KG REDDY
College of Engineering
& Technology

Department of Electronics and Communication Engineering

Report of

Value added course on

"ORACLE DATABASE PROGRAMMING"

From 12/08/2017 to 16/08/2017

Organized

In collaboration with IETE

by

Mr. Randeep, Naresh

I Technology,

Hyderabad

COORDINATOR **HOD** **PRINCIPAL**

HEAD
DEPT. OF ELECTRONICS & COMMUNICATIONS ENGINEERING
K.G. REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
CHILKUR (V), MOINABAD, R.R. DIST.501 504.

Principal
KG Reddy College of Engineering & Technology
Chilkur (V), Moinabad (M).
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SUMMARY REPORT OF ORACLE DATABASE PROGRAMMING

About Course

The value added course on Oracle database programming is concluded its work successfully by department of Electronics and communication engineering (ECE) in KG ready college of Engineering and technology (KGRCET), Hyderabad, Telangana. This course is a forum to bring together students to discuss innovative ideas and diverse topics of this course on next generation of information technologies. Department has taken a new step for students to improve the quality of study through this course and become most wide scale , extensive, spectacular event in computer science engineering. The six days course was held in two locations of the department (a) Department E-learning room for theory class and (b) Department laboratory for practical class.

Oracle Database Programming certifications were designed to fit within the curricula of high-school and college education programs to expose students with no prior IT background to core Oracle Database Programming technologies and info-tech job roles. Each MTA certificate requires it to pass one exam that will validate fundamental skills in a mission-critical IT domain like data management, software development, computer networking or cyber security.

This course is absolutely practical oriented course which is helped to student for making their carrier through Oracle database programming in any industry. The students of 3rd year 1st semester have been benefited in many ways from this course. More than 80 students have joined in this course as their own interest and completed this course. The trainer taught to students very nice with real time example and sharing his knowledge to develop technical skill in industry.

Scope of the Course

The role of MTADBF is to be emphasized in computer science and engineering, to enhance and motivate the new technology for wide range of applications. As a web developer, it is an expert in using the dynamic programming tools and languages that fuel the web. As a Windows client developer, knowing how to optimize Windows code and track bugs is a given.

The course contains both theory and practical for applications as well as design methods based on Oracle database programming related topics. The list of topics spans all the areas of the Oracle database programming and engineering domains. It covered significant recent developments in the field, both of a foundational and applicable character of this course. An important feature of this course is very useful in service carrier. The selected topics of this course helped to make project work. This permits also a rapid and broad dissemination of project and research work.

Objectives of the course

The objective of the course is to bring together experts from academic institute and training institute for sharing of knowledge, expertise and experience in emerging trends related to the computer science and engineering topics. It might work independently or be part of a team that builds and integrates interactive web sites, applications, and services for

both internal and public sites. The role is to make it work, which means developing web applications and testing them on various browsers, enhancing and modifying them as necessary to ensure the best experience for the user. As a web developer, it might also architect websites, design data-driven applications, and find efficient client server solutions. It must have an in-depth understanding of the software development life cycle and be able to communicate project status, issues, and resolutions. The course covered all topics of MTADBF system as well as engineering system related to computer science engineering. Broad and individual topics are mentioned in syllabus but not limited. Specific tracks of the course had been taken for different session of the day.

As a result many keynote, tutorial and technical sessions have been prepared in accordance with course scope to discuss the challenges, opportunities and problems of application of computer science engineering in various fields.

OUTPUT

This course was not only shared the knowledge among students but also tied up with expert for upcoming course. Oracle Database Programming IT Certifications provide objective validation of the ability to perform critical IT functions successfully for worldwide IT professionals, developers, and information workers. Oracle Database Programming certifications represent a rich and varied spectrum of knowledge, job roles, and responsibilities. Further, earning a specific certification provides objective validation of the candidate's ability to perform critical IT functions successfully. Embraced by industry professionals worldwide, Oracle Database Programming certification remains one of the most effective ways to help reach long-term career goals.

The main outputs are mentioned below:

- The expert shared his knowledge among students.
- Students learned from this course and tried to use the techniques for their project as well as research work.
- Students interact with expert to gain their additional knowledge for future research work.
- Students found new ideas, concept, knowledge on technology, different application of methodologies from different session of course.
- Department tried to do their collaborative research work on this course with university as well as industries.
- It was created different domains of research field from this course for possible topic of computer science engineering.
- It helped to make industrial project.
- It helped to student for campus recruitment as well as datbase development

Summary of Participants

(a) Number of students attended this course: 43
(b) Number of students attended written exam: 43
(c) Number of students qualified the exam: 43

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Day-1

Time: 09:00 AM to 11:00 AM

The first day of value added course started with Welcoming and Opening Ceremony at the KGRCET conference Hall. The following dignitaries were representatives of the certificate course who were addressed and pointed out the importance on course with short welcoming speeches.

Welcome addressed by Dr. M.N.Narsaiah, HOD, ECE, KGRCET
Importance of this course by expert trainer Mr. Mruthyunjaya Menda, TASK
Interaction with 3rd year 1st semester students

Time: 11.00AM to 4:15 AM

Oracle database programming is designed to provide students with an explanation and understanding of fundamental security concepts. This **fee based** course provides you with interactive videos that meet the needs of multiple styles of learning from auditory to visual and it includes a pre test and post test that accurately identifies your skill gap. The course is supplemented by a Oracle Database Programming Official Academic Course textbook and a practice and exam voucher is included.

Oracle database programming is a entry-level credential from Oracle Database Programming that validates the foundational knowledge needed to take the first step toward building a successful career in technology. The Oracle database programming certification programs cover the baseline knowledge of building and managing Oracle Database Programming

Windows Servers, Windows-based network operating systems, Active Directory, account management, and system recovery tools.

Database is a collection of related data and data is a collection of facts and figures that can be processed to produce information. Mostly data represents recordable facts. Data aids in producing information, which is based on facts. For example, if we have data about marks obtained by all students, we can then conclude about toppers and average marks. A **database management system** stores data in such a way that it becomes easier to retrieve, manipulate, and produce information.

Traditionally, data was organized in file formats. DBMS was a new concept then, and all the research was done to make it overcome the deficiencies in traditional style of data management. A modern DBMS has the following characteristics: Real-world entity: A modern DBMS is more realistic and uses real-world entities to design its architecture. It uses the behavior and attributes too. For example, a school database may use students as an entity and their age as an attribute. Relation-based tables: DBMS allows entities and relations among them to form tables. A user can understand the architecture of a database just by looking at the table names. Isolation of data and application: A database system is entirely different than its data. A database is an active entity, whereas data is said to be passive, on which the database works and organizes. DBMS also stores metadata, which is data about data, to ease its own process. Less redundancy: DBMS follows the rules of normalization, which splits a relation when any of its attributes is having redundancy in values. Normalization is a mathematically rich and scientific process that reduces data redundancy. Consistency: Consistency is a state where every relation in a database remains consistent. There exist methods and techniques, which can detect attempt of leaving database in inconsistent state. A DBMS can provide greater consistency as compared to earlier forms of data storing applications like file-processing systems.

Day-2

Query Language: DBMS is equipped with query language, which makes it more efficient to retrieve and manipulate data. A user can apply as many and as different filtering options as required to retrieve a set of data. Traditionally it was not possible where file-processing system was used. ACID Properties: DBMS follows the concepts of Atomicity, Consistency, Isolation, and Durability (normally shortened as ACID). These concepts are applied on transactions, which manipulate data in a database. ACID properties help the database stay healthy in multi-transactional environments and in case of failure. Multiuser and Concurrent Access: DBMS supports multi-user environment and allows them to access and manipulate data in parallel. Though there are restrictions on transactions when users attempt to handle the same data item, but users are always unaware of them. Multiple views: DBMS offers multiple views for different users.

A user who is in the Sales department will have a different view of database than a person working in the Production department. This feature enables the users to have a concentrate view of the database according to their requirements. Security: Features like multiple views offer security to some extent where users are unable to access data of other users and departments. DBMS offers methods to impose constraints while entering data into the database and retrieving the same at a later stage. DBMS offers many different levels of security features, which enables multiple users to have different views with different features. For example, a user in the Sales department cannot see the data that belongs to the Purchase department. Additionally, it can also be managed how much data of the Sales department should be displayed to the user. Since a DBMS is not saved on the disk as traditional file systems, it is very hard for miscreants to break.

A typical DBMS has users with different rights and permissions who use it for different purposes. Some users retrieve data and some back it up. The users of a DBMS can be broadly categorized as follows:

Administrators: Administrators maintain the DBMS and are responsible for administrating the database. They are responsible to look after its usage and by whom it should be used. They create access profiles for users and apply limitations to maintain isolation and force security. Administrators also look after DBMS resources like system license, required tools, and other software and hardware related maintenance. Designers: Designers are the group of people who actually work on the designing part of the database. They keep a close watch on what data should be kept and in what format. They identify and design the whole set of entities, relations, constraints, and views. End Users: End users are those who actually reap the benefits of having a DBMS. End users can range from simple viewers who pay attention to the logs or market rates to sophisticated users such as business analysts.

Day-3

A 3-tier architecture separates its tiers from each other based on the complexity of the users and how they use the data present in the database. It is the most widely used architecture to design a DBMS.

Database (Data) Tier: At this tier, the database resides along with its query processing languages. We also have the relations that define the data and their constraints at this level.

Application (Middle) Tier: At this tier reside the application server and the programs that access the database. For a user, this application tier presents an abstracted view of the database. End-users are unaware of any existence of the database beyond the application. At the other end, the database tier is not aware of any other user beyond the application tier. Hence, the application layer sits in the middle and acts as a mediator between the end-user and the database. User (Presentation) Tier: End-users operate on this tier and they know nothing about any existence of the database beyond this layer. At this layer, multiple views of the database can be provided by the application. All views are generated by applications that reside in the application tier. Multiple-tier database architecture is highly modifiable, as almost all its components are independent and can be changed independently.

Entity-Relationship (ER) Model is based on the notion of real-world entities and relationships among them. While formulating real-world scenario into the database model, the ER Model creates entity set, relationship set, general attributes, and constraints. ER Model is best used for the conceptual design of a database. ER Model is based on: Entities and their attributes. Relationships among entities.

A database schema is the skeleton structure that represents the logical view of the entire database. It defines how the data is organized and how the relations among them are associated. It formulates all the constraints that are to be applied on the data. A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database, which can be depicted by means of schema diagrams. It's the database designers who design the schema to help programmers understand the database and make it useful.

Day-4

Physical Database Schema: This schema pertains to the actual storage of data and its form of storage like files, indices, etc. It defines how the data will be stored in a secondary storage. Logical Database Schema: This schema defines all the logical constraints that need to be applied on the data stored. It defines tables, views, and integrity constraints.

A database instance is a state of operational database with data at any given time. It contains a snapshot of the database. Database instances tend to change with time. A DBMS ensures that its every instance (state) is in a valid state, by diligently following all the validations, constraints, and conditions that the database designers have imposed. Logical data is data about database, that is, it stores information about how data is managed inside. For example, a table (relation) stored in the database and all its constraints applied on that relation.

Logical data independence is a kind of mechanism, which liberalizes itself from actual data stored on the disk. If we do some changes on table format, it should not change the data residing on the disk. All the schemas are logical, and the actual data is stored in bit format on the disk. Physical data independence is the power to change the physical data without impacting the schema or logical data. For example, in case we want to change or upgrade the storage system itself — suppose we want to replace hard-disks with SSD — it should not have any impact on the logical data or schemas.

Types of Attributes Simple attribute: Simple attributes are atomic values, which cannot be divided further. For example, a student's phone number is an atomic value of 10 digits. Composite attribute: Composite attributes are made of more than one simple attribute. For example, a student's complete name may have first_name and last_name. Derived attribute:

Derived attributes are the attributes that do not exist in the physical database, but their values are derived from other attributes present in the database. For example, average_salary in a department should not be saved directly in the database, instead it can be derived. For another example, age can be derived from data_of_birth.

Single-value attribute: Single-value attributes contain single value. For example: Social_Security_Number. Multi-value attribute: Multi-value attributes may contain more than one values. For example, a person can have more than one phone number, email_address, etc.

Day-5

Specialization is the opposite of generalization. In specialization, a group of entities is divided into sub-groups based on their characteristics. Take a group 'Person' for example. A person has name, date of birth, gender, etc. These properties are common in all persons, human beings. But in a company, persons can be identified as employee, employer, customer, or vendor, based on what role they play in the company. Inheritance is an important feature of Generalization and Specialization. It allows lower-level entities to inherit the attributes of higher-level entities.

Tables: In relational data model, relations are saved in the format of Tables. This format stores the relation among entities. A table has rows and columns, where rows represent records and columns represent the attributes.

Tuple: A single row of a table, which contains a single record for that relation is called a tuple. Relation instance: A finite set of tuples in the relational database system represents relation instance. Relation instances do not have duplicate tuples.

Relation schema: A relation schema describes the relation name (table name), attributes, and their names. Relation key: Each row has one or more attributes, known as relation key, which can identify the row in the relation (table) uniquely. Attribute domain: Every attribute has some predefined value scope, known as attribute domain.

Every relation has some conditions that must hold for it to be a valid relation. These conditions are called Relational Integrity Constraints. There are three main integrity constraints: Key constraints Domain constraints Referential integrity constraints Key Constraints There must be at least one minimal subset of attributes in the relation, which can identify a tuple uniquely. This minimal subset of attributes is called key for that relation. If there are more than one such minimal subsets, these are called candidate keys.

Domain Constraints Attributes have specific values in real-world scenario. For example, age can only be a positive integer. The same constraints have been tried to employ on the attributes of a relation. Every attribute is bound to have a specific range of values. For example, age cannot be less than zero and telephone numbers cannot contain a digit outside 0-9.

Relational algebra is a procedural query language, which takes instances of relations as input and yields instances of relations as output. It uses operators to perform queries. An operator can be either unary or binary. They accept relations as their input and yield relations as their output. Relational algebra is performed recursively on a relation and intermediate results are also considered relations. The fundamental operations of relational algebra are as follows: Select, Project, Union, Set different, Cartesian product, Rename

SQL is equipped with data manipulation language (DML). DML modifies the database instance by inserting, updating, and deleting its data. DML is responsible for all forms data modification in a database. SQL contains the following set of commands in its DML section: SELECT/FROM/WHERE, INSERT INTO/VALUES, UPDATE/SET/WHERE, DELETE FROM/WHERE. These basic constructs allow database programmers and users to enter data and information into the database and retrieve efficiently using a number of filter options.

If a database design is not perfect, it may contain anomalies, which are like a bad dream for any database administrator. Managing a database with anomalies is next to impossible. Update anomalies: If data items are scattered and are not linked to each other properly, then it could lead to strange situations. For example, when we try to update one data item having its copies scattered over several places, a few instances get updated properly while a few others are left with old values. Such instances leave the database in an inconsistent state. Deletion anomalies: We tried to delete a record, but parts of it were left undeleted because of unawareness, the data is also saved somewhere else. Insert anomalies: We tried to insert data in a record that does not exist at all. Normalization is a method to remove all these anomalies and bring the database to a consistent state.

Join is a combination of a Cartesian product followed by a selection process. A Join operation pairs two tuples from different relations, if and only if a given join condition is satisfied.

RAID stands for Redundant Array of Independent Disks, which is a technology to connect multiple secondary storage devices and use them as a single storage media. RAID consists of an array of disks in which multiple disks are connected together to achieve different goals. RAID levels define the use of disk arrays.

Indexing is defined based on its indexing attributes. Indexing can be of the following types: Primary Index: Primary index is defined on an ordered data file. The data file is ordered on a key field. The key field is generally the primary key of the relation. Secondary Index: Secondary index may be generated from a field which is a candidate key and has a unique value in every record, or a non-key with duplicate values. Clustering Index: Clustering index is defined on an ordered data file. The data file is ordered on a non-key field. Ordered Indexing is of two types: Dense Index, Sparse Index.

A B+ tree is a balanced binary search tree that follows a multi-level index format. The leaf nodes of a B+ tree denote actual data pointers. B+ tree ensures that all leaf nodes remain at the same height, thus balanced. Additionally, the leaf nodes are linked using a link list; therefore, a B + tree can support random access as well as sequential access.

Bucket: A hash file stores data in bucket format. Bucket is considered a unit of storage. A bucket typically stores one complete disk block, which in turn can store one or more records. Hash Function: A hash function, h, is a mapping function that maps all the set of search-keys K to the address where actual records are placed. It is a function from search keys to bucket addresses.

The problem with static hashing is that it does not expand or shrink dynamically as the size of the database grows or shrinks. Dynamic hashing provides a mechanism in which data buckets are added and removed dynamically and on demand. Dynamic hashing is also known as extended hashing.

A transaction is a very small unit of a program and it may contain several low level tasks. A transaction in a database system must maintain Atomicity, Consistency, Isolation, and Durability — commonly known as ACID properties — in order to ensure accuracy, completeness, and data integrity. Atomicity: This property states that a transaction must be treated as an atomic unit, that is, either all of its operations are executed or none. There must be no state in a database where a transaction is left partially completed. States should be defined either before the execution of the transaction or after the execution/abortion/failure of the transaction. Consistency: The database must remain in a consistent state after any transaction. No transaction should have any adverse effect on the data residing in the database. If the database was in a consistent state before the execution of a transaction, it must remain consistent after the execution of the transaction as well. Durability: The database should be durable enough to hold all its latest updates even if the system fails or restarts. If a transaction updates a chunk of data in a database and commits, then the database will hold the modified data. If a transaction commits but the system fails before the data could be written on to the disk, then that data will be updated once the system springs back into action. Isolation: In a database system where more than one transaction are being executed simultaneously and in parallel, the property of isolation states that all the transactions will be carried out and executed as if it is the only transaction in the system. No transaction will affect the existence of any other transaction.

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Ref No: KGRCET/ECE/2017-18

CIRCULAR **Date 10 /8/2017**

All the students of III-B.Tech I semester ECE are here by instructed to enroll for the value added course on "**ORACLE DATABASE PROGRAMMING**", which is going to conduct from 12/08/2017 to 16/08/2017. Interested students are instructed to meet co ordinator

HOD

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Department of Electronics and Communication Engineering
value added course oracle database

S.NO	DAY 1- 12/08/2017	TIME
1	Overview of Workshop	9:30-10:30 Am
2	Introduction to Oracle	10:30-12:00 Pm
3	BREAK	12:00 -1:30 Pm
4	Introduction to ORACLE software	1:30Pm-3:00 Pm
5	Introduction to Schematic entry to Database	3:00Pm-4:15Pm
	DAY 2 -13/08/2017	
6	Introduction to different javafundamentals	9:30 AM- 11:30 AM
7	Schematic SQL in detail	11:30Am -1:00Pm
	LUNCH BREAK	1:00 Pm -2:30Pm
8	TESTING ENDORSE	2:30 -3:15 Pm
9	Importing standard libraries	3:15-3:45 Pm
10	Matching schematic symbols to footprints	3:45 Pm-4:15pm
	DAY 3- 14/08/2017	**TIME**
11	Generating Net list from schematic	9:30-11:00Am
12	Annotation schemes	11:00-12:30 pm
	LUNCH BREAK	12:30 -1:30 Pm
13	Matching schematic symbols to footprints	1:30pm-3:00pm
14	Tools for creating components	3:00-4:15pm

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	DAY 4- 15/08/2017	TIME
15	Introduction to F	9:30-10:00Am
16	Component packages.	10:00-12:30 pm
	LUNCH BREAK	12:30 -1:30 Pm
17	Library footprints, Importing footprints.Importing Net list.	1:30pm-3:00pm
18	Layers of design	3:00-4:15pm
	DAY 5- 16/08/2017	**TIME**
19	**Introduction to file generation**	9:30-10:00Am
20	Finalizing the design	10:00-12:30 pm
	LUNCH BREAK	12:30 -1:30 Pm
21	Evaluation	1:30pm-3:00pm
22	Validation	3:00-4:15pm

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Attendance Sheet for value added course on Oracle database programming

Class:III-I ECE **Date:12/08/2017-16/08/2017**

Sl.No.	Roll No	Name of the Student	Signature				
			12	13	14	15	16
1	15QM1A0401	A DIKSHITH RAO					
2	15QM1A0405	AVUSULA MOUNIKA					
3	15QM1A0406	BACHU VENKATA SAI DIVYA					
4	15QM1A0407	BAJJURI BABY					
5	15QM1A0408	BANDA NIKITHA REDDY					
6	15QM1A0409	BUDDE RAVALI					
7	15QM1A0410	CHADIVAE BHAVANA					
8	15QM1A0412	CHINTAKINDI SRIHARSHAN REDDY					
9	15QM1A0413	CHINTHAKINDI PUSHPALEELA					
10	15QM1A0414	D ABHILASH GOUD					
11	15QM1A0415	DONTHIBOINA DEEPSAGAR REDDY					
12	15QM1A0416	ESAMPALLY PRASADGOUD					
13	15QM1A0417	G NAVEEN KUMAR REDDY					
14	15QM1A0418	GADE MARY SUSHMA					
15	15QM1A0420	GAVARA NAGA LAKSHMI PRIYANKA					
16	15QM1A0421	GILLALA PRAVEEN KUMAR					
17	15QM1A0422	GOTTAPU GEETHA SPHOORTHI					
18	15QM1A0423	GUDIPUDI SOWJANYA					
19	15QM1A0424	GUNTUR HARIKA					
20	15QM1A0425	JILLELA CHANDRA SHEKAR REDDY					
21	15QM1A0426	JYESTA POOJITHA					
22	15QM1A0427	JYOTHIRMAY BARUA					
23	15QM1A0428	K NANDU KUMAR REDDY					
24	15QM1A0429	K VINAY CHARY					
25	15QM1A0430	KAMMARI SHRAVANI					
26	15QM1A0431	KANCHARLA SUBBA REDDY					
27	15QM1A0432	KODITHYALA KARTHIK					
28	15QM1A0433	KOMMIDI VISHNU VARDHAN REDDY					
29	15QM1A0434	KOMMINENI HARINDRANATH					
30	15QM1A0435	KONDA AISHWARYA					
31	15QM1A0436	KONDOJU ROJA					
32	15QM1A0437	KONDREDDY JYOTHI					
33	15QM1A0438	KUCHURU SRAVANI					
34	15QM1A0439	LAKKIREDDY NAVYA					
35	15QM1A0440	MANCHIREVULA HARISHWAR					

36	15QM1A0441	MANKALA NAVEEN RAJ					
37	15QM1A0442	MANNEM SREEJA					
38	15QM1A0443	MARAM MANOJ REDDY					
39	15QM1A0445	MUSKU SAMYUKTHA					
40	15QM1A0447	GAVVALA VISHWANATH					
41	15QM1A0450	NAGARALA NITHISH REDDY					
42	15QM1A0451	NAGIREDDY SWAPNA SHRI					
43	15QM1A0452	NALLA VEDA SREE					

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CERTIFICATE

Name: A DIKSHITH RAO

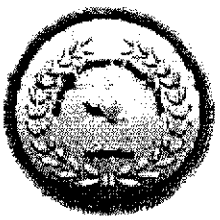
Registration No: 15QM1A0401

has successfully completed the prescribed requirements for the award of value added course on **"ORACLE DATABASE PROGRAMMING"** conducted by department of Electronics and Communication Engineering held in month of August from 12/08/2017 to 16/08/2017 in the academic year 2017-2018.

Date: 16-08-2017

Arjun

Course Coordinator



Principal

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CERTIFICATE

Name: AVUSULA MOUNIKA

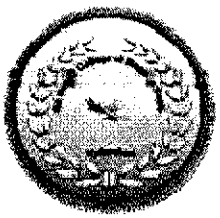
Registration No: 15QM1A0405

has successfully completed the prescribed requirements for the award of value added course on **"ORACLE DATABASE PROGRAMMING"** conducted by department of Electronics and Communication Engineering held in month of August from 12/08/2017 to 16/08/2017 in the academic year 2017-2018.

Date: 16-08-2017

Arjun

Course Coordinator



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