Academic Year: 2021-2022

Name of the Course: Database Management Systems

Course Code: CS404PC

Year and Semester: II/II

Name of the Faculty: Mr. M. Praveen

Department in which subject is handled: CSE

Course Type: Basic Sciences / Humanities & Social Sciences/ Professional Core / Professional elective / Open Elective /Engineering Sciences / Mandatory courses / Project.

Vision of the Institute

To emerge as a premier institute for high quality professional graduates who can contribute to economic and social developments of the Nation.

Mission of the Institute

Mission	Statement
IM1	To have holistic approach in curriculum and pedagogy through industry interface to meet the needs of Global Competency.
IM2	To develop students with knowledge, attitude, employability skills, entrepreneurship, research potential and professionally ethical citizens.
IM3	To contribute to advancement of Engineering & Technology that would help to satisfy the societal needs.
IM4	To preserve, promote cultural heritage, humanistic values and spiritual values thus helping in peace and harmony in the society.

Vision of the Department

To Provide Quality Education in Computer Science for the innovative professionals to work for the development of the nation.

Mission of the Department

Mission	Statement
DM1	Laying the path for rich skills in Computer Science through the basic knowledge of mathematics and fundamentals of engineering
DM2	Provide latest tools and technology to the students as a part of learning infrastructure
DM3	Training the students towards employability and entrepreneurship to meet the societal needs.
DM4	Grooming the students with professional and social ethics.

Program Educational Objectives:

PEO1: The graduates of Computer Science and Engineering will have successful career in technology.

PEO2: The graduates of the program will have solid technical and professional foundation to continue higher studies.

PEO3: The graduate of the program will have skills to develop products, offer services and innovation.

PEO4: The graduates of the program will have fundamental awareness of industry process, tools and technologies.

Program Outcomes (POs)

Engineering Graduates will be able to:

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental context, and demonstrate the knowledge of, and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9. Individual and team network: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12. Life-Long learning: Recognize the need for, and have the preparation and able to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO1. Foundation of mathematical concepts: To use mathematical methodologies to crack problem using suitable mathematical analysis, data structure and suitable algorithm.

PSO2. Foundation of Computer Science: The ability to interpret the fundamental concepts and methodology of computer systems. Students can understand the functionality of hardware and software aspects of computer systems.

PSO3. Foundation of Software development: The ability to grasp the software development lifecycle and methodologies of software systems. Possess competent skills and knowledge of software design process.

CS404PC: DATABASE MANAGEMENT SYSTEMS

B.TECH II Year II Sem.   **L T P C**

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Prerequisites: A course on "Data Structures".

Course Objectives:
- To understand the basic concepts and the applications of database systems.
- To master the basics of SQL and construct queries using SQL.
- Topics include data models, database design, relational model, relational algebra, transactioncontrol, concurrency control, storage structures and access techniques.

Course Outcomes:
- Gain knowledge of fundamentals of DBMS, database design and normal forms
- Master the basics of SQL for retrieval and management of data.
- Be acquainted with the basics of transaction processing and concurrency control.
- Familiarity with database storage structures and access techniques

UNIT - I
Database System Applications: A Historical Perspective, File Systems versus a DBMS, the Data Model, Levels of Abstraction in a DBMS, Data Independence, Structure of a DBMS
Introduction to Database Design: Database Design and ER Diagrams, Entities, Attributes, and EntitySets, Relationships and Relationship Sets, Additional Features of the ER Model, Conceptual Design With the ER Model

UNIT - II
Introduction to the Relational Model: Integrity constraint over relations, enforcing integrity constraints, querying relational data, logical data base design, introduction to views, destroying/alteringtables and views.
Relational Algebra**,** Tuple relational Calculus, Domain relational calculus.

UNIT - III
SQL: QUERIES, CONSTRAINTS, TRIGGERS: form of basic SQL query, UNION, INTERSECT, and

EXCEPT, Nested Queries, aggregation operators, NULL values, complex integrity constraints in SQL,triggers and active data bases.
Schema Refinement: Problems caused by redundancy, decompositions, problems

related to decomposition, reasoning about functional dependencies, FIRST, SECOND, THIRD normal forms, BCNF, lossless join decomposition, multi-valued dependencies, FOURTH normal form, FIFTH normal form.

UNIT - IV

Transaction Concept, Transaction State, Implementation of Atomicity and Durability, Concurrent Executions, Serializability, Recoverability, Implementation of Isolation, Testing for serializability, Lock Based Protocols, Timestamp Based Protocols, Validation- Based Protocols, Multiple Granularity, Recovery and Atomicity, Log–Based Recovery, Recovery with Concurrent Transactions.

UNIT - V

Data on External Storage, File Organization and Indexing, Cluster Indexes, Primary and Secondary Indexes, Index data Structures, Hash Based Indexing, Tree base Indexing, Comparison of File Organizations, Indexes and Performance Tuning, Intuitions for tree Indexes, Indexed Sequential Access Methods (ISAM), B+ Trees: A Dynamic Index Structure.

TEXT BOOKS:
1. Database Management Systems, Raghurama Krishnan, Johannes Gehrke, *Tata Mc Graw Hill*
   3rd Edition
2. Database System Concepts, Silberschatz, Korth, *Mc Graw hill*, V edition.

REFERENCE BOOKS:
1. Database Systems design, Implementation, and Management, Peter Rob & Carlos Coronel 7thEdition.
2. Fundamentals of Database Systems, Elmasri Navrate, *Pearson Education*
3. Introduction to Database Systems, C. J. Date, *Pearson Education*
4. Oracle for Professionals, The X Team, S.Shah and V. Shah, *SPD*.
5. Database Systems Using Oracle: A Simplified guide to SQL and PL/SQL,Shah, *PHI*.
6. Fundamentals of Database Management Systems, M. L. Gillenson, *Wiley Student* Edition.

Data Base Management Systems: (CS404PC)   **A.Y:2021-22**

Students will be able to

C224.1: Describe the basics of Database Management System and ER Model (**Comprehension**)

C224.2: Identify How to apply Constraints and query using Relational Model and overview of Relational Algebra (**Knowledge**)

C224.3: Organize and formulate SQL queries on data (**Synthesis**)

C224.4: Apply normalization for the development of application software (**Application**)

C224.5: Understand transaction management and concurrency control techniques on database (**Comprehension**)

C224.6: Identify the database storage structures and access techniques (**Knowledge**)

Mapping Of Course Outcomes With PO'S & PSO'S:

High -3   Medium -2   Low-1

PO,PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C224.1	2	2	-	-	-	-	-	-	-	-	-	-	-	2	2
C224.2	2	3	-	2	2	-	-	-	-	-	-	-	-	2	2
C224.3	2	2	2	-	2	-	-	-	-	-	-	2	-	2	2
C224.4	2	3	3	2	2	2	-	-	-	-	-	2	2	2	2
C224.5	2	2	-	-	2	2	-	-	-	-	-	2	2	2	2
C224.6	2	2	-	-	2	-	-	-	-	-	-	2	2	2	2
C224	2.00	2.33	2.50	2.00	2.00	2.00	-	-	-	-	-	2.00	2.00	2.00	2.00

CO-PO/PSO Mapping Justification

C224.1: Describe the basics of Database Management System and ER Model (**Comprehension**)

	Justification
PO 1	Student should understand to apply ER-Diagrams for real world problems.
PO 2	Student should analyze how data can be divided to different abstract levels and construct ER-Model.
PSO2	Student understands the functionality of database management systems and can draw ER-Diagrams for the given database schema.
PSO3	Student develops the knowledge of database design and can process the ER-Model.

C224.2: Identify How to apply Constraints and query using Relational Model and overview of Relational Algebra (**Knowledge**)

	Justification
PO 1	udents understand how to apply constraints on relation model and relational algebra.
PO 2	enforcing integrity constraints student can find solutions for the given relational data and relational algebra.
PO 4	dent can be able to design a database which provides security by enforcing integrity constraints.
PO 5	dent can use the modern tools and latest versions for providing security and authorization by enforcing integrity constraints.
PSO2	dent by using the concept of integrity constraints can formulate a better relational model.
PSO3	dent possesses more skill and knowledge by implementing integrity constraints.

C224.3: Organize and formulate SQL queries on data (**Synthesis**)

	Justification
PO 1	...dent understands how to apply SQL queries on relation model.
PO 2	...applying DDL, DML, TCL queries student can find solutions for the given relational data.
PO 3	...dent can find solutions by using SQL queries for a given complex engineering problem.
PO 5	...dent can use the modern tools and latest versions of SQL for providing convenient retrieval of data.
PO 12	...ing SQL queries student can apply and retrieve data affectively in all aspects of life.
PSO2	...dent by using SQL queries can formulate better relational model.
PSO3	...dent possesses more skill and knowledge by implementing SQL queries.

C224.4: Apply normalization for the development of application software (**Application**)

	Justification
PO 1	...dent applies normal forms on the given application.
PO 2	...dent studies the database and analyze to what point the given application can be normalized.
PO 3	...dent can develop and design the appropriate solutions by using normalization.
PO 4	...dent can also implement new ideas and interpret the data to normalize the application.
PO 5	...dent can use the modern tools and latest versions to facilitate how to normalize the given schema with latest technology.
PO 6	...ing normalization student can apply the normal forms in all the applications and engineering and society.
PO 12	...dent can implement normalization and develop applications software in all applications of our day to day life.

PSO1	...dent with the help of mathematical and data structure knowledge finds solution to normalize the given schema.
PSO2	...dent can implement the fundamental concepts for the functionality of application software with normalization.
PSO3	...dent can grasp the how to develop application software with the help of normal forms.

C224.5: Understand transaction management and concurrency control techniques on database (**Comprehension**)

	Justification
PO 1	...dent applies properties of transaction and concurrency control techniques to find the solutions of a given problem.
PO 2	...dent can analyze the transaction states and concurrency control mechanisms in the field of engineering.
PO 5	...dents can select modern tools and techniques for concurrency control in database.
PO 6	...dents can implement other engineering practices for a transaction management and concurrency control techniques in database.
PO 12	...dents can identify new technologies to implement transaction management and concurrency control techniques in our day to day life.
PSO1	...dents can use different solutions of mathematics and algorithms for efficient implementation of transaction management and concurrency control techniques.
PSO2	...dents can implement concepts to facilitate better performance of concurrency techniques in software.
PSO3	...dents can have ability to grasp new skills and techniques for implementing software systems using transaction management and concurrency control techniques.

C224.6: Identify the database storage structures and access techniques (**Knowledge**).

	Justification
PO 1	ident applies properties of database storage structures and access techniques to find the solutions of a given problem.
PO 2	ident can analyze the database storage structures and access techniques in the field of engineering.
PO 5	idents can select modern tools and techniques for implementing database storage structures and access techniques.
PO 12	idents can identify new technologies to implement database storage structures and access techniques in our day to day life.
PSO1	idents can use different solutions of mathematics and algorithms for efficient implementation of database storage structures and access techniques.
PSO2	idents can implement concepts to facilitate better performance of data storage and access techniques in software.
PSO3	idents can have ability to grasp new skills and techniques for implementing software systems using database storage structures and access techniques

Lesson Plan – DATABASE MANAGEMENT SYSTEMS(CS404PC)

Faculty Name: Mr.M.Praveen	Year / Sem: II/II	Academic Year: 2021-22
		w.e.f. 21 March 2021

L. No	Name of the Topic	Plan Date	Actual Date	Teaching Method
1	**UNIT - I** : Database System Applications , A Historical Perspective			
2	File System Vs DBMS			
3	The Data Model, Levels of Data Abstraction			
4	Data Independence, Structure of a DBMS.			
T1				
5	Introduction to Database Design: Database Design and ER Diagrams			
6	Entities, Attributes and Entity Sets			
7	Relationships and Relationship Sets			
8	Additional features of ER Model			
9	Conceptual Design with ER Model			
10	Conceptual Design with ER Model			
T2				
11	**UNIT - II** : Introduction to the Relational Model: Introduction, Integrity Constraints over relations			
12	Enforcing Integrity constraints			
13	Querying relational data			
T3				
14	Logical Database design			
15	Introduction to Views, Destroying views			
16	Altering Tables and Views			
17	Relational Algebra			
18	Tuple relational calculus,			
T4				
18	**UNIT - III** : SQL: Form of basic SQL Query			

19	Union , Intersect and Except			
20	Nested Queries			
T5				
21	Aggregate Operators, NULL values			
22	Complex Integrity Constraints in SQL,			
23	Triggers, Designing Active Databases			
24	Schema Refinement: Problems caused by redundancy			
25	Decomposition, Problems related to Decomposition, Reasoning about FD's			
T6				
26	Normal Forms: First Normal Form, Second Normal Form			
27	Third Normal Form, BCNF, Lossless join Decomposition			
28	Multi valued Dependencies, Fourth Normal Form			
29	Fifth Normal Form			
30	**UNIT – IV** : Transaction Concept, Transaction State			
31	Implementation of Atomicity and Durability			
T7				
32	Concurrent Execution, Serializability			
33	Recoverability, Implementation of Isolation			
34	Testing of Serializability, Lock Based Protocols			
T8				
35	Time stamp based Protocols			
36	Validation Based Protocols			
37	Concurrency Control: Lock Based Protocols			
38	Multiple Granularity, Recovery and Atomicity			
39	Log Based Recovery, Recovery with Concurrent Transaction			
T9				
40	**UNIT- V**: Data on External Storage			
41	File organization and indexing ,Cluster Indexes structures.			
42	Primary and Secondary Indexes, Index Data Structures			

43	Tree based Indexing, Hash based Indexing			
44	Comparison of file organizations			
45	Indexes and performance Tuning,			
T10				
46	Intuitions for Tree Indexes, ISAM			
47	B+ trees			

TEXT BOOKS:

1:Data base Management Systems", Raghu Rama Krishnan, Johannes Gehrke, 2ndEdition, 2003, McGrawHill.
2:Database systems conceptsA.Silberschatz ,Henry.F.Korth,S.Sudarshan, , McGrawHill.,6th edition

REFERENCES BOOKS:

1."Fundamentals of Database Systems", ElmasriNavrate, 6th edition, 2013,Pearson.

2."Data base Systems design", Implementation, and Management, Peter Rob &Carlos Coronel 7thEdition.

3."Introduction to Database Systems", C.J.Date, PearsonEducation.

4."Data base System Concepts", Silberschatz, Korth, McGraw Hill, Vedition.

WEB REFERENCES:

www.studytonight.com/databasemanagementsystems/tcp-ip-reference-mode

www.sanfoundry.com/best-reference-books-databasemanagementsystems/

Signature of faculty   **Signature of HOD**

KOMMURI PRATAP REDDY INSTITUTE OF TECHNOLOGY

Class: II-B.Tech II Sem (CSE-B) **A.Y: 2021-22**

W.E.F- 21-03-2022

LH:- B-302

Period / Day	I 9:30-10:20	II 10:20 - 11:10	11:10 - 11:20	III 11:20-12:10	IV 12:10-1:00	1:00-1:40	V 1:40-2:30	VI 2:30-3:20	VII 3:20-4:10
MON	OS	LAB	B	OS(B1)/DBMS(B2)		L	DBMS	BEFA	COI
TUE	DM	DBMS	R	OS	INTERNET	U	JAVA	BEFA	SPORTS
WED	BEFA	JAVA	E	COI	OS	N	DBMS	DM	LIB
THU	DBMS	LAB	A	DBMS(B1)/JP (B2)		C	OS	SEED	
FRI	JAVA	LAB	K	JP(B1)/OS(B2)		H	DM	SEED	
SAT	COI	DM		BEFA	DBMS		JAVA	OS	REM/COUNS

Course Code	Course Name	Name of the Faculty	Course Code	Course Name	Name of the Faculty
CS401PC	Discrete Mathematics	Mr. P.Vijay	CS406PC	Operating Systems Lab	Mr. R.Nithin / B.Saida/G.Divya
SM402MS	Business Economics & Financial Analysis	Dr. S.Nagaraju	CS407PC	Database Management Systems Lab	Mr. M.Praveen / Mr.P.Vijay/B.Saida
CS403PC	Operating Systems	Mr. R.Nithin	CS408PC	Java Programming Lab	Keerthi Chandra
CS404PC	Database Management Systems	Mr. M.Praveen	*MC409	Constitution of India	Mr.K.Srinivasa Rao
CS405PC	Java Programming	Mr. A.Simhadri		Library	Mr.R.Nithin
	Internet/Sports	Mr. M.Praveen		Rem/Couns	Mr.R.Nithin
CLASS INCHARGE – Mr. M.Praveen					

Class In-Charge   **Time Table Coordinator**   **Head of the Department**
Principal

KOMMURI PRATAP REDDY INSTITUTE OF TECHNOLOGY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

REVISED ACADEMIC CALENDAR 2021-22

B. Tech./B.Pharm. II YEAR II SEMESTER

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	21.03.2022	
2	1st Spell of Instructions	21.03.2022	14.05.2022 (8 Weeks)
3	Summer Vacation	*15.05.2022*	*29.05.2022 (2 Week)*
4	First Mid Term Examinations	30.05.2022	04.06.2022 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	11.06.2022	
6	2nd Spell of Instructions	06.06.2022	01.08.2022 (8 Weeks)
7	Second Mid Term Examinations	02.08.2022	06.08.2022 (1 Week)
8	Preparation Holidays and Practical Examinations	08.08.2022	16.08.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	16.08.2022	
10	End Semester Examinations	17.08.2022	30.08.2022 (2 Weeks)

07/05/22

REGISTRAR

Assignment Questions

Subject: DBMS   Year/Semester: II/1I

Name of the Faculty: Mr. M. Praveen

S. No	Question
	Unit – I
1	What is DBMS ? What are the goals of DBMS ? (L1:Remember)
2	List the advantages and disadvantages of DBMS ? (L1:Remember)
3	Define of file system and file. Write down the draw backs of the file system ? (L1:Remember)
4	Describe an overview of Database architecture.? (L2:Understand)

Assignment Questions

Subject: DBMS   **Year/Semester: II/1I**

Name of the Faculty: Mr. M. Praveen

S. No	Question
	Unit – II
1	Demonstrate the Relational Model and its Components? (L2:Understand)
2	Illustrate the Integrity constraint over relations and its types? (L3:Apply)
3	Explain modification of the database operations in relational algebra with example.(L2:Understand)
4	Explain about domain relational calculus with example. (L2:Understand)

QUESTION BANK

Subject: Database Management Systems   **Year/Semester**: II/II

Name of the Faculty: Mr.M.Praveen

	Unit 1		
	Part A		
Sr. No.	**Question**	**Year**	**Marks**
1	Discuss about DDL.	May 2016	2
2	List the properties of ER Diagram?	Oct/Nov 2016	2
3	Explain the 3 levels of abstraction?	Oct/Nov 2016	3
4	Write brief notes on altering tables and View?	May 2016	3
5	Define Database?		
	Part B		
1	Explain the Relational Database Architecture?	May 2016	10
2	What are the disadvantages of File System for Data management? Explain how they are addressed by DBMS.	Oct/Nov 2016	8
3	What is a database? Discuss database system applications.	Nov/Dec 2015	8
4	Discuss the responsibilities and duties of DBA.	Nov/Dec 2015	7
5	Explain about constraint and difference between participation constraint and over lapping constraint.	Nov/Dec 2015	8
6	What are the advantages of DBMS?	Jun 2014	8
7	Explain about specialization and Generalization with suitable examples?	Jun 2014	7
8	What is weak entity? Give an example for weak entity.	Jun 2014	8
9	Explain several choices and issues involved in conceptual design with ER Model.	Nov 2015	16
	Unit 2		
	Part A		
1	What is meant by nested queries?	May 2016	3
2	Describe about outerjoin.	May 2016	2
3	Create Table command	Oct/Nov 2016	3
4	Explain Integrity constraints over Relations?	Oct/Nov 2016	3
5	Operators of relational algebra?		
	Part B		
1	Explain about Tuple Relational calculus?	May 2016	10
2	Explain about domain relational calculus?	May 2016	10

3	What are the basic Primitive operators of relational algebra?	Oct/Nov 2016	7
4	What is the difference between Tuple relational calculus and domain relational calculus?	Jun 2014	8
5	Explain about Outer Join Operation?	Jun 2014	7
6	Write the SQL Queries for the given database? Salesperson(SSN,Name,syear,deptno) Trip(TripID,SSN,Fromcity, Tocity, dtime,rdate) Expense (TripID,Accno,Amount) i) Give the details of trips that exceeded \$2000 in expense. ii) Print the SSN of Salesman who took trips to Kulumanali. iii) Print the total trip expense with SSN=”\$0123”	Jun 2014	8
7	Explain the inner join with suitable example?	Nov 2015	8
8	Explain the aggregate functions used in SQL.	Nov 2015	8
9	Explain about Relational Calculus.	Nov/Dec 2015	8
10	What is the difference between Algebra and calculus?		

Unit 3			
Part A			
1	What is second normal form?	May 2016	2
2	Describe the inclusion dependencies.	May 2016	3
3	What is functional dependency?	Oct/Nov 2016	3
4	How can you identify a relation is in 2NF.	Oct/Nov 2016	3
5	What is Normalisation		
Part B			
1	What is meant functional dependencies? Discuss about 2NF.	May 2016	10
2	Explain 2NF and 3NF. Why BCNF is preferred over 3NF.	Nov/Dec 2015	8
3	Why we need Normalization? Explain the difference between 3rd and 4th Normal forms.	Jun 2014	8
4	Explain about loss less join decomposition?	Jun 2014	7
5	What are the steps to be followed to convert a relation in 3NF to BCNF?	Oct/Nov 2016	8

Unit 4			
Part A			

1	What is meant by Buffer Management?	May 2016	2
2	What is meant by Remote backup system?	May 2016	2
3	Write about Transaction states?	Oct/Nov 2016	2
4	What are acid properties?	Oct/Nov 2016	3
Part B			
1	What is meant by Concurrency control?	May 2016	10
2	How does recovery manage ensure atomicity of transactions? How does it ensure durability?	Jun 2014	8
3	Explain about acid properties?	Nov 2015	8
4	Explain aries in detail?	Oct/Nov 2016	5
Unit 5			
Part A			
1	Explain about primary indexes?	May 2016	2
2	What is meant by Linear hashing?	May 2016	3
3	What is an Index?	Oct/Nov 2016	2
4	What are the disadvantages of using tree structured indexes?	Oct/Nov 2016	3
Part B			
1	What are the indexes data structures? Explain any one of them.	May 2016	10
2	Difference between Sparse and dense indexing?	Oct/Nov 2016	5
3	Explain in Detail heap file organisation with Indexes?	Nov/Dec 2015	8
4	Difference between primary and secondary indexing?	Jun 2014	8
5	What is B+ Tree. Explain the insertion operation in B+ tree indexing with example?	Jun 2014	7