GLOBAL INSTITUTE OF ENGINEERING &TECHNOLOGY

(Approved by AICTE & Affiliated to JNTUH)
Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.
Phone: 8790101015 / 9959250205
e-mail: principal.giet.u6@gmail.com
JNTUH Code(U6) CIVIL - CSE - MECH - ECE - EEE - MBA - M.Tech. EAMCET Code- GLOB

Department of Computer Science and Engineering

Mrs. M Jhansi Lakshmi
M.Tech.,(Ph.D)
Associate Professor & Head

Lr.No: GIET/CSE/Brdg Cour/001/06/2014-15

Date 09/06/2014

To

The Principal
Global Institute of Engineering &Technology
Moinabad

Respected Madam,

Sub: Permission to Conduct Bridge Course for the Students of CSE-IV Year - reg.

*****

This is to get it to your kind notice that we Department of Computer Science and Engineering are interested to conduct a Bridge Course On **Oracle Database** for **Computer Science and Engineering** to the students of CSE-IV Year from 16/06/2014 to 21/06/2014, which is undertaken for students benefit as a value addition to curriculum of course.

These classes help students to strengthen their basics and bridge gap between Academics and Industry. These classes give them a brief idea of Oracle Database.

Kindly accord approval so as to make necessary arrangements for conducting the classes for students of Computer Science and Engineering –IV– Academic Year: 2014-15.

.

Thanking you.

9/6/2014
H.O.D

HEAD
Department of Computer Science & Engg.
Global Institute of Engineering & Technology
Chilkur (V)., Moinabad (M)., R.R. Dist.T.S.-501504.

Cc to :

Director – *for information*

Dy. Director- *for information*

Dean – *for information*

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE & Affiliated to JNTUH)

Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.

Phone: 08417-252233 / 253021

e-mail: principal.giet.u6@gmail.com

JNTUH Code(U6) CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB

Department of Computer Science and Engineering

Mrs. M Jhansi Lakshmi
M.Tech.,(Ph.D)
Associate Professor & Head

Lr.No: GIET/CSE/Brdg Cour/006/06/2014-15

Date 12/06/2014

CIRCULAR

All the students of CSE-IV Year are informed to express their interest by enrolling their name for the One week Bridge course on **"Oracle Database"** starting from 16/06/2014 to 21/06/2014 . The detailed syllabus for the course is attached for your information. Concerned mentors are instructed to submit the list of students enrolled within two days to the undersigned. For further information, you can contact the Course Coordinator.

12/6/2014

H.O.D
HEAD
Department of Computer Science & Engg.
Global Institute of Engineering & Technology
Chilkur (V)., Moinabad (M)., R.R. Dist.T.S.-501504.

Cc to :

Principal – *for information*

Mentor– *for information*

Notice board

File

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE & Affiliated to JNTUH)

Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.

Phone: 08417-252233 / 253021

e-mail: principal.giet.u6@gmail.com

JNTUH Code(U6) CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB

Department of Computer science and Engineering

COURSE SYLLABUS FOR "ORACLE DATABASE"

S.no	Topics to delivered	Duration Class work +Lab Practice (in hours)
1	Introduction to Oracle Database Grid Computing in Oracle Database	6
2	Infrastructure Grid Overview of Application Programming Languages (APIs)	6
3	Oracle Database Application Development: Overview of Oracle SQL	6
4	Overview of Transactions. Overview of Procedural Languages	6
5	Overview of ANSI, DB2, and SQL/DS Datatypes Overview of Procedural Languages	6
6	How PL/SQL Runs Control Statements	6

Coordinator

H.O.D

HEAD
Department of Computer Science & Engg.
Global Institute of Engineering & Technology
Chilkur (V), Moinabad (M), R.R. Dist. T.S.-501504

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY
Chilkur (V).
Moinabad (M).
R.R. Dist. (T.S.)
CC-U6

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY
(Approved by AICTE & Affiliated to JNTUH)
Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.
Phone: 08417-252233 / 253021
e-mail: principal.giet.u6@gmail.com
JNTUH Code(U6) CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB

Department of Computer Science and Engineering

LIST OF STUDENTS ENROLLED FOR BRIDGE COURSE

ACADEMIC YEAR: 2014-2015

S.No	Roll no	Name of the student	Year	Dept
1	11U61A0501	B KAVITHA	IV	CSE
2	11U61A0503	ELUKA ANJANEYULU	IV	CSE
3	11U61A0504	GADA SRAVANTHI	IV	CSE
4	11U61A0505	K MADHUSUDHAN	IV	CSE
5	11U61A0506	K SURENDRA NATH	IV	CSE
6	11U61A0507	K RAMAKRISHNA REDDY	IV	CSE
7	11U61A0508	KORNANA ROJA	IV	CSE
8	11U61A0510	M MANINDRA	IV	CSE
9	11U61A0511	MARA PRANAY KUMAR	IV	CSE
10	11U61A0512	MD MUBASHIR UDDIN	IV	CSE
11	11U61A0513	MOSTAFAFIJUR RAHMAN	IV	CSE
12	11U61A0514	P RAJASHEKAR REDDY	IV	CSE
13	11U61A0515	RICHA GIDRAUNIA	IV	CSE
14	11U61A0516	SYEDA MAIMUNA HASHMI	IV	CSE
15	10U61A0503	AHMED BIN ALI	IV	CSE
16	10U61A0508	C.HARISH REDDY	IV	CSE
17	08U61A0546	P SURESH	IV	CSE

COORDINATOR

H.O.D

HEAD
Department of Computer Science & Engg.
Global Institute of Engineering & Technology
Chilkur (V)., Moinabad (M)., R.R. Dist.T.S.-501504.

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY
Chilkur (V).
Moinabad (M).
R.R. Dist. (T.S.)
CC-U6

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE & Affiliated to JNTUH)

Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.

Phone: 08417-252233 / 253021

e-mail: principal.giet.u6@gmail.com

JNTUH Code(U6) CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB

Department of Computer Science Engineering

Bridge Course

On

Oracle Database

(16th June to 21th June 2014)

PROGRAMME SCHEDULE

	Forenoon (FN)		Afternoon(AN)
Day1	**INAUGURATION**	**Introduction to Oracle Database** Mr. Rajesh Kumar, Software Engineer, Wipro, Hyderabad.	**Grid Computing in Oracle Database**
Day2	**Infrastructure Grid** Mr. Rajesh Kumar, Software Engineer, Wipro, Hyderabad.		**Overview of Application Programming Languages (APIs)**
Day3	**Oracle Database Application Development:** Mr. Rajesh Kumar, Software Engineer, Wipro, Hyderabad..		**Overview of Oracle SQL**
Day4	**Overview of Transactions.** Mr. Salman Hussain , Team Leader, Tech mahindra, Hyderabad		**Commit and Undo Transactions**
Day5	**Overview of ANSI, DB2, and SQL/DS Datatypes** Mr. Salman Hussain , Team Leader, Tech mahindra, Hyderabad		**Overview of Procedural Languages**
Day6	**How PL/SQL Runs** Mr. Salman Hussain , Team Leader, Tech mahindra, Hyderabad		**Control Statements**

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY Chilkur (V), Moinabad (M), R.R. Dist. (T.S.) CC-U6

Coordinator
Mrs.HemaBindu
Associate Professor
Department of CSE

GLOBAL INSTITUTE OF ENGINEERING &TECHNOLOGY

(Approved by AICTE & Affiliated to JNTUH)
Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.
Phone: 8790101015 / 9959250205
e-mail: principal.giet.u6@gmail.com

JNTUH Code(U6) **CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB**

Department of Computer Science and Engineering

Bridge Course

On

Oracle Database

ATTENDANCE SHEET

S.No	Roll number	Name of the Participant	Programme	Year	ATTENDENCE											
					Day-1 (16/06/2014)		Day-2 (17/06/2014)		Day-3 (18/06/2014)		Day-4 (19/06/2014)		Day-5 (20/6/2014)		Day-6 (21/6/2014)	
					FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
1	11U61A0501	B KAVITHA	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	11U61A0503	ELUKA ANJANEYULU	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	11U61A0504	GADA SRAVANTHI	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗
4	11U61A0505	K MADHUSUDHAN	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	11U61A0506	K SURENDRA NATH	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	11U61A0507	KOMMIDI RAMAKRISHNA REDDY	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	11U61A0508	KORNANA ROJA	B.Tech	IV	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓
8	11U61A0510	M MANINDRA	B.Tech	IV	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✓	✓
9	11U61A0511	MARA PRANAY KUMAR	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	11U61A0512	MOHAMMED MUBASHIR UDDIN	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	11U61A0513	MOSTAFAFIJUR RAHMAN	B.Tech	IV	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓
12	11U61A0514	PULGAM RAJASHEKAR REDDY	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	11U61A0515	RICHA GIDRAUNIA	B.Tech	IV	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓
14	11U61A0516	SYEDA MAIMUNA HASHMI	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	10U61A0503	AHMED BIN ALI	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16	10U61A0508	C.HARISH REDDY	B.Tech	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17	08U61A0546	P SURESH	B.Tech	IV	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓

HEAD

HOD

Department of Computer Science & Engg.
Global Institute of Engineering & Technology
Chilkur (V),. Moinabad (M),. R.R. Dist.T.S.-501504

GLOBAL INSTITUTE OF ENGINEERING &TECHNOLOGY

(Approved by AICTE & Affiliated to JNTUH)

Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.
Phone: 8790101015 / 9959250205
e-mail: principal.giet.u6@gmail.com

JNTUH C: CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB

DEPARTMENT Of COMPUTER SCIENCE AND ENGINEEERING

ATTENDENCE PERCENTAGE

S. NO	H.T.No	NAME OF THE PARTICIPANT	Year	Dept	16/06/2014	17/6/2014	18/6/2014	19/6/2014	20/6/2014	21/6/2014	Total	Percentage
1	11U61A0501	B KAVITHA	IV	CSE	6	6	6	6	6	6	36	100
2	11U61A0503	ELUKA ANJANEYULU	IV	CSE	6	6	6	6	6	6	36	100
3	11U61A0504	GADA SRAVANTHI	IV	CSE	6	6	6	6	0	0	24	66.66666667
4	11U61A0505	K MADHUSUDHAN	IV	CSE	6	6	6	6	6	6	36	100
5	11U61A0506	K SURENDRA NATH	IV	CSE	6	6	6	6	6	6	36	100
6	11U61A0507	K RAMAKRISHNA REDDY	IV	CSE	6	6	6	6	6	6	36	100
7	11U61A0508	KORNANA ROJA	IV	CSE	6	0	6	6	6	6	30	83.33333333
8	11U61A0510	M MANINDRA	IV	CSE	6	6	6	6	0	0	24	66.66666667
9	11U61A0511	MARA PRANAY KUMAR	IV	CSE	6	6	6	6	6	6	36	100
10	11U61A0512	MD MUBASHIR UDDIN	IV	CSE	6	6	6	6	6	6	36	100
11	11U61A0513	MOSTAFAFIJUR RAHMAN	IV	CSE	6	0	6	6	6	6	30	83.33333333
12	11U61A0514	P RAJASHEKAR REDDY	IV	CSE	6	6	6	6	6	6	36	100
13	11U61A0515	RICHA GIDRAUNIA	IV	CSE	6	6	6	0	6	6	30	83.33333333
14	11U61A0516	SYEDA MAIMUNA HASHMI	IV	CSE	6	6	6	6	6	6	36	100
15	10U61A0503	AHMED BIN ALI	IV	CSE	6	6	6	6	6	6	36	100
16	10U61A0508	C.HARISH REDDY	IV	CSE	6	6	6	6	6	6	36	100
17	08U61A0546	P SURESH	IV	CSE	6	6	0	6	6	6	30	83.33333333

H.O.D

HEAD
Department of Computer Science & Engg.
Global Institute of Engineering & Technology
Chilkur (V), Moinabad (M), R.R. Dist. T.S.-501504.

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE & Affiliated to JNTUH)

Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.

Phone: 08417-252233 / 253021

e-mail: principal.giet.u6@gmail.com

JNTUH Code(U6) CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB

Department of Computer science and Engineering

Bridge Course
On
Oracle Database
(16th June - 21th June 2014)

FEEDBACK FORM

Please valuate your rating of the course by placing a tick in the appropriate box.
1. Poor 2. Satisfactory 3. Good 4. Very good 5. Excellent

Branch and Year: CSE & IV **Date:** 21-06-2014

ASPECTS	RATING				
	Excellent 5	Very good 4	Good 3	Satisfactory 2	Poor 1
Relevance of contents	✓				
Trainer was knowledgeable and skillful		✓			
Quality of input provided	✓				
Quality of presentations		✓			
Adherence to the time schedule	✓				
Opportunity given to participant to clear doubts	✓				
Identify ways to build on current skills and knowledge		✓			
Overall learning experience		✓			

How has the course enhanced your skills or understanding of this topic?

Yes, Enhanced Alot.

Specify problems faced by you during the course?

NO.

Any Other Comments:

NO.

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY Chilkur (V), Moinabad (M), R.R. Dist. (T.S.) CC-U6

GLOBAL INSTITUTE OF ENGINEERING & TECHNOLOGY
(Approved by AICTE & Affiliated to JNTUH)
Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. TS.
Phone: 08417-252233 / 253021
e-mail: principal.giet.u6@gmail.com
JNTUH Code(U6) CIVIL – CSE – MECH – ECE – EEE – MBA – M.Tech. EAMCET Code– GLOB

Department of Computer Science and Engineering

Bridge Course

On

Oracle Database

From

16-06-2014 to 21-06-2014

CSE-IV

ACADEMIC YEAR-2014-15

A Bridge course on 'Oracle Database' was organized by the Department of Computer Science and Engineering. A One Week certificate course was held in the Room No 65 from 16th June -21th June 2014 and its objective was to further enhance and strengthen the technical skills of the students. The course was attended by 17 students (A.Y. 2014-15).

About Bridge Course: The Bridge Course is aimed to act as a buffer for the students, with an objective to provide adequate time for the transition to hard-core engineering courses. During this interaction of bridge course week with the faculty and their classmates, the students will be equipped with the knowledge and the confidence needed to take on bigger challenges as future engineers of this country.

Objectives:

- To provide adequate time for the transition to hard-core engineering courses.
- To Cover the Gap between Academics and Industry.
- Focus on fostering a strong sense of ethical judgment and moral fortitude.
- Applications based self-learning and intermingling of a large cross section of students from vastly varying backgrounds.
- The students will be equipped with the knowledge and the confidence needed to take on bigger challenges.
- Nurture a deeper understanding of the local and global world and our place in at as concerned citizens of the world.
- Interactive and Active Learning by Doing have been weaved into the Bridge Course.

HEAD
Department of Computer Science & Engg.
Institute of Engineering & Technology
(V), Moinabad (M), R.R. Dist.T.S.

DAY 1: Introduction to Oracle Database

An Oracle database is a collection of data treated as a unit. The purpose of a database is to store and retrieve related information. A database server is the key to solving theproblems of information management. In general, a server reliably manages a largeamount of data in a multiuser environment so that many users can concurrently accessthe same data. All this is accomplished while delivering high performance. A databaseserver also prevents unauthorized access and provides efficient solutions for failure recovery.Oracle Database is the first database designed for enterprise grid computing, the mostflexible and cost effective way to manage information and applications. Enterprisegrid computing creates large pools of industry-standard, modular storage and servers.With this architecture, each new system can be rapidly provisioned from the pool ofcomponents. There is no need for peak workloads, because capacity can be easilyadded or reallocated from the resource pools as needed.The database has **logical structures** and **physical structures**. Because the physical andlogical structures are separate, the physical storage of data can be managed withoutaffecting the access to logical storage structures

Grid Computing in Oracle Database

On the path toward this grand vision of grid computing, companies need realsolutions to support their incremental moves toward a more flexible and moreproductive IT architecture. The Oracle Database 10*g* family of software productsimplements much of the core grid technology to get companies started. And Oracledelivers this grid computing functionality in the context of holistic enterprisearchitecture, providing a robust security infrastructure, centralized management,intuitive, powerful development tools, and universal access. Oracle Database includes:

- Oracle Database
- Oracle Application Server
- Oracle Enterprise Manager
- Oracle Collaboration Suite

DAY 2: Infrastructure Grid

- **Server Virtualization.** Oracle Real Application Clusters (RAC) enable a singledatabase to run across multiple clustered nodes in a grid, pooling the processing resources of several standard machines. Oracle is uniquely flexible in its ability to provision workload across machines because it is the only database technology that does not require data to be partitioned and distributed along with the work. Oracle Release 2 software includes enhancements for balancing connections across RAC instances, based on policies.
- **Storage Virtualization.** The Oracle Automatic Storage Management (ASM) featureof Oracle Database 10*g* provides a virtualization layer between the database andstorage so that multiple disks can be treated as a single disk group and disks can be dynamically added or removed while keeping databases online. Existing data will automatically be spread across available disks for performance and utilization optimization. In Oracle 10*g* Release 2, ASM supports multiple databases, which could be at different software version levels, accessing the same storage pool.

■ **Grid Management.** Because grid computing pools together multiple servers and disks and allocates them to multiple purposes, it becomes more important that individual resources are largely self-managing and that other management functions are centralized.

The Grid Control feature of Oracle Enterprise Manager 10*g* provides a single console to manage multiple systems together as a logical group. Grid Control manages provisioning of nodes in the grid with the appropriate full stack of software and enables configurations and security settings to be maintained centrally for groups of systems.

Overview of Application Programming Languages (APIs)

Oracle Database developers have a choice of languages for developing applications—C, C++, Java, COBOL, PL/SQL, and Visual Basic. The entire functionality of the database is available in all the languages. All language-specific standards are supported. Developers can choose the languages in which they are most proficient or one that is most suitable for a specific task.

For example an application might use Java on the server side to create dynamic Web pages, PL/SQL to implement stored procedures in the database, and C++ to implement computationally intensive logic in the middle tier. The Oracle Call Interface (OCI) is a C data access API for Oracle Database. It supports the entire Oracle Database feature set. Many data access APIs, such as OCCI, ODBC, Oracle JDBC Type2 drivers, and so on, are built on top of OCI. OCI provides powerful functionality to build high performance, secure, scalable, and fault-tolerant applications. OCI is also used within the server for the data access needs of database kernel components, along with distributed database access. OCI lets an application developer use C function calls to access the Oracle data server and control all phases of business logic execution. OCI is exposed as a library of standard database access and retrieval functions in the form of a dynamic runtime library that can be linked in by the application. The Oracle C++ Call Interface (OCCI) is a C++ API that lets you use the object-oriented features, native classes, and methods of the C++ programing language to access the Oracle database.

DAY 3: Oracle Database Application Development:

SQL and PL/SQL form the core of Oracle's application development stack. Not onlydo most enterprise back-ends run SQL, but Web applications accessing databases do so using SQL (wrappered by Java classes as JDBC), Enterprise Application Integration

applications generate XML from SQL queries, and content-repositories are built on top of SQL tables. It is a simple, widely understood, unified data model. It is used standalone in many applications, but it is also invoked directly from Java (JDBC),

Oracle Call Interface (OCI), Oracle C++ Call Interface (OCCI), or XSU (XML SQLUtility). Stored packages, procedures, and triggers can all be written in PL/SQL or in

Java.

Overview of Oracle SQL

SQL (pronounced SEQUEL) is the programming language that defines and manipulates the database. SQL databases are relational databases, which means that data is stored in a set of simple relations.

SQL Statements

All operations on the information in an Oracle database are performed using SQL statements. A SQL statement is a string of SQL text. A statement must be the equivalent of a complete SQL sentence, as in:

SELECT last_name, department_id FROM employees;

SQL statements are divided into the following categories:

Data Definition Language (DDL) Statements These statements create, alter, maintain, and drop schema objects. DDL statements also include statements that permit a user to grant other users the privileges to access the database and specific objects within the database.

Data Manipulation Language (DML) Statements These statements manipulate data. For example, querying, inserting, updating, and deleting rows of a table are all DML operations. The most common SQL statement is the SELECT statement, which retrieves data from the database. Locking a table or view and examining the execution plan of a SQL statement are also DML operations.

Transaction Control Statements These statements manage the changes made by DML statements. They enable a user to group changes into logical transactions. Examples include COMMIT, ROLLBACK, and SAVEPOINT.

Session Control Statements These statements let a user control the properties of the current session, including enabling and disabling roles and changing language settings. The two session control statements are ALTER SESSION and SET ROLE.

System Control Statements These statements change the properties of the Oracle database instance. The only system control statement is ALTER SYSTEM. It lets users change settings, such as the minimum number of shared servers, kill a session, and
perform other tasks.

Embedded SQL Statements These statements incorporate DDL, DML, and transaction control statements in a procedural language program, such as those used with the Oracle precompilers. Examples include OPEN, CLOSE, FETCH, and EXECUTE.

DAY 4:Overview of Transactions.

According to the ANSI/ISO SQL standard, with which Oracle is compatible, a transaction begins with the user's first executable SQL statement. A transaction ends when it is explicitly committed or rolled back by that user. Transactions let users guarantee consistent changes to data, as long as the SQL statements within a transaction are grouped logically. A transaction should consist of all of the necessary parts for one logical unit of work—no more and no less. Data in all referenced tables are in a consistent state before the transaction begins and after it ends. Transactions should consist of only the SQL statements that make one consistent
change to the data. Consider a banking database. When a bank customer transfers money from a savings account to a checking account, the transaction can consist of three separate operations: decrease the savings account, increase the checking account, and record the transaction in the transaction journal.

Commit and Undo Transactions

The changes made by the SQL statements that constitute a transaction can be either committed or rolled back. After a transaction is committed or rolled back, the next transaction begins with the next SQL statement. **To commit** a transaction makes permanent the changes resulting from all DML statements in the transaction. The changes made by the SQL statements of a transaction become visible to any other user's statements whose execution starts after he transaction is committed. **To undo** a transaction retracts any of the changes resulting from the SQL statements in the transaction. After a transaction is rolled back, the affected data is left unchanged,
as if the SQL statements in the transaction were never run.

Savepoints

Savepoints divide a long transaction with many SQL statements into smaller parts. With savepoints, you can arbitrarily mark your work at any point within a long transaction. This gives you the option of later rolling back all work performed from the
current point in the transaction to a declared savepoint within the transaction.

DAY 5 Overview of ANSI, DB2, and SQL/DS Datatypes

SQL statements that create tables and clusters can also use ANSI datatypes and datatypes from IBM's products SQL/DS and DB2. Oracle recognizes the ANSI or IBM datatype name that differs from the Oracle datatype name, records it as the name of the datatype of the column, and then stores the column's data in an Oracle datatype based on the conversions.

Overview of XML Datatypes

Oracle provides the XMLType datatype to handle XML data.

XMLType Datatype

XMLType can be used like any other user-defined type. XMLType can be used as the datatype of columns in tables and views. Variables of XMLType can be used in PL/SQL stored procedures as parameters, return values, and so on. You can also use XMLType in PL/SQL, SQL and Java, and through JDBC and OCI.

A number of useful functions that operate on XML content have been provided. Many of these are provided both as SQL functions and as member functions of XMLType. For example, function extract extracts a specific node(s) from an XMLType instance. You can use XMLType in SQL queries in the same way as any other user-defined datatypes in the system.

Overview of URI Datatypes

A URI, or uniform resource identifier, is a generalized kind of URL. Like a URL, it can reference any document, and can reference a specific part of a document. It is more general than a URL because it has a powerful mechanism for specifying the relevant part of the document. By using UriType, you can do the following:

- Create table columns that point to data inside or outside the database.
- Query the database columns using functions provided by UriType.

Overview of Data Conversion

In some cases, Oracle supplies data of one datatype where it expects data of a different datatype. This is allowed when Oracle can automatically convert the data to the expected datatype.

Overview of Procedural Languages

In Oracle, SQL, PL/SQL, XML, and Java all interoperate seamlessly in a way that allows developers to mix-and-match the most relevant features of each language. SQL and PL/SQL form the core of Oracle's application development stack. Not only do most enterprise back-ends run SQL, but Web applications accessing databases do so using SQL (wrappered by Java classes as JDBC), Enterprise Application Integration applications generate XML from SQL queries, and content-repositories are built on top of SQL tables. It is a simple, widely understood, unified data model. It is used standalone in many applications, but it is also invoked indirectly from Java (JDBC),

Oracle Call Interface (dynamic SQL), and XML (XML SQL Utility).

This section includes the following:

- Overview of PL/SQL
- Overview of Java

Overview of PL/SQL

PL/SQL is Oracle's procedural language extension to SQL. It provides a server-side, stored procedural language that is easy-to-use, seamless with SQL, robust, portable, and secure. The PL/SQL compiler and interpreter are embedded in Oracle Developer,
providing developers with a consistent and leveraged development model on both the client and the server side. In addition, PL/SQL stored procedures can be called from a number of Oracle clients, such as Pro*C or Oracle Call Interface, and from Oracle Reports and Oracle Forms.

DAY 6:How PL/SQL Runs

PL/SQL can run with either interpreted execution or native execution. **Interpreted Execution** In versions earlier than Oracle9*i*, PL/SQL source code was always compiled into a so-called bytecode representation, which is run by a portable virtual
computer implemented as part of the Oracle database server, and also in products such as Oracle Forms. Starting with Oracle9*i*, you can choose between native execution and interpreted execution
Native Execution For best performance on computationally intensive program units, compile the source code of PL/SQL program units stored in the database directly to object code for the given platform. (This object code is linked into the Oracle database
server.)
The **PL/SQL engine** is the tool you use to define, compile, and run PL/SQL program units. This engine is a special component of many Oracle products, including the Oracle database server.
While many Oracle products have PL/SQL components, this section specifically covers the program units that can be stored in an Oracle database and processed using the Oracle database server PL/SQL engine. The PL/SQL capabilities of each Oracle
tool are described in the appropriate tool's documentation.

Data Definition Language Statements

Data definition language (DDL) statements define, alter the structure of, and drop schema objects. DDL statements enable you to:

- Create, alter, and drop schema objects and other database structures, including the database itself and database users (CREATE, ALTER, DROP)
- Change the names of schema objects (RENAME)
- Delete all the data in schema objects without removing the objects' structure
(TRUNCATE)
- Grant and revoke privileges and roles (GRANT, REVOKE)
- Turn auditing options on and off (AUDIT, NOAUDIT)
- Add a comment to the data dictionary (COMMENT)

DDL statements implicitly commit the preceding and start a new transaction. Some examples of DDL statements are:

```
CREATE TABLE plants
(COMMON_NAME VARCHAR2 (15), LATIN_NAME VARCHAR2 (40));
DROP TABLE plants;
GRANT SELECT ON employees TO scott;
REVOKE DELETE ON employees FROM scott;
```

Transaction Control Statements

Transaction control statements manage the changes made by DML statements and group DML statements into transactions. They enable you to: