure?
14	Define arbitrary failure?
15	Define masking failure?
16	What is ISO OSI model?
17	What is meant by byzantine failure?
18	What are the types of failures?
19	What is a firewall?
20	List the services provided by multiple servers, proxy servers, peer processes?
<u>UNIT – II</u>	
1	Describe lamport logical clock?
2	Describe events and process states?
3	Define physical clock?
4	Define logical time?
5	Define logical clocks?
6	Differentiate between election algorithm and mutual exclusion algorithms?
7	Describe the network time protocol?
8	Explain distributed garbage collection?

9	Define vector clocks?
10	Define global states?
11	Explain distributed deadlock detection?
12	Explain distributed deadlock termination ?
13	Define consistent cut?
14	Define inconsistent cut?
15	Demonstrate snapshot algorithm?
16	Define the termination of the snapshot algorithm?
17	Define distributed debugging?
18	List consistent global states?
19	Define bully algorithm?
20	Define critical section?
	<u>UNIT – III</u>
1	Define the uses of UDP?
2	Explain TCP Stream communication?
3	List the issues related to the stream communication?
4	Define data marshalling?
5	Define external data representation?
6	Define CORBA?
7	Explain request-reply protocols?
8	Demonstrate IP multicast?
9	Give some examples of the effects of reliability and ordering?
10	Explain data gram communication in UNIX?
11	What are types of network?
12	Define network principles?
13	Describe internet protocols?
14	State client-server communication?
15	Define group communication?
16	What is RMI?
17	What is RPC?
18	Define socket?
19	List the differences between TCP and UDP?
20	Distinguish synchronous and asynchronous communication?
	<u>UNIT – IV</u>
1	State distributed file system requirements?
2	Write the types of the transparency?
3	List the differences between global name service and x.500 directory service?
4	Define consistency and efficiency?
5	Differentiate between Andrew file system and sun network file system?
6	Define client integration in the SUN network file system?
7	Define virtual file system?
8	Define mount service?
9	Explain cache consistency in Andrew file system?
10	Explain other aspects in the Andrew file system?
11	What is the definition of the domain name service?
12	Define directory?
13	Define global name service?

14	Demonstrate the importance of the name services in the distributed system?
15	What is name resolution?
16	Explain name service requirements?
17	Define name space?
18	Explain the aliasing concept?
19	Explain name resolution?
	List the directory services?
<u>UNIT – V</u>	
1	Define transaction recovery?
2	Compare the flat and nested distributed transactions?
3	Write the the properties of transactions?
4	What are the types of locks?
5	What is two phase commit protocol?
6	Define shrinking and growing phase?
7	Define time stamp ordering?
8	List the methods of the concurrency control?
<u>UNIT – V</u>	
1	Define transaction recovery?
2	Compare the flat and nested distributed transactions?
3	Write the the properties of transactions?
4	What are the types of locks?
5	What is two phase commit protocol?
6	Define shrinking and growing phase?
7	Define time stamp ordering?
8	List the methods of the concurrency control?

PART – B (ESSAY QUESTIONS)

<u>UNIT - I</u>	
1	Discuss the challenges of the distributed systems with their examples?
2	Differentiate between centralized systems and the distributed systems with a suitable example?
3	Discuss the applications of the distributed systems?
4	Explain resource sharing in the distributed systems.
5	Explain world wide web in a detail manner.
6	Illustrate with an example how resources are shared in the distributed systems and explain how it is not possible in the centralized systems?
7	Describe the two basic architectural models.
8	Discuss how distributed systems are more scalable than the centralized systems?
9	Explain failure handling and transparency?
10	Describe any two of the fundamental models.
<u>UNIT – II</u>	
1	Explain clocks, events and process states?
2	Explain how is synchronizing of physical clocks done?
3	Discuss the lamport logical clocks and logical time?
4	Describe distributed debugging?

5	Explain global states in detail?
6	Explain the snapshot algorithm of chandy and lamport ?
7	Differentiate all the type of the multicast communication?
8	Compare and contrast Christians method with Berkeley algorithm.
9	Explain any one algorithm used for distributed mutual exclusion.
10	Evaluate the ring-based election algorithm.

UNIT - III

1	Explain the API for the internet protocols in IPC?
2	Explain UDP datagram communication in detail?
3	Explain TCP stream communication in detail?
4	Explain in detail about external data representation and marshalling?
5	Explain client-server communication in detail?
6	Explain group communication in detail?
7	Describe the concept of events and notifications.
8	Explain RMI architecture
9	Write in detail about RPC.
10	Describe the inter process communication in Unix with an example?

UNIT – IV

1	Explain file service architecture in detail?
2	Explain sun network file system?
3	Describe in detail about Andrew file system?
4	Writ
5	Explain the distributed file system requirements?
6	Describe basic distributed file system and storage systems and their properties?
8	Differentiate sun network file systems and Andrew file systems?
9	Explain the implementation of the Andrew file systems?
10	Explain NFS architecture of the sun network file systems?
11	Write about name services and the domain name systems?
12	What are directory and discovery services?
13	Discuss about global name service in detail?
14	Describe the X.500 directory service in detail?
15	Demonstrate the domain name system?
16	Explain the design and implementation issues of distributed shared memory?
17	Explain sequential consistency and Ivy in detail?
18	Explain release consistency with an example?
19	Discuss in detail about Munin?
20	Write a note on all consistency models?

UNIT – V

1	State and explain simple synchronization and failure model for transactions?
2	Explain transactions and their properties in detail?
3	Write a brief note on nested transactions?
4	Write a brief note on locks and its types?
5.	Explain about concurrency control

6.	Write about distributed deadlocks.
7	How is recovery of transactions achieved in a distributed system?

PART – C (PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS IN ALL FIVE UNITS)

1	Describe the types of the system models and their types in a detail manner?
2	Explain why architecture model is important for distributed systems?
3	Explain fundamental model in detail?
4	Explain system architectures in distributed systems?
5	Demonstrate the design requirements for distributed architectures?
6	Describe all the types of the fundamental models?
7	Differentiate interaction model, security model, failure model?
8	Illustrate the client-server architecture of one or more major internet applications?
9	Explain the types of the failures that may normally happen in distributed systems?
10	Explain how events are ordering in real-time with neat sketch?
11	Explain Network Time Protocol in detail?
12	Differentiate failure assumptions and failure detectors?
13	Explain distributed mutual exclusion in detail?
14	Discuss in detail about the algorithms of the mutual exclusion?
15	Define critical section and mutual exclusion and explain its algorithms?
16	Explain how election is done when any particular system crashes?
17	Briefly discuss the types of the election algorithms with a neat sketch?
18	Discuss in detail about the multicast communication?
19	Explain different kinds of problems that are associated with the coordination and agreement in distributed systems?
20	Discuss in detail about consensus and related problems in coordination and agreement?
21	Discuss about the communication between distributed objects in RMI?
22	Explain distributed object model and also discuss the design issues of RMI?
23	Explain the implementation of the RMI and distributed garbage collection?
24	Explain RPC with a neat example?
25	Describe events and its types and explain notifications in the remote invocation?
26	Discuss about jinni distributed event specification?
27	Explain Java RMI and its procedures?
28	Explain how java RMI builds the client and server programs?
29	Describe the design implementation of java RMI?
30	Explain Sun RPC in detail?
32	Explain distributed object model and also discuss the design issues of RMI?
33	Explain the implementation of the RMI and distributed garbage collection?
34	Explain RPC with a neat example?
35	Describe events and its types and explain notifications in the remote invocation?
36	Discuss about jinni distributed event specification?

37	Explain Java RMI and its procedures?
38	Explain how java RMI builds the client and server programs?
39	Describe the design implementation of java RMI?
40	Explain Sun RPC in detail?
41	Discuss about the communication between distributed objects in RMI?
41	Explain two phase commit protocols for nested transactions?
42	Explain concurrency control in distributed transactions?
43	Write a brief note on distributed deadlocks?
44	Explain the transaction recovery procedure in distributed transactions?
45	Explain the recovery of the two- phase commit protocol in distributed transactions?
46	Explain in detail about the three- phase locking?
47	Distinguish between three phase commit and two phase commit protocol?
48	Explain with an example of the interleaving of two transactions that is serially equivalent at each server but is not serially equivalent globally?
49	Explain how the low-phase commit protocol for nested transactions ensures that if the top-level transaction commits, all the right descendants are committed or aborted?
50	Differentiate between the various locking protocols in distributed transactions.

III B.Tech Mech Sem I : – Introduction to Java Programming

UNIT-I

- 1) Explain briefly about Object Oriented Programming concepts? [14M]
2. a) Explain briefly about type conversion and type casting with example program? [7M]
 - b) Write a java program for finding the factorial of a given number using recursion? [7M]
- 3) Explain Procedure oriented programming and Object Oriented programming? [14M]
4. a) Explain different loop control statements with example program? [7M]
 - b) Explain parameter passing Mechanism with example program? [7M]
- 5). Explain Constructor Overloading and Method Overloading with example program? [14M]
6. a) Explain different Operators in Java with examples [7M]
 - b) Explain about Scanner and StringTokenizer class? [7M]
- 7). Explain about Java Buzz words or Features and History of java [14M]
8. a) Explain about Garbage Collector in java ? [7M]
 - b) Explain this keyword with example program? [7M]

UNIT-II

1. a) Explain different types of inheritances with example program? [7M]
b) What is a package? Explain User defined package with program? [7M]
2. a) Explain method overriding with example program? [7M]
b) Explain super keyword with program? [7M]
3. a) Explain Method overriding and Abstract class with example program? [7M]
b) What is an Interface? Explain how to extend one interface with another [7M]
4. a) Difference between Interface and Abstract class? [7M]
b) Explain final keyword with method and class?
5. a) Explain Dynamic binding with example program? [7M]
b) What is an interface? Explain how to extend an interface with program? [7M]
6. a) Explain different Access Specifiers in java? [7M]
b) Explain about this keyword and built in packages?
7. a) Explain different types of inheritances in java? [7M]
b) Explain difference between Abstract class and Interface? [7M]
8. a) Explain about super keyword with example program? [7M]
b) Explain how multiple inheritance is supported in java? Justify [7M]

UNIT-III

1. a) What is an Exception? Explain different types of Exceptions? [7M]
b) Explain about try and catch with example program? [7M]
2. a) Explain how to create a Thread with example program? [7M]
b) Explain about Thread Synchronization with program? [7M]
3. a) Explain about checked and unchecked Exceptions in java? [7M]
b) Explain finally block with example program? [7M]
4. a) What is a Thread? Explain Thread Life cycle with neat diagram? [7M]
b) Explain Inter-Thread Communication with Producer and Consumer problem? [7M]
5. a) Explain throw and throws keyword with example program? [7M]
b) Explain nested try block with example program? [7M]
6. a) Explain Thread Synchronization with example program? [7M]
b) Explain about Creating a Thread with program ? [7M]
7. a) What is Exception? Explain Built in Exceptions in java [7M]

- b) What is Built in Exceptions in java [7M]
- 8. a) Explain about Thread Synchronization with program? [7M]
- b) Explain Inter Thread Communication with program? [7M]

UNIT-IV

- 1). What is an Applet? Explain Applet life Cycle with neat diagram [14M]
- 2. a) Explain FileInputStream and FileOutputStream with program? [7M]
- b) Write a program for Handling Mouse Events? [7M]
- 3) Explain differences between Applet and Application? [14M]
- 4. a) Explain Event classes and Event Listeners with example? [7M]
- b) Write a program for handling Key Events? [7M]
- 5). Explain FileInputStream with program? [14M]
- 6. a) Write a program for handling Mouse Events? [7M]
- b) Explain Adapter class with example program? [7M]
- 7). Explain FileOutputStream with program? [14M]
- 8. a) Explain different types of applets in java [7M]
- b) Explain how to pass parameters to an applet with program? [7M]

UNIT-V

- 1. a) Explain about AWT class hierarchy? [7M]
- b) Explain about AWT and Swing? [7M]
- 2) Explain different types of Layouts with example program? [14M]
- 3. a) Explain about Graphic class methods? [7M]
- b) Explain about Border, Grid, and Flow Layouts in java? [7M]
- 4) Explain about AWT controls with program? [14M]
- 5. a) Differences between AWT and Swings? [7M]
- b) Difference between Applets and Applications? [7M]
- 6) Explain about Layout Managers with program [14M]
- 7. a) Explain about Delegation Event Model? [7M]
- b) Difference between AWT and Swing [7M]
- 8) Explain AWT components [14M]
- i) Label ii) Button iii) Text Field iv) Checkbox

Course File



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Contact Number: 040-23792146/64634237, E-Mail ID: mrct2004@gmail.com, website: www.mrcet.ac.in

DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE FILE 2018-2019

Data Warehousing and Data Mining

Prepared By: P.Sampurnima



COURSE FILE CONTENTS

Sl.No	PARTICULARS
1	Academic Calendar
2	Syllabus
3	Course Objectives & Outcomes
4	Session Plan(Lesson Plan)
5	Time Table
6	International/National Journals
7	Websites
8	Student Seminar Topics
9	Assignment Questions(Unit wise)
10	Question Bank
11	Competitive Exams Questions
12	Objective Questions
13	Lecture Notes (Unit wise)
14	Tutorial Problems
15	Hand Outs
16	Curriculum related known gaps
17	Sample Assignment Copies
18	I Mid Question Papers
19	Marks Obtained And Analysis
20	II Mid Question Papers
21	Marks Obtained And Analysis
22	End Examination Question Papers
23	Marks Obtained and Analysis



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Contact Number: 040-23792146/64634237, E-Mail ID: mrcet2004@gmail.com, website: www.mrcet.ac.in

Ref: MRCET/Academic Calendar/B.Tech/2018-19

Date: 25.06.2018

ACADEMIC CALENDAR FOR THE II, III & IV B.TECH II SEM ACADEMIC YEAR 2018-19

The Academic Calendar for B.Tech II, III, and IV Year – II Semester (Autonomous) for the academic year 2018-19 is approved by academic senate of the institution. The details are given below:

B.Tech : II III & IV Year – II Semester

S.No.	Description	Period
	Commencement of Class Work	10.12.2018
1	I Spell of Instructions	10.12.2018 To 09.02.2019
2	I Mid Examinations	11.02.2019 to 13.02.2019
3	Submission of I Mid Exam Marks	16.02.2019
4	II Spell of Instructions	14.02.2019 to 09.04.2019
5	II Mid Examinations	10.04.2019 to 13.04.2019
6	Submission of II Mid Exam Marks	20.04.2019
7	Preparation & Practical Examinations	15.04.2019 to 20.04.2019.
8	End Semester Examinations (Regular)	22.04.2019 to 04.05.2019
9	Supplementary Examinations	06.05.2019 to 18.05.2019
10	Summer Vacation	20.05.2019 to 15.06.2019
11	Commencement of Class work for II, III&IV Year I Semester for the Academic Year 2019-2020	17.06.2019

Yours faithfully,

Sd/-
Principal

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Examination Branch

Administrative Department



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Yours faithfully,

Sd/-
Principal

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MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

III Year B.Tech IT –II Sem

L T/P/D C

5 1/-/ 4

(R15A0526)DATA WAREHOUSING AND DATA MINING**Course Objectives:**

- Understand the fundamental processes, concepts and techniques of data mining and develop an appreciation for the inherent complexity of the data-mining task.
- Characterize the kinds of patterns that can be discovered by association rule mining.
- Evaluate methodological issues underlying the effective application of data mining.
- Advance research skills through the investigation of data-mining literature.

UNIT I

Introduction: Fundamentals of data mining, Data Mining Functionalities, Classification of Data Mining systems, Data Mining Task Primitives, Integration of a Data Mining System with a Database or a Data Warehouse System, Major issues in Data Mining.

Data Preprocessing: Need for Preprocessing the Data, Data Cleaning, Data Integration and Transformation, Data Reduction, Discretization and Concept Hierarchy Generation.

UNIT II

Data Warehouse and OLAP Technology for Data Mining: Data Warehouse. Multidimensional Data Model, Data Warehouse Architecture, Data Warehouse Implementation, Further Development of Data Cube Technology, From Data Warehousing to Data Mining, Data Cube Computation and Data Generalization: Attribute-Oriented Induction.

Mining Frequent Patterns, Associations and Correlations: Basic Concepts, Efficient and Scalable Frequent Item set Mining Methods, Mining various kinds of Association Rules, From Association Mining to Correlation Analysis, Constraint-Based Association Mining

UNIT III

Classification and Prediction: Issues Regarding Classification and Prediction, Classification by Decision Tree Induction, Bayesian Classification, Rule-Based Classification, Classification by Back-propagation, Support Vector Machines, Associative Classification, Lazy Learners, Other Classification Methods, Prediction, Accuracy and Error measures. Evaluating the accuracy of a Classifier or a Predictor, Ensemble Methods

UNIT IV

Cluster Analysis : Types of Data in Cluster Analysis, A Categorization of Major Clustering Methods, Partitioning Methods, Hierarchical Methods, Density-Based Methods, Grid-Based Methods, Model-Based Clustering Methods, Outlier Analysis

Mining Streams, Time Series and Sequence Data: Mining Data Streams, Mining Time-Series Data, Mining Sequence Patterns in Transactional Databases, Mining Sequence Patterns in Biological Data. Graph Mining, Social Network Analysis and Multirelational Data Mining

UNIT V

Mining Object, Spatial, Multimedia, Text and Web Data: Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Spatial Data Mining, Multimedia Data Mining, Text Mining, Mining the World Wide Web. **Applications and Trends In Data Mining:** Data Mining Applications, Data Mining System Products and Research Prototypes. Additional Themes on Data Mining and Social Impacts of Data Mining.

TEXT BOOKS:

1. Data Mining-Concepts and Techniques -Jiawei Han & Michel Kamber. Morten Publisher 2nd Edition, 2006.

REFERENCE BOOKS:

1. Data Mining Introductory and advanced topics -Margaret H Dunham. Pearson education.
2. Data Mining Techniques - Arun K Pujari. University Press.
3. Data Warehousing in the Real World- Sam Aanhory & Dennis Murray Pearson in Edn Asia. .
4. Data Warehousing Fundamentals-Paulraj Ponnalah Wiley student Edition
5. The Data Warehouse Life cycle Tool kit-Ralph Kimball Wiley student edition

Course Outcomes:

At the end of this course the student should be able to

- Acquire knowledge about different data mining models and techniques.
- Explore various Data mining and data warehousing application areas.
- Demonstrate an appreciation of the importance of paradigms from the fields of Artificial Intelligence and Machine Learning to data mining.

DATA WAREHOUSING AND DATA MINING

Objectives:

1. Understand the fundamental processes, concepts and techniques of data mining and develop an appreciation for the inherent complexity of the data-mining task.
2. Characterize the kinds of patterns that can be discovered by association rule mining.
3. Evaluate methodological issues underlying the effective application of data mining.
4. Advance research skills through the investigation of data-mining literature.

Outcomes:

1. At the end of this course the student should be able to Acquire knowledge about different data mining models and techniques.
2. Explore various Data mining and data warehousing application areas.
3. Demonstrate an appreciation of the importance of paradigms from the fields of Artificial Intelligence and Machine Learning to data mining.

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

LESSON PLAN

SUB: DMDW BRANCH; IV year B.Tech.CSE I SEM (for academic 2018-2019)

INSTRUCTOR:P.SAMPURNIMA

UNIT NO	CONTENTS	DATE	NO.OF CLASSES	TEXTBOOK
1	Introduction: Fundamentals of data mining	10.12.18	1	T1
	Data Mining Functionalities	11.12.18	1	T1
	Classification of Data Mining systems	13.12.18	1	T1
	Data Mining Task Primitives	20.12.18	1	T1
	Integration of a data Mining System with a Database or a data Warehouse System	21.12.18	2	T1
	Major issues in Data Mining	22.12.18	1	T1
	Data Preprocessing: Needs Preprocessing the Data	23.12.18	2	T1
	Data Cleaning	23.12.18	1	T1
	Data Integration and Transformation,	26.12.18	2	T1
	Data Reduction	27.12.18	1	T1
	Discretization and Concept Hierarchy Generation	28.12.18	2	T1
2	Data Warehouse and OLAP Technology for Data Mining Data Warehouse	02.01.19	2	T1
	Multidimensional Data Model	04.01.19	1	T1
	Data Warehouse Architecture	05.01.19	1	T1
	Data Warehouse Implementation	05.01.19	1	T1
	Further Development of Data Cube Technology	05.01.19	1	T1
	From Data Warehousing to Data Mining.	08.01.19	1	T1
	Data Cube Computation and Data Generalization	16.01.19	2	T1
	Efficient Methods for Data Cube Computation	17.01.19	1	T1
3	Further Development of Data Cube and OLAP Technology,Attribute-Oriented Induction	18.01.19	2	T1
	Mining Frequent Patterns, Associations and Correlations:	22.01.19	2	T1
	Basic Concepts, Efficient and Scalable Frequent Itemset Mining Methods	28.01.19	2	T1
	Mining various kinds of Association Rules	30.01.19	2	T1
	From Association Mining to Correlation Analysis.	02.02.19	1	T1
4	Constraint-Based Association mining	03.02.19	1	T1
	Classification and Prediction :	04.02.19	1	T1
	Issues Regarding Classification and Prediction	04.02.19	1	T1
	Classification by Decision Tree Induction	09.02.19	1	T1
	Bayesian Classification	09.02.19	1	T1
	Rule-Based Classification	10.02.19	1	T1
	Classification by Backpropagation	11.02.19	1	T1
Support Vector machines	12.02.19	1	T1	
Associative Classification	13.02.19	1	T1	

	Lazy Learners	16.02.19	1	T1
	Other Classification Methods	17.02.19	1	T1
	Prediction, Accuracy and Error measures	25.02.19	2	T1
	Evaluating the accuracy of a Classifier or a Predictor	03.03.19	1	T1
	Ensemble Methods.	06.03.19	1	T1
5	Cluster Analysis Introduction:	07.03.19	1	T1
	Types of Data in Cluster Analysis	09.03.19	1	T1
	A Categorization of major Clustering Methods	10.03.19	1	T1
	Partitioning methods	13.03.19	1	T1
	Hierarchical Methods	14.03.19	1	T1
	Density-Based Methods	16.03.19	1	T1
	Grid-Based Methods	19.03.19	1	T1
	Model-Based Clustering Methods	20.03.19	1	T1
	Clustering High-Dimensional data	21.03.19	1	T1
	Constraint-Based Cluster Analysis	23.03.19	1	T1
Outlier Analysis	26.03.19	1	T1	

TEXT BOOKS:

T1: Data Mining – Concepts and Techniques - JIAWEI HAN & MICHELINE KAMBER Harcourt India. Second edition, Elsevier.

FACULTY

HOD

PRINCIPAL

STUDENTS SEMINAR TOPICS

FROM

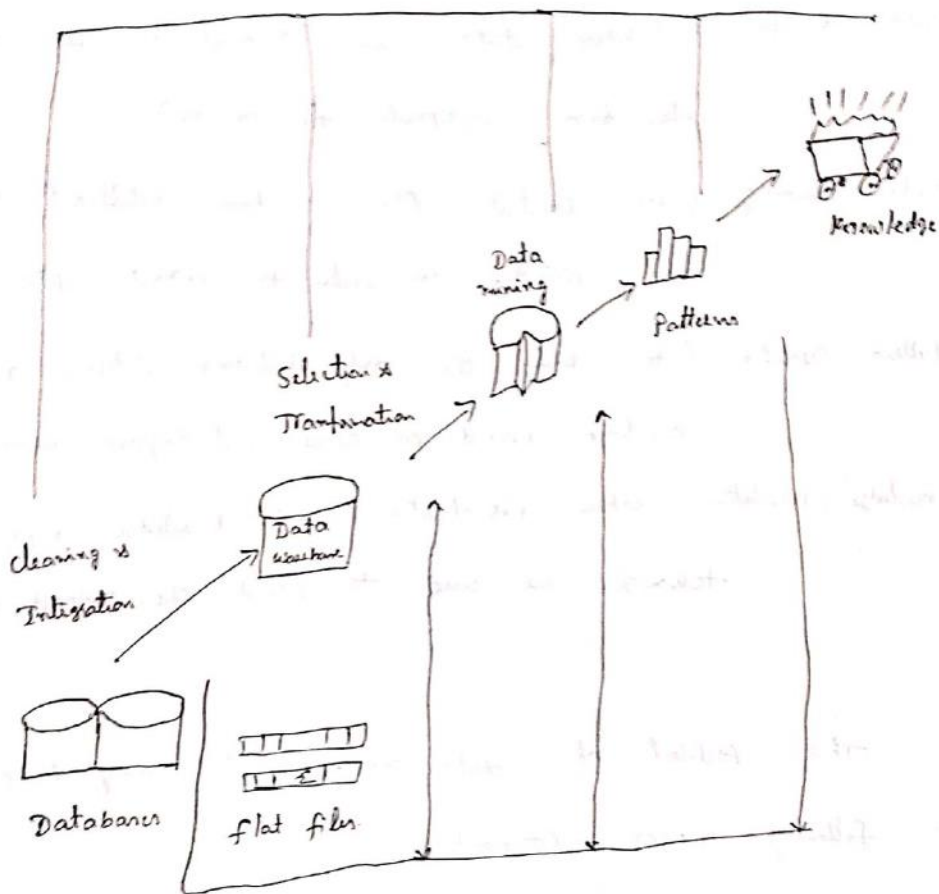
DATA WAREHOUSING AND DATA MINING

1. Educational data mining
2. Business intelligence predictive Analytics
3. Big data and Business Intelligence(BI) or Market Intelligence
4. Open source Data Mining
5. Data Mining System and Knowledge Discovery System.
6. Data mining Trends
7. Apriori Algorithm
8. Web Analytics solution
9. Data Mining marketing
10. Data Mining in Search Engine Analytics (related SEO)

UNIT - I

Introduction :-

Data mining refers to extracting or 'mining' knowledge from large amounts of data.



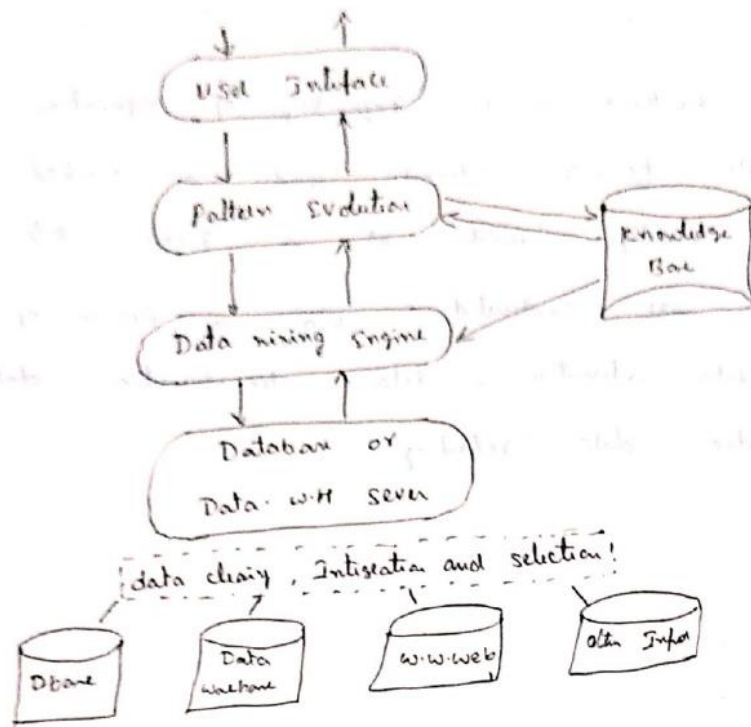
Data mining as a step in the process of knowledge discovery.

14 Knowledge discovery as a process of depicted in fig. 1 and consists of an iterative sequence of the following steps.

- Data cleaning (to remove noise and inconsistent data)
- Data Integration (when multiple data sources may be combined).
- Data Selection (when data relevant to the analysis task are retrieved from the database)
- Data Transformation (when data are transformed or consolidated into forms appropriate for mining).
- Data mining (As essential process where intelligent methods are applied in order to extract data patterns).
- Pattern evaluation (to identify the truly interesting patterns representing knowledge based on some interestingness measure).
- Knowledge presentation (when visualization and knowledge representation techniques are used to present the mined knowledge to user)

The Architecture of data mining system may have the following major components.

- Database, data warehouse, world wide web, or other information repository → This is one or set of databases.
- Database or data warehouse server :- It is responsible for fetching the relevant data, based on the user's data mining request.



Architecture of data mining system

Knowledge base :- This is the domain knowledge i.e. used to guide the search or evaluate the interestingness of resulting patterns.

Data mining Engine :- This is central to the data mining system and ideally consists of a set of functional modules for tasks such as characterization, Association, and correlation Analysis, classification and prediction.

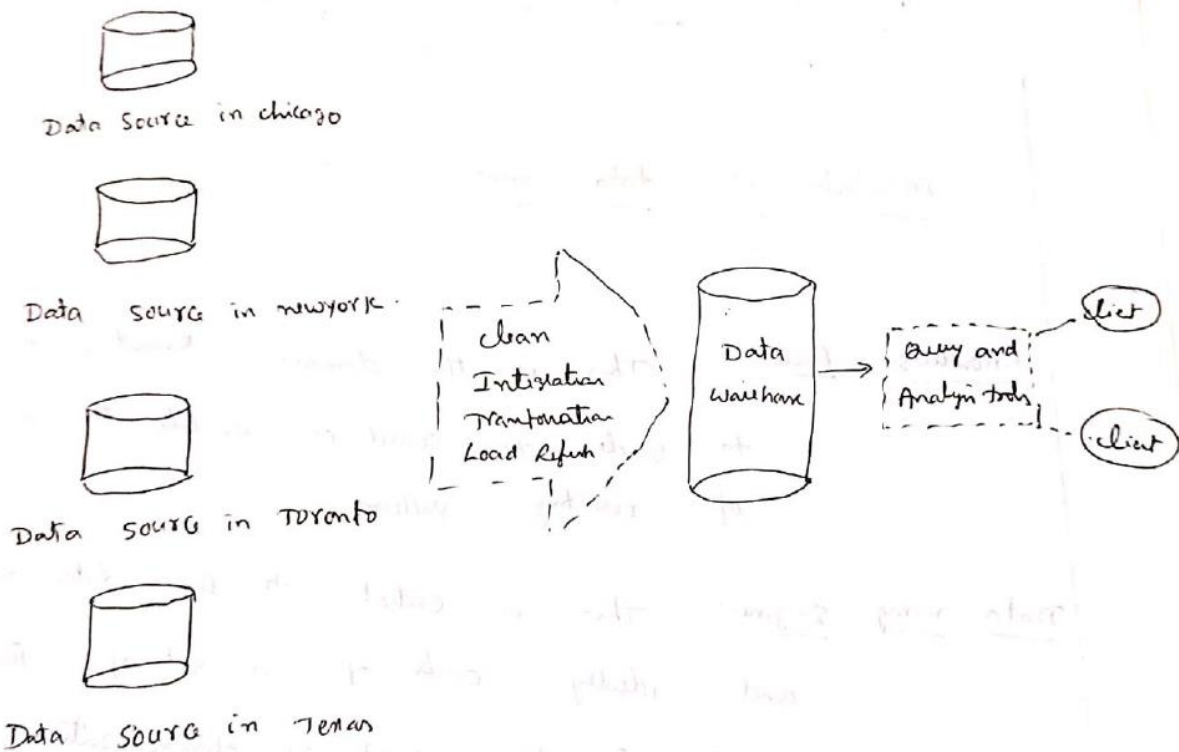
Pattern Evaluation module - It uses interestingness thresholds to filter out discovered patterns.

User Interface → It communicates with data mining system.

Data Warehouse

A data warehouse is a repository of information collected from multiple sources, stored under a unified schema and that usually resides at a single site.

D.W. are constructed via a process of data cleaning, data integration, data transformation, data loading and periodic data refreshing.



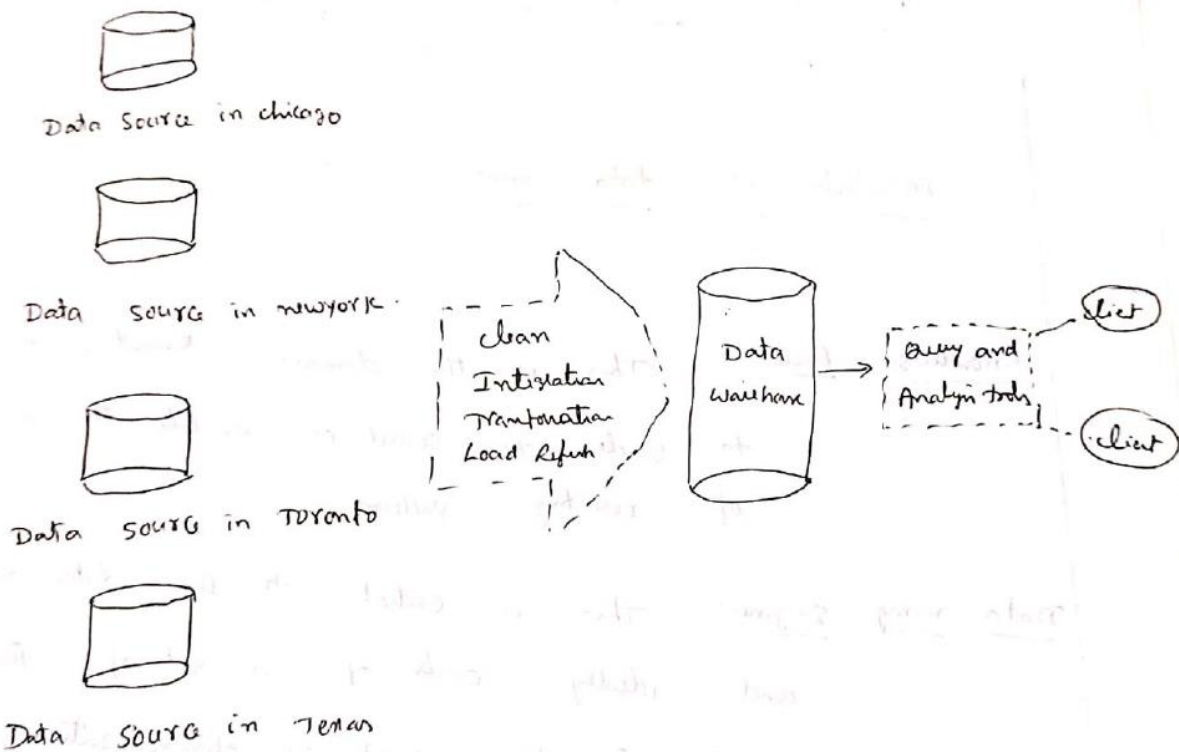
Typical Framework of a d.w. for All Electronics

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TEACHING

SCHEDULE

Internal Tests : First :

Second :

Third :

Unit	Name of the Topic	No of Classes Required	Duration		Covered / Not Covered	Measures Taken if not Covered	Signature	
			From	To			Faculty	HOD / Principal
I	Introduction to SE, Changing nature of software, SW myths A Generic view of Process: SW Engg, Layered Tech a Process framework, Process Patterns, Process Assessment Process model: The waterfall model, incremental process model, Evolutionary Process models, The Unified Process, RUP and Agile Process model, Extreme programming, other Process model of Agile development & Tools	12	16/12/2019	03/01/2020				
II	software Requirements: Functional and non functional requirements, User requirements, system requirements, interface specification, the SW req. Document Requirements Engineering process: Feasibility studies, elicitation and Analysis, Req Validation, management, system model: context model, behavioral model, Data model, Object model, Structured methods (UML diagram)	10	04/01/2020	24/01/2020				
III	reverse Engineering: Design process and design quality, design concepts, the design model. creating an architectural design: SW architecture, data design, architectural design, patterns, object oriented design, object and object classes, An object oriented design Process, Design Evaluation partitioning UI design: Galton rules, user interface analysis and design, interface analysis, interface design steps, design evaluation	14	25/01/2020	13/2/2020				
IV	Testing strategies: A strategic approach to ST, conventional STs, black-box and white box testing, validation testing, system testing, the art of Debugging, Product metrics, SAU, Design Model, V-model for testing, metrics of maintenance	19	14/02/2020	2/3/2020				
V	Reviewing Vs Proactive Risk strategies, software risks, identification, refinement, Review, Review Plan, Quality Management: Quality concepts, QA, SW reviews, formal technical reviews, Statistical SA, SA, SW, SW reliability, The ISO 9000 quality standards.	6	5/3/2020	13/3/2020				