EKLAVYA
UNIVERSITY
ज्ञानप्राप्त्ये लक्ष्यसन्धानम्

Eklavya University

SESSION

2023-24

B.C.A. II Year

SYLLABUS

OF

NEP

School of Basic and Applied Sciences

EKLAVYA UNIVERSITY, DAMOH (M.P.)

School of Basic and Applied Sciences

Scheme of Examination B.C.A. II Year (Major)

Session 2023-24

Subject wise distribution of marks and corresponding credits

S. No.	Subject Name	Subject Code	Paper Name	Maximum Marks Allotted											Total Marks	Contact Periods Per week			Total Credits
				Theory Slot					Practical Slot										
				External Assesment (End Term Exam)		Internal Assesment Class test (Descriptive & Objective) /Assignment/Seminar/			Internal Assesment			External Assesment				L	T	P	
				P1	P2	Internal Assesment I	Internal Assesment II	Internal Assesment III	Class test/ Interaction	Attendance	Assignment/ Presentation	Viva Voce	Practical Record	Lab Work/ Sessional					
1	BCA	EU S2-BCAA1T	Data Communication and Computer Network	70		10	10	10							100	6	_	0	4
		EU S2-BCAA2T	Database Management Systems Using PL/SQL		70	10	10	10							100	4	_	0	4
		EU S2-BCAA2P	DBMS Using PL/SQL Lab						10	10	10	10	10	50	100	_	_	2	2

EKLAVYA UNIVERSITY, DAMOH (M.P.)

School of Basic and Applied Sciences

Scheme of Examination B.C.A. II Year (Minor)

Session 2023-24

Subject wise distribution of marks and corresponding credits

S. No.	Subject Name	Subject Code	Paper Name	Maximum Marks Allotted											Total Marks	Contact Periods Per week			Total Credits
				Theory Slot					Practical Slot										
				External Assesment (End Term Exam)		Internal Assesment Class test (Descriptive & Objective) /Assignment/Seminar/			Internal Assesment			External Assesment				L	T	P	
				P1	P2	Internal Assesment I	Internal Assesment II	Internal Assesment III	Class test/ Interaction	Attendance	Assignment/ Presentation	Viva Voce	Practical Record	Lab Work/ Sessional					
1	B.C.A.	S2-BCAB2T	Internet Applications Using Java Programming		70	10	10	10							100	4	_	0	4
		S2-BCAB2P	Java Programming Lab						10	10	10	10	10	50	100	_	_	2	2

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EKLAVYA UNIVERSITY, DAMOH (M.P.)

School of Basic and Applied Sciences

Scheme of Examination B.C.A. II Year (Elective)

Session 2023-24

Subject wise distribution of marks and corresponding credits

S. No.	Subject Name	Subject Code	Paper Name	Maximum Marks Allotted											Total Marks	Contact Periods Per week			Total Credits
				Theory Slot					Practical Slot										
				External Assesment (End Term Exam)		Internal Assesment Class test (Descriptive & Objective) /Assignment/Seminar/			Internal Assesment			External Assesment							
				P1	P2	Internal Assesment I	Internal Assesment II	Internal Assesment III	Class test/ Interaction	Attendance	Assignment/ Presentation	Viva Voce	Practical Record	Lab Work/ Sessional		L	T	P	
1	BCA (Elective)	EU/S2-BCAC1G	Internet of Things (IOTs)	70		10	10	10	–	–	–	–	–	–	100	4	–	–	4
		EU/S2-BCAC1R	Internet of Things (IOTs), Practical Lab		–	–	–	–	10	10	10	10	10	50	100	0	–	2	2
		EU/S2-BCAC2G	Optimization Techniques	70		10	10	10							100	6	–	–	6
		EU/S2-BCAD1G	E-Commerce	70		10	10	10							100	6	–	–	6
		EU/S2-BCAD2G	Organizational Behaviour	70		10	10	10							100	6	–	–	6

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EKLAVYA UNIVERSITY, DAMOH (M.P.)

School of Basic and Applied Sciences

Scheme of Examination B.C.A. II Year (Internship)

Session 2023-24

Subject wise distribution of marks and corresponding credits

S. No.	Subject Name	Subject Code	Paper Name	Internship		Total Marks	Contact Periods Per week			Total Credits
				External Assesment	Internal Assesment		L	T	P	
				Field Work	Written Work					
	Internship	EUIN-SHIP2	Internship	75	25	100	–	–	4	4

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EKLAVYA UNIVERSITY
ज्ञान प्राप्ये लक्ष्य संधानम्

School of Basic & Applied Sciences

Class				**Bachelor of Computer Application (BCA)**
Semester/Year				**II YEAR**
Subject & Subject Code				**Data Communication and Computer Networks (Major-1)** E**US2-BCAA1T**
Max. Marks				**70+30=100**
Credit			**Total Credits**	
L	**T**	**P**	**6**	
0	**6**	**0**		

Course Objectives:

1. Build an understanding of the fundamental concepts of computer networking.
2. Introduce the students to advanced networking concepts, preparing the student for entry into an advanced course in computer networking.
3. Independently understand basic computer network technology.

Course Outcome:

After completing this course students will be able to:

1. Demonstrate the Basic Concepts of Networking.
2. Networking Principles, Routing Algorithms, IP Addressing, and Working of Networking Devices.
3. Demonstrate the Significance, Purpose, and application of Networking Protocols and Standards.
4. Describe, compare and contrast LAN, WAN, MAN, Intranet, Internet, AM, FM, PM, and Various Switching Techniques.
5. Explain the working of Layers and apply the various protocols of OSI&TCP/ IP model.
6. Analyze the Requirements for a Given Organizational Structure and Select the Most Appropriate Networking Architecture and Technologies.
7. Design the Network Diagram and Solve the Networking Problems of the Organizations with Consideration of Humans and the Environment. Install and Configure the Networking Devices.

Student Learning Outcomes (SLO):

1. Identify the different types of network topologies and protocols.
2. Enumerate the layers of the OSI model and TCP/IP. Understand the functions of each layer.

Unit	Syllabus	Periods
UNIT - I	Network goals and application, Network structure, Network services, Example of networks and Network Standardization, Networking models: centralized, distributed, and collaborative. Network Topologies: Bus, Star, Ring, Tree, Hybrid: Selection and Evaluation factors.	15

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UNIT - II	Theoretical Basis for Data communication, Transmission media, Twisted pair (UTP, STP), Coaxial Cable, Fiber optics: Selection and Evaluation factors. Line of Sight Transmission, Communication Satellites. Analog and Digital transmission. Transmission and switching, frequency division and time division multiplexing, STDM, Circuit switching, packet switching, and messages witching. Line Configuration.	20
UNIT - III	Brief Over view of LAN (Local Area Network): Classification. A brief over view of Wide Area Network (WAN).Salient features and differences of LAN with emphasis on Media, Topology, Speed of Transmission, Distance, and Cost. Terminal Handling, Polling, Token passing, Contention. IEEE Standards: their need and developments.	20
UNIT - IV	Open System: What is an Open System? Network Architectures, ISO-OSI Reference Model, Layers: Application, Presentation, Session, Transport, Network, Data Link & Physical. Physical Layer - Transmission, Band width, Signaling devices used, media type. Data Link Layer -: Addressing, Media Access Methods, Logical Link Control, Basic algorithms/protocols.	20
UNIT - V	Network Layer: Routing: Fewest-Hops routing, Type of Service routing, Updating Gateway routing information. A brief overview of Gateways, Bridges and Routers, Gateway protocols, and routing daemons. OSI and TCP/IP model. TCP/IP and Ethernet. The Internet: The structure of the Internet, the internet layers, Internet work problems. Internet Standards.	15

Text Books:-

1. Tannanbaum,A.S.:ComputerNetworks,PrenticeHall,1985.processing,PrenticeHall,1983.
2. Black: Computer Networks: Protocols, standards, and Interfaces, Prentice Hall International1.Tannanbaum,A.S.:ComputerNetworks,PrenticeHall,1985.processing, PrenticeHall,1983.
3. FourauzanB.,"DataCommunicationsandNetworking",3rdedition,TataMcGrawHillPublications .

References Books:-

1. ComerD.,"ComputerNetworksandInternet",2NDEdition,PearsonEducation
2. S.K. Basandra & S.Jaiswal, "Local Area Networks", Galgotia Publications.
3. William Stallings, "Data and Computer Communication"
4. Book published by M.P. Granth Academy, Bhopal

Suggested Web Links:-

1. http://neptl.ac.in/courses/106/105/106105082/
2. http://neptl.ac.in/courses.html
3. http://onlinecourses.nptl.ac.in/noc22%20ee61/preview
4. http://www.nphindigranthacademy.org/

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EKLAVYA UNIVERSITY
ज्ञान प्राप्तये लक्ष्य संधानम्

School of Basic & Applied Sciences

Class				Bachelor of Computer Application (BCA)
Semester/Year				II YEAR
Subject & Subject Code				Database Management Systems Using PL/SQL (Major-2) EUS2-BCAA2T
Max. Marks				70+30=100
Credit			Total Credits	
L	T	P	4	
0	4	0		

Course Objectives:

1. Enhance the knowledge and understanding of Database analysis and design.
2. Enhance the knowledge of the processes of Database Development and Administration using SQL and PL/SQL

Course Outcome:

The course will enable the students to:

1. Explain the features of database management systems and relational databases.
2. Design conceptual models of a database using ER modeling for real-life applications and construct queries in relational algebra.
3. Create and populate an RDBMS for a real-life application, with constraints and keys, using SQL.
4. Retrieve any type of information from a database by formulating complex queries in SQL.
5. Analyse the existing design of a database schema and apply concepts of normalization to design an optimal database.

Student Learning Outcomes (SLO):

1. Use the Relational model and how it is supported by SQL and PL/SQL.
2. Use the PL/SQL code constructs of IF-THEN-ELSE and LOOP types as well as syntax and command functions.

Unit	Syllabus	Periods
UNIT - I	Introduction to DBMS: Why database? Characteristics of data in the database, DBMS. What are the data base, Advantages of DBMS? Data Models Database Architecture and Modeling: Conceptual, physical, and logical data base models, Role of DBA, Database design. Entity Relationship (ER) Model: Components of ER-model, ER modeling symbols, Relationships. Enhanced Entity Relationship (EER) Model: An introduction, Super class and subclass entity types, Specialization, Generalization, Attribute inheritance, Categorization & Aggregation. Keywords:DBMS,DBA,EntityRelationship(ER),EER,Superclass,Subclass,	12

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	Specialization,Generalization,Categorization&Aggregation.	
UNIT - II	The Relational Data Model: Fundamental Concepts: Relations, Null Values, Keys, Foreign Keys, Integrity Constraints - Entity Integrity & Relational Integrity. Normalization process: First Normal Form, Functional Dependencies, Second Normal Form, Third Normal Form, Boyce-Codd Normal Form (BCNF), Fourth Normal Form; Other Normal Forms - Fifth Normal Form & Domain/Key Normal Form. Transforming a Conceptual Model to a Relational3fodef:Transforming Objects Sets and Attributes, Transforming Models without External Keys, Transforming Specialization and Generalization Object Sets, Transforming Relationships: One-One Relationships, One-Many Relationships, Many-Many Relationships; Transforming Aggregated Object Sets, Transforming Recursive Relationships. Keywords: Keys, Normalization, BCNF, Aggregated Object Sets, Recursive Relationships.	12
UNIT - III	Relational database implementation: (a)Relational Algebra and Calculus Relational Algebra: Union, Intersection, Difference, Product, Select, Project, Join- Natural, Theta &Outer Join, Divide, Assignment. Relational Calculus: Target list & Qualifying Statement, The Existential Quantifies, The Universal Quantifier. Keywords: JOIN, Target list, Existential Quantifier, Universal Quantifier.	12
UNIT - IV	Relational data base implementation (continued): (b) Relational Implementation with SQL Relational Implementations: An Overview. Schema and Table Definition: Schema definition, Data types & domains, Defining Tables, Column Definition. Data Manipulation: Simple Queries (SELECT, FROM, WHERE), Multiple- Table Queries, Sub queries, Correlated Sub queries, EXISTS and NOT EXISTS operators, Built-In Functions (SUM, AVG, COUNT, MAX, and MIN), GROUP BY and HAVING clause, Built-In Functions with Sub queries. Relational Algebra Operations: UNION, INTERSECT ,EXCEPT, JOIN. Database Change Operations: INSERT, UPDATE, DELETE. Using SQL with Data Processing Languages; View Definition, Restrictions on View Queries and Updates. Keywords: Schema, SELECT, Data Manipulation, Database Change Operation, View.	12

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UNIT - V	Physical Database Systems Introduction, Physical Access of the Database. Physical Storage Media, Secondary Storage, Physical Storage Blocks. Disk Performance Factors: Access Motion Time, Head Activation Time, Rotational Delay, Data Transfer Rate, and Data Transfer Time. Data Storage Formats on Disk: Track Format, Record Format—Fixed-Length Records &Variable-Length Records, Input/Output Management. File Organizing and Addressing Methods: Sequential File Organization, Indexed-Sequential File Organization, Direct File Organization, Hashing: Static Hash Functions, and Dynamic Hash Functions. Keywords-Disk Performance Factors, Sequential File Organization, Indexed Sequential File Organization, Direct File Organization, Hashing.	12

Text Books:-

1. Gary W. Hansen & James V. Hansen, “Database Management and Design”,2“Ed.,2007, Prentice Hall of India Pvt Ltd.
2. Instructional Software Research & Development(ISRD) Group, Lucknow “Introduction to DatabaseManagementSystems”,2006,AceSeries,TataMcGrawHillPublishingCompanyLimited,NewDelhi
3. RamezElmasri,ShamkantB.Navathe,“FundamentalsofDatabaseSystems”,7thEdition,2016,Pearson

References Books:-

1. Raghu Rama krishnan & Johannes Gehrke, “Database Management Systems”, 3"Edition, 2014, Mc Graw Hill
2. Education
3. C. J. Date, “An Introduction to Database System”, 8 “'Edition, 2003, Pearson
4. Abraham Silberschatz, Henry F. Korth, S. Sudharshan, “Database System Concepts”, 6'Edition, 2010, Tata Mc Graw Hill
5. Books published by M. P. Hindi Granth Academy, Bhopal

Suggested Digital Platform Web Links:

1. https://en.wikipedia.org/wiki/Relational_model
2. https://en.wikipedia.org/wiki/Relational_algebra
3. http://www.nphindigranthacademy.org/
4. http://beginnersbook.com/2015/05/normlization-in-dbms/

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EKLAVYA UNIVERSITY

ज्ञान प्राप्ये लक्ष्य संधानम्

School of Basic & Applied Sciences

Class	**Bachelor of Computer Application (BCA)**
Semester/Year	**II YEAR**
Subject & Subject Code	**DBMS Using PL/SQL Lab EUS2-BCAA2P**
Max. Marks	**70**

Credit			**Total Credits**
L	**T**	**P**	**2**
0	**0**	**2**	

Course Outcome:

This lab is based on the theory course of DBMS. This lab course involves the development of the practical skills in DBMS using MS-Access/Visual- Fox Pio/SQL-Server/etc. This course is an attempt to upgrade and enhance students' theoretical skills and provide the hands-on experience.

After completing this lab course sessions, student will be able:

1. To create Databases &Views.
2. Execute simple advanced SQL queries.
3. Use DBMS tools in the areas of database applications.

Topics to be covered in the lab syllabus

- Introduction to MS-Access/Visual-FoxPro/SQL-Server/etc
- Hands on practice on the application package used in the lab (i.e. on MS-Access/Visual-FoxPro/SQL-Server etc)
- Database creation using MS-Access/Visual-FoxPro/SQL-Server etc
- Simple SQL queries (Single table retrieval)
- Use of Advanced SQL queries

4. Implementation of Views

Practical List

Practical details:

Students are required to practice the concepts learnt in the theory by designing and querying a database for a chosen organization (Like: College, Library, Transport, etc). The teacher may devise appropriate weekly lab assignments to help students practice the designing, querying a database in the context of example database. Some indicative list of' experiments with their aim, problem definition, theory is, given below:

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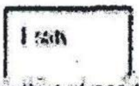
Experiment-1

Aim: To draw ER Model and Relational Model for a given database. Show ER to Relational Model
Reduction.

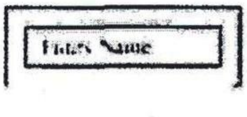
Resources used : MS-Access/Visual-FoxPro/SQL-Server/etc
Problem Definition: List the data requirements for the database of the company which keeps track of the company employee, departments and projects. The database designers provide the following description:

1. The company is organized into departments. Each department has unique name, unique number, and
Particular employee to manage the department. We keep track of the start date and the employee begins managing the department. The Department has several locations.
2. The department controls an umber of project each of which has a unique name, unique number and a
Single location.
3. We store each employee's names, social security number, address, salary, sex and dob. An employee is assigned one department but may work on several projects which are not necessarily controlled by the same department. We keep track of the department of each employee works on each project and for insurance purposes. We keep each dependent's first name, sex, dob and relation.

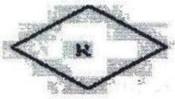
Theory: The ER data model was developed to facilitate the database design by allowing specification of an enterprise schema that represents the overall logical structure of the database. The ER model data model is one of the several data models. The semantic aspect of the model lies in its representation of the meaning of the data. The ER model is very useful many database design tools drawn on concepts from the ER model. The ER model employs 3 basic notations: entity set ,relationship set and attributes.

1 

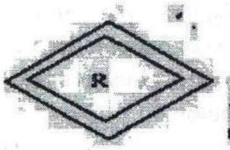
Enthysat: An entity is a set of entities of the same type that share the properoes or attributes.



Weak entity set: An entity set may not have sufficient attributes to form a primary key. Such an entity set is
Termed as week entity set.



Realtionship Set: A relationship is an association among several entities. A relationship set is a set of relationship of the same type.



Identification relationship set for weak entity set : The relationship associating the weak entity set with the identifying entity set is called the idenbfying relationship.

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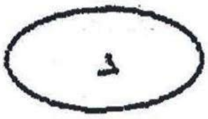

Primary key: the primary key is used to denote a candidate key that is chosen by the database designers as the principel means of identifying entities within an entity set.

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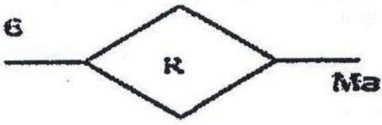

Many to many relationship

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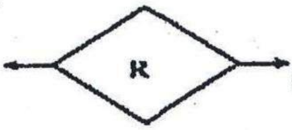
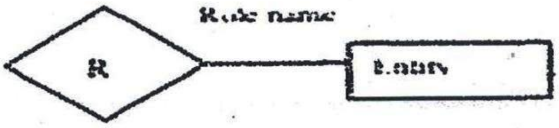
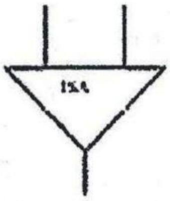
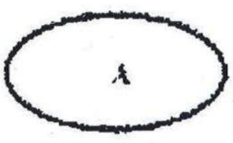


One to One relationship

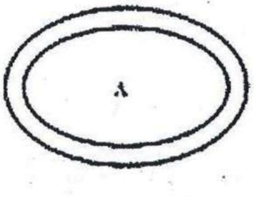




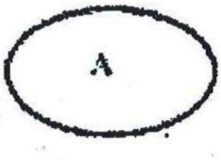
Total Generalization



Attribute



Multi valued attribute



Derived attribute

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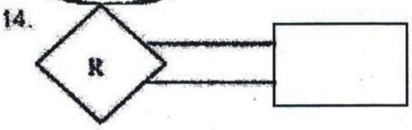
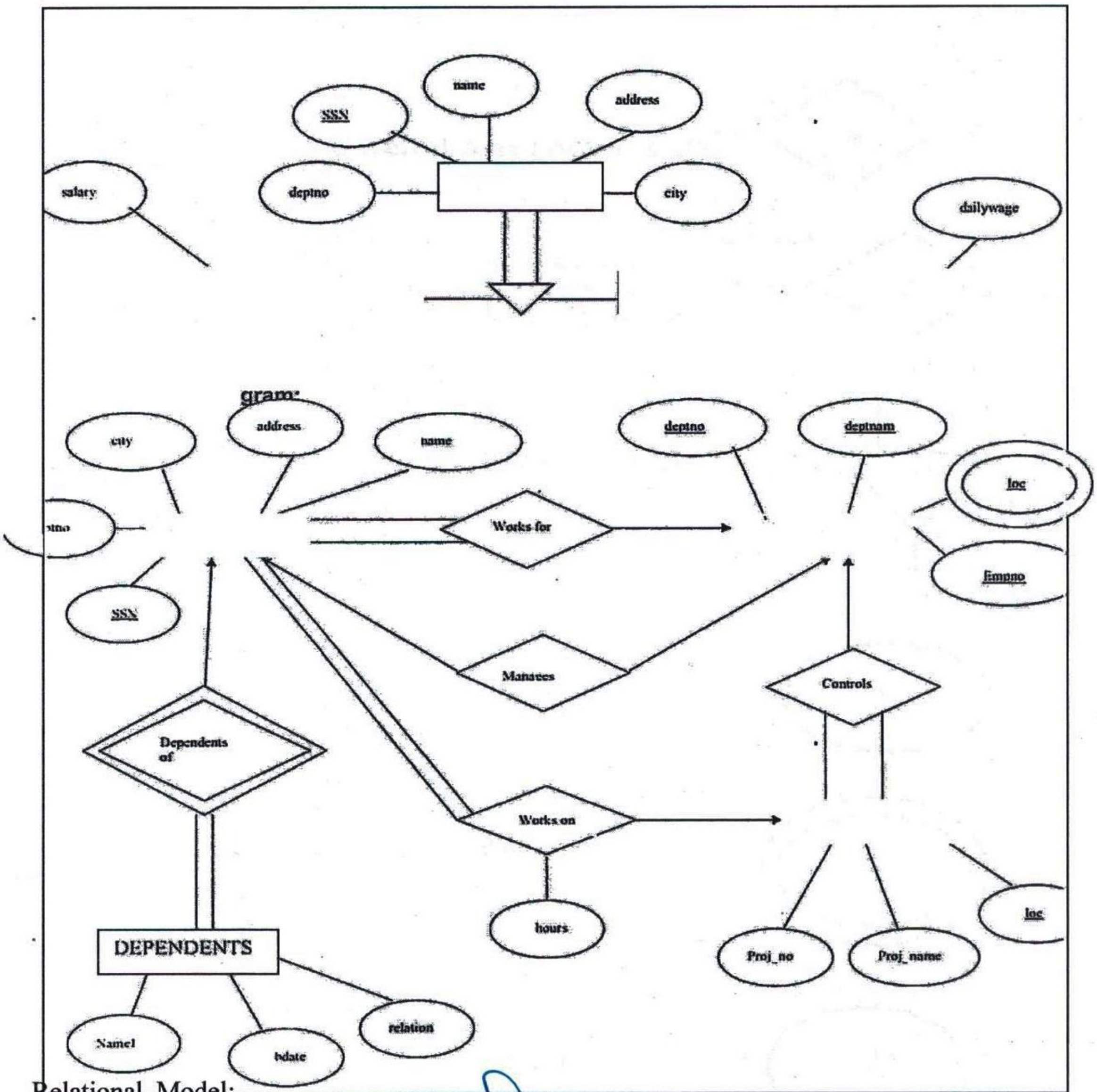
Discriminating Attribute of weak entity set: The discnmination

Discriminating Attribute of weak entity set: The discnmination of week entity set is a set of attributes that allows the distinction to be made

14.



Total Participation of entity set relationship :The partidpation of an entity .set E in a relationship set R is said to be total if every entity in E participates in at least ne relationship in R.



Relational Model:

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Employee

F name	SSN	address	salary	city	Dept no

Department

Dept no	Dept name	Mgr SSN

Department_ Location

Dept no	Dept loc

Project

proj no	**Proj name**	**location**	Dept no

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SSN	hours	Proj name

Dependents

name1	relation	B date	SSN

Employee

SSN

F name
address
Salary
city
dept no

Department

Dept no

Dept
name
Mgr SSN

Department location

Dept no

Dept loc

Project

projno

projname
location
deptno

Works on

SSN
hours
proj
no

Dependents

name1
relation
bdate
SSN

Conclusion : We have drawn ER model and Relational Model for the same.

Experiment- 2

Aim : Implementation Database

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1. Creation of Databasa With proper constraints (Pk, Fk,. ....etc)
2. Insert into database using different types of insert statements
3. Display

Resources used: MS-Access/Visual-FoxPro /SQL-Server/etc

Theory: The set of relations in a database must specifies to the system by means of a data definition language (DDL). The SQL DDL allows specification of not only a set of relations but also specific information about the relation including:

1. The schema for each relation
2. The domain of values associated with each attribute
3. The integrity constraints
4. The set of indices to be .maintained for relation
5. The security and authorization information for each relation
6. The physical storage structure of each relation on disk

Create Table

Create table lab ($A_1 D_1$, $A_2 D_2$...........,$A_n D_n$, <integrity constraint-1>,……….<integrity constraint-k>)

Where tab is the name of the relation each A_i is the name of the attribute in the scheme of relation tab and Di ;is the domain type of the values in the domain of attribute Ai. There are a number of different allowable integrity constraints .We specify here only the primary key for the relation.

Insert

A newly created relation is empty initially. We can use the insert command to load data into the relation.

Insert into<table name > values (A_1, A_2, ... A_n)

The values are specified in the order in which the corresponding attributes are listed in the relation schema.

Display

To display the table after creation and insertion we use the following syntax:

select*'from <table name>

Select clause is used to list the attributes desired in the result of a query. It corresponds to the projection operation of the relational algebra. From clause lists the relations to be scanned in the evaluation of the expression. The asterisk symbol("*") is used to denote "all atttibutes".

Conclusion

Thus, we have successfully created the database of company and inserted values in the database

Experiment-3

Aim: Data Definition(schema)Modification

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1. Alter table: add column, remove column, add constraint, remove constraint

2. Drop table

3. Show schema of any table

4. Applying different constraints check, not null, etc. Resources used : MS-Access/Visual-FoxPro/SQL-Server/etc

Theory: The various command, clauses, functions used for the modification of database are as follows:

(1) **Alter table**: Alter table command is used to add attribute to an existing relation. All the tuples are assigned to null as the values for the new attribute. The form of the alter table command is

.Alter table r add A D

Where, r is the name of an existing relation. A is the name of the attribute to be added and D is the domain of the added attribute. We can drop attribute from a relation by the command:

Alter table r drop A

(2) **Update**: In certain situation we may wish to change a value in a tuple without changing all values in the tuple. For this purpose, the update statement can be used, as we could for insert and delete. We can choose the tuple be updated by using a query:

```
eg, update EMPLOYEE
  set age=20
  where SSN=514065
```

The preceding update statement is applied only to tuple where SSN=514065.If we want same changes in all tuples, then we write

Update EMPLOYEE

(3) **Drop Table:** To remove a relation from an SQL database we use the drop table command. The drop table command deletes all information about the dropped relation from the database

drop table r

The relation r and to delete all tuples form r, the following command is used

Delete from r .

(4) Adding and Removing Columns:

add age in

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alter table r
add A D
eg. alter table EMPLOYEE

To remove a column from an existing relation we use

Alter table r
Drop column A
Eg. alter table EMPLOYEE
drop column age

(5) **Not Null** : The not null specification prohibits the insertion of a null value. For a attribute any data base modification that would cause null to be inserted in an attribute declared to be not null generates an error diagnostic. If an attribute is declaration, as the primary then it cannot take a null value.

Eg. .alter table EMPLOYEE

alter column salary int Not NULL

(6) **Check:** The heck clause in SQL can be applied to relation declarations as well to domain declarations when applied to a relation declaration, the clause check(p) specified a predicate p that must be specified by every tuple in a relation. A common use of the check clause is to ensure that the attribute value satisfy specified condition.

Eg, alter table EMPLOYEE add constracint em_ age age check(age>19)

Conclusion : Thus, we have executed all the queries required for the modification of database.

Experiinent-4

Aim : Simple SQL queries(Single table retrieval)

1. Make use of different operators(relational, logical etc.)
2. Selection of rows and columns, renaming columns, use of distinct keyword
3. String handling(%,etc.)
4. Update statement, case update
5. Delete, cascade delete(if possible)

Resources used : MS-Access/Visual-FoxPro/SQL-Server/etc

Theory:

1. Select clause: Select clause is used to list the attributes desired in the result of a query. It corresponds to the projection operation of the relational algebra:

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Eg. Select*from EMPLOYEE

-all attributes

Select f name, SSN from EMPLOYEE

-only f name and SSN

2. From clause: From clause lists the relations to be scanned in the evaluation of the expansion.

3. Where clause : The where clause corresponds to the selection predicate of the relational algebra. It consists of a predicate involving attribute of the relations that appear in the from clause.

(1)And: and clause is used when we want a result and all the conditions are satisfied in the where clause.

True and unknows = true
False and unknown = unknown
Unknown or unknown = unknown

(2) as(Rename operator) : SQL provides a mechanism for renaming both relations and attributes. It uses the as

clause taking the form

Old _ name as new _ name

(2)distinct : If we want to eliminate duplicates, we use the keyword distinct in the aggregation expression.

eg. Select
distinct salary

from EMPLOYEE

ég. from EMPLOYEE

(4) string operations : The most commonly used operations on strings are pattern matching using the operation like we describe the patterns by using the two special characters % and _.

%: The % character matches any substring

_ : The character matches any character

Eg, 'Perry % ' matches any string beginning with "perry".

"_ _ _" matches any string containing "idge" as substring

"_ _ _%" matches any string of at least three characters

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(5) update and Casa Update: In certain situations , we may wish to change a value in a tuple without changing all the values in the tuples. For this purpose, the update statement can be used.

ag. Update EMPLOYEE

set age= 20

where SSN=514065

SQL provides a case construct which we can use to perform both the update with a single update statement voiding the problem with the order of update.

eg. Update account

when balance<=1000

then balance*1.05

else balance*1.06

(6)delete: To delete a tuple from relation r,we use the following command

Delete from r

Where, r is the name of the relation

Conclusion: Thus we have execute simple queries in SQL.

Experiment-5

Aims : Advanced SQL Queries-1

1. Group by, having clause, aggregate function
2. Set operations like union, union all and use of order by clause
3. Nested queries: in, not_in, exists, not exists and any, all

Resources used : MS-Access/Visual-FoxPro/SQL-Server/etc

Theorv:

1. Group by clause : These are circumstances where we would like to apply the aggregate function to a single set of tuples but also to a group of tuples, we would like to specify this wish in SQL using the group by clause. The attributes or attributes given by the groups by clause are used to from group. Tuples with the same value on all attributes in the group by placed in one group:

   eg.

   From EMPLOYEE

2. **Hawing clause**: A having clause is like a where clause but only applies only to groups as a whole where the clause applies to the individual rows. A query can contain both where clause and a having clause.

In that case

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a. The where clause is applied first to the individual rows in the table structures objects in the diagrams pane. Only the rows that meet the conditions in the where clause are grouped.

b. The having Clause is then applied to the rows in the result set that are produced by grouping. Only the groups that meet the having conditions appear in the query output.

eg.

```
Select dept_no from EMPLOYEE

Group_by dept_no

Having avg (salary)>=all

(select avg (salary)

   4 From EMPLOYEE

  Group by dept_ no)
```

3. **Agrregate functions**: Aggregate functions such as SUM, AVG, count, count (*), MAX and MIN generate summary values in query result sets. An aggregate functions (with the exception of count (*) processes all the selected values in a single column to produce a single result value:

eg.

```
Select dept_no, count(*)
from EXIPLOYEE
group by deptno
```

eg.

```
select max(salary) as maximum
from EKIPLOYEE
```

eg.

```
select sum(salary) as total_salary
from EMPLOYEE
```

eg.

```
select min(salary) as minimum
from EMPLOYER
```

3. **Union and Union operators**: Combines the result of two or more queries into a single result set consisting of all the rows belonging to all queries in the union. This is different from using joins that combine columns from two tables. Two basic rules for combining the result sets of two queries with union are:

A. The number and the order of the columns must be identical in all queries.
B. The data types must be compatible:

```
Select max(salary) as maximum   from EMPLOYEE
Union
select min(salary)
```

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```
from EMPLOYEE
union
```

Specifies that multiple result two or more queries into a single result set consisting of all the rows belonging to al1 queries into a single result set consisting of all the rows belonging to all queries in the union. This is different from rising joins that combine columns from two tables. Two basic rules are followed.

4. Order by clause: SQL allows the user to order the tuples in the result set of the query of a query by the values of one or more attributes using the order by clause. The default order is in the increasing order of values. We can specify the keyword DES if we want values in descending order.
5. Exists and not exists: Subqueries introduced with exists and not queries can be used for two set theory operations: Intersection and Difference. The intersection of two sets contains all elements that belong to both of the original sets. The difference contains elements that belong to only first of the two sets.

eg.

```
Select *from DEPARTNIENT
where exists (selcect *from PROJECT
where DEPARTMENT.dept_no=PROJECT.dept_no)
```

6. IN and NOT IN: SQL allows testing tuples for membership in a relation. The "IN" connective tests for set membership where the set is a collection of values produced by select clause. The "NOT IN" connective tests for the absence of set membership. The IN and NOT IN connectives can also be used on enumerated sets.

eg.

```
Select proj_ name from PROJECT
where dept _no not in (select dept no from DEPARTMENT
where dept_ name="chemistry")

select frame from EMPLOYEE
where SSN in (select mgr _SSN from DEPARTMENT)
```

Conclusion : Thus, we have studied and executed all the queries mentioned using various clauses.

Experiment-6

Aim : Advanced SQL Queries -2.

(1) Join (Inner &Outer)

(2) Exists &Union

Resources used : MS-Access/Visual-FoxPro/SQL-Server/etc

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Theory:

JOINS: SQL joins are used to query data fiom two or more tables, based on a relationship between certain columns in these tables.

Type of JOIN:

•Equi Joins:

This operation allows to connect, with a relation of equality, the tables which have at least a common attribute One must have n - 7conditions of join, n being the number of tables which intervene in the query.

If no condition of join is specified, the corresponding query will realize the Cartesian product of the implied tables.

Syntax:

```
SELECTTABLE1.coll, TABLE1.col2....... 1,TABLE1.coll,TABLE2.col2.........

FROMtable_name1, table_name2

WHERE table_narne1.col1= table_name2.col2
```

TYPE OF Equi-Joins:

An equi – join is Further classified into two categories:

1. Inner join
2. Outer join

1. Inner join
   The INNER Join keyword return rows when there is at least one match in both tables.
   Synatax:
   ```
   SELECT column_ name1
   FROM table_name1
   INNER JOIN table_ name2
   ON table_ name1. Column_ name=table_name2.column_ name
   ```

(b) Outer Joins:

The outer join is returning all the rows returned by simple join or equijoin as well as those rows from one table that do not match any row from the other table, the symbol (+) represents outer join. The outer table operator can a|ppear only on side of the expression.

Type of Outer Joins:

• Left OUTER JOIN : Return all rows from the left table, even if there are no matches in the right table.

Syntax:

```
SELECT TABLE1.colmim.,...
TABLE2.coluuul.....
FROM table_ name1, table_name2
```

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WHERE table_name1.column=table_name2.column(+);
Right OUTER JOIN: Return all rows from the table, ever if there are no matches in the left tables.
Syntax:

```
   SELECT TABLE. column………
    TABLE2. column………..
    FROM table_name1, table_name2
   WHERE table_name1. Column=table_name2.column(+);
```

EXISTS

EXISTS uses a subquery as a condition, where the condition is True if the subquery returns any rows, and False if the subquery does not return any rows.
Syntax:

```
SELECT columns
FROM tables
WHERE EXITS(subquery);
```

UNION

There are accasions where you might want to see the results of multiple queries together, combining their output; use UNION.
The SQL UNION. Operator combines two or more SELECT statements.
Syntax:

```
        SELECT column _name(s) FROM table_name1
        UNION
        SELECT column _ name(s)FROM table_name2
```

Notice that SQL requires that the Select list (of columns) must match, column-by-column, in data type This concept is useful in situations where a primary key is related to a foreign key , but the foreign key value for some primary keys is NULL. For example, in one table, the primary keys is a salesperson, and in another table is customers, With their salesperson listed in the same row. However, if a salesperson has no customers , that Person's name Won't appear in the customer table.

Conclusion : Thus, we have studied and executed all the queries mentioned using various clauses.

Experiment-7

Aim : Implementation of views.
1. Creation of views
2. Usage of views
3. Creation of views using views
4. Drop view

Resources used : MS-Access/Visual-FoxPro/SQL-Server/etc

Theory:

Views: Any relation that is not part of any logical model but is made visible to the user as a virtual relation is called as a view. It is possible to support a large number of views on the top of any given set of actual database relation. Views help in 2 ways:

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1. For security purpose

2. Create a personalized collection of relation that is better user' s intuition than is logical model

Creation of Views:

1. Views is defined using 'create view' command

2. To define a view we must give the view a better name and must state the query that computer the view.

Syntax:

Create view<view name>as<query expression>

3. Once we have defined a view, we can use the view name and to refer to the virtual relation that the view generation.

4. Attribute name of the view can be specified explicitly as:

Create view V(VA1, VA2, ………. VAn)as select (A1, A2……….. An) form R1 where (p)

Where, p: predicate
R1 : relation,
Ai -An : attribute of view
view : view name
Creation of views using VIEW:
Since, view relations may appear in any place that a relation name may appear, except for restrictions on the use of views in update expressions. Thus, one view may be used in the expression defining another view. For eg. Let Enp _ work_ info is a view with attribute F_ name, SSN, Project _ no, Work_hrs. Then creation of oher view can be done as :

```
Create view new_view
From emp _ work _info
```

Updating of views
Although views are useful for the queries, they present a serious problem. If we express updates insertion or deletion on view as the modification done to the database in terms of the views must be translated to a modification to actual relations in the logical methods of database,

Drop view
A view creates earlier can be dropped using 'Drop View' command
Syntax:
Drop view'r'
Where, r: View Name.
It deletes all the information about view from the database.

Suggested Readings:

1. Dr Rajeev Chopra, "Database Management System (DBMS) A Practical Approach", 2010, S Chand
2. Jitendra Patel, "DBMS Lab Manual" Kindle Edition, 2012
. Books published by M.P. Hindi Granth Academy, Bhopals

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EKLAVYA UNIVERSITY
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School of Basic & Applied Sciences

Class	**Bachelor of Computer Application (BCA)**
Semester/Year	**II YEAR**
Subject & Subject Code	**Internet Applications using Java Programming (Minor)** EU **S2-BCAB2T**
Max. Marks	**70+30=100**

Credit			**Total Credits**
L	**T**	**P**	**4**
0	**4**	**0**	

Course Outcome:
After completing his course students will be able to:

1. Use an integrated development environment to write, compile, run, and test simple object oriented Java programs.
2. Read and make elementary modifications to Java programs that solve real- world problems.
3. Validate input in a Java program.
4. Design and use basic applet for webpage

Unit	Syllabus	Periods
UNIT - I	The Java Environment: History and features of java, C++ Vs java, OOPs concept, how java works, the concept of PATH and CLASS PATH, A simple program, its compilation and execution, JAVA Program Structure, Java Virtual Machine concepts, java platform overview, Primitive data types, variables and constants, operators, expression, statement- branching, looping and jumping, labeled statements, Control Structure including selection. Object Oriented Programming in Java: Classes, objects and methods: defining a class, adding variables and methods, creating objects, constructors, Instances, field and methods initialization by constructors, Copy constructor, memory allocation and garbage collection in java keywords, access methods Arrays, String and String buffer classes, Wrapper classes, using the JDK tools.	10
UNIT - II	Inheritance: Inheritance basics, Super class, Sub-class, Method overloading, abstract classes Interfaces: defining an interface, implementing & applying interfaces, variables in interfaces, extending interfaces. Multithreading and Exception Handling: Basic idea of multithreaded programming; The lifecycle of a thread, Creating thread with the thread class and runnable interface, Thread synchronization, Thread scheduling, Basic idea of exception handling: The try, catch and throw, throws	14

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UNIT - III	Applet programming-Local and Remote Applets, Applet Vs Application, creating and executing java applets, inserting applets in a web page, java security, passing parameter to applets, Aligning the Display, HTML Tags & Applet Tag, Getting Input from User. The AWT: The class hierarchy of window fundamentals; The basic user interface components Label, Button, Check Box, Radio Button, Choice menu, Text area, Scroll list, Scroll bar; Frame; Layout managers-flow layout, Grid layout Border layout, Card layout.	12
UNIT - IV	The Java Event Handling Model: Java's event delegation model ignoring the event, Self-contained events, Delegating events, The event class hierarchy, The relationship between interface, methods called, parameters and event source; Adapter classes, Event classes action Event, Adjustment Event, Container Event, Focus Event, Item Event, Event, Mouse Event, Text Event, Window Event. Networking basics, networking classes and interfaces, using java.net package, TCP/IP and datagram programming.	12
UNIT - V	Input/ Output: Exploring Java, Directories, stream classes The Byte Stream: Input stream, output stream, file input stream, file output stream, print stream, Random access file, the character streams, Buffered reader, buffered writer, print writer, serialization. JDBC: JDBC-ODBC bridge, The connectivity model, The driver manager, Navigating the result set object contents, java.sql Package, The JDBC exception classes, Connecting to the Remote database.	12

Text Books :-

1. Schildt java Complete Reference TMH
2. Das Rashmikanta Core Java, IE, Vikas
3. Bansal Nitin, AjitKumar, A Simplified approach to Java Programming, KALYAN1
4. Naughton &Schildt "The Complete Reference Java2",TataMcGrawHill
5. Deitel "Java- How to Program:" Pearson Education, Asia
6. Horstmann & Cornell "CoreJava2" (Vol I &II), Sun Microsystems
7. lvanBayross "Java2.0":BPB publications
8. IvorHorton's"BeginningJava2,JDK5Ed.,WileyIndia.
9. Book published by M.P. Granth Academy, Bhopal

Suggestive digital platform web links

1 https://www.youtube.com/watch?v=CFD9EFcNZTQ

2 https://www.youtube.com/watch?v=WhnYwoBY24

3 http://www.nphindigranthacademy.org/

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EKLAVYA UNIVERSITY

School of Basic & Applied Sciences

Class				**Bachelor of Computer Application (BCA)**
Semester/Year				**II YEAR**
Subject & Subject Code				**Java Programming Lab (Minor-P)EU S2-BCAB2P**
Max. Marks				**70**
Credit			**Total Credits**	
L	**T**	**P**	**2**	
0	**0**	**2**		

Course Outcome:

After the completion of this course, a successful student will beable to do the following:

1. Develop simple applications of java.
2. Implementation and use of conditional statement.
3. Learn to formulate iterative solutions and array processing algorithms for problems.
4. Learn to implement method Overloading and Overriding.
5. Implementation of inheritance and interface in java.
6. Develop a small applet program using awt.

Practical List

Given the problem statement, students are required to write code in Java, execute and test it. Students should be given assignments on following:

1. Write a program to print numbers in words rising Nested if and Switch Case.
2. Write a program called PassFail which prints "PASS" if the int variable "mark" is more than or equal to 50; or prints "FAIL" otherwise
3. Write a program called OddEven which prints "Odd Number" if the int variable "number" is odd, or "Even Number" otherwise.
4. Write a Program to find sum & average of 10 no. using arrays.
5. Write a program to display reverse of a digit no. using array.
6. Write a program to display grade according to the marks obtained by the student.

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7. Find the factorial of number if number is given by user using command line argument.
8. Write a program to print Fibonacci series.
9. Write a program to display tables from 2 to10.
10. Write a program to take an input from user and check given number is prime or not.
11. Write a program to implement method overriding.
12. Write a program to convert given string into. Uppercase and lowercase and get the length of string using array
13. Write a program to overload volume method to find out volume of cube and cuboid.
14. Write a program to design a class using abstract Methods and Classes.
15. Write a program to implement multiple inheritances by using Interface.
16. Write a program to create a package of your name and use that package in a class
17. Write a program to implement parameterized constructor with default argument.
18. Define an exception called "Marks out of Bound" exception that is thrown if the entered marks are greater than 100.
19. Develop a simple real life application to illustrate the use of multithreading.
20. Design an applet that takes three numerical values as input from the user and then displays the largest of those three numbers on the screen.

Text Books:-

1. Naughton Schildt "The complete reference java 2", Tata McGraw Hill
2. Java FF 6 for Beginners, Sharanam Shah, Vaishali Shah, Shroff Publishers and distributors.

References Books:-

1. Java EE Project using EJB, JPA and struts 2 for beginners, Shah, SPD
2. Java Programming A practical approach, C Xavier, McGraw Hill
3. Java Server Faces A practical Approach for beginners, B M Harwani, Eastern Economy Edition (PHI)
4. Advanced Java Technology, Savaliya, Dreamtech.

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EKLAVYA UNIVERSITY
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School of Basic & Applied Sciences

Class				**Bachelor of Computer Application (BCA)**
Semester/Year				**II YEAR**
Subject & Subject Code				**Internet of Things (IOTs) (Elective-I), EU S2-BCAC1G**
Max. Marks				**70+30=100**
Credit			**Total Credits**	
L	**T**	**P**	**4**	
0	**4**	**0**		

Course Outcome:
After completing this course students will be able to:

1. Understand the basics of Internet of Things
2. Get an idea of some of the application areas where the Internet ofThings can be applied
3. Understand the middleware for the Internet of Things and the concepts of Web of Things
4. Understand the concepts of Cloud of Things with emphasis on Mobile cloud Computing.
5. Understand the IOT protocols.

Unit	Syllabus	Periods
UNIT - I	Introduction: Definition, Characteristics of IOT, IOT Conceptual framework, IOT Architectural view, Physical design of IOT, Logical design of IOT, Application of IOT.	8
UNIT - II	Machine-to-machine (M2M), SDN (software defined networking), and NFV (network function virtualization) for IOT, data storage in IOT, IOT Cloud Based Services.	14
UNIT - III	Design Principles for Web Connectivity: Web Communication Protocols for connected devices, Message Communication Protocols for connected devices, SOAP, REST, HTTP Restful, and Web Sockets. Internet Connectivity Principles: Internet Connectivity, Internet-based communication, IP addressing in IOT, and Media Access control.	14
UNIT - IV	Sensor Technology, Participatory Sensing, Industrial IOT and Automotive IOT, Actuator, Sensor data Communication Protocols, Radio Frequency Identification Technology, Wireless Sensor Network Technology.	12
UNIT - V	IOT Design methodology: Specification -Requirement, process, model, service, functional & operational view. IOT Privacy and security solutions, Raspberry Pi & arduino devices. IOT Case studies: smart city streetlights control & monitoring.	12

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Text Books :-

1. Rajkamal,"Internet of Things“, Tata McGraw Hill publication.
2. HakimaChaouchi “The Internet of Things: Connecting Objects”, Wiley publication.
3. Francis dacosta “Rethinking the Internet of things: A scalable Approach to connecting everything”, 1st edition, Apress publications2013.
4. Donald Norris“The Internet of Things: Do-It-Yourself at Home Projects for Arduino, Raspberry Pi and BeagleBone Black“, McGraw Hill publication.

References Books:-

1. Philip Levis, “TinyOS Programming”
2. D. Norris, “The Internet of Things: Do-It-Yourself Projects with Arduino, Raspberry Pi, and Beagle Bone Black”, McGraw-Hill Education, New Delhi.
3. Raj Kamal, “Internet of Things: Architecture and Design”, Tata McGraw Hill publication.
4. A. Pajankar and A. Kakkar, “Raspberry Pi by Example”, Packt Publishing Ltd, Birmingham,UK.
5. Books published by M.P. Hindi Granth Academy, Bhopal.

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EKLAVYA UNIVERSITY

ज्ञान प्राप्ये लक्ष्य संधानम्

School of Basic & Applied Sciences

Class				**Bachelor of Computer Application (BCA)**
Semester/Year				**II YEAR**
Subject & Subject Code				**Internet of Things (IOTs) Lab (Elective-P)EU-S2-BCAC1R**
Max. Marks				**70 + 30 = 100**
Credit			**Total Credits**	
L	**T**	**P**	**4**	
0	**0**	**2**		

Course Outcome:

After completing this lab course, students will be able to:

1. Arduino /Raspberry Concept.
2. Knowledge of Digital sensors.
3. Uses of DHT 11 Sensors.
4. Knowledge of Bluetooth interface.

Practical List

1. To interface LED/Buzzer with Arduino/Raspberry Pi and write a program to turn on LED for 1 sec after every 2 sec.
2. To interface the Push button/Digital sensor (IR/LDR) with Arduino/Raspberry Pi and write a program to turn ON LED when push button is pressed or at sensor detection.
3. To interface DHT11 sensor with Arduino/Raspberry Pi and write a program to print temperature and humidity readings.
4. To interface moto using relay with Arduino/Raspberry Pi and write a program to turn ON motor when push-button is pressed.
5. To interface OLED with Arduino/Raspberry Pi and write a program to print temperature and humidity readings on it.
6. To interface Bluetooth with Arduino/Raspberry Pi and write a program to send sensor data to a smartphone using Bluetooth.
7. To interface Bluetooth with Arduino/Raspberry Pi and write a program to turn LED ON/OFF when '1'/'0' is received from a smartphone using Bluetooth.

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8. When a program on Arduino/Raspberry Pi upload temperature and humidity data to thing speak cloud.

9. Write a program on Arduino/Raspberry Pi to retrieve temperature and humidity data from thing speak cloud.

10. To install MySQL database on Raspberry Pi and perform basic SQL queries.

Text Books:-

- Vijay Madisetti and Arshdeep Bahga, "Internet of things (A Hand-on-Approach)" 1st Edition UniversalPress .
- HakimaChaouchi "The Internet of Things: Connecting Objects", Wiley publication.
- Charless Bell "MySQL for the Internet of things", A press publications.
- Francis dacosta "Rethinking the Internet of things: A scalable Approach to connecting everything", 1st edition, A press publications 2013.
- Book published by M.P. Granth Academy, Bhopal

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School of Basic & Applied Sciences

Class	**Bachelor of Computer Application (BCA)**
Semester/Year	**II YEAR**
Subject & Subject Code	**Optimization Techniques (Elective-II)EUS2-BCAC2G**
Max. Marks	**70**

Credit			**Total Credits**
L	**T**	**P**	**6**
0	**6**	**0**	

Course Outcome:

The course will enable the students to:

1. Formulate real life problems into linear programming problem.
2. Apply the simplex method to find an optimal vector for the standard linear programming problem and the corresponding dual problem.
3. Find optimal solution of transportation.
4. Formulate and solve linear programming model of two person zero sum game.
5. Solve nonlinear programming problems using Kuhn-Tuckerconditions.

Unit	**Syllabus**	**Periods**
UNIT - I	**Linear Programming Problem:** • Basie concepts of a linear programming problem • Simplex method and algorithm • Artificial variables technique • Two-phase method • Big-M method	8
UNIT - II	**Duality:** • Definition and formulation of the dual problem • Primal-dual relationships • Economic interpretation of the dual • Dual simplex Method • Sensitivity analysis	14
UNIT - III	**Transportation Problems:** • Mathematical model • Balanced and unbalanced problems • Degeneracy • Optimality conditions • Methods to find starting solution and optimal solution • Algorithm for solving transportation problem • Northwest-Corner method • Least cost method • Vogel approximation method for determination of starting basic solution	14

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UNIT - IV	**Network Analysis:** • Constraints in network • Construction of network • Critical Path Method (CPM) • PERT calculation • Resource leveling by network techniques • Advances of network (PERT/CPM)	12
UNIT - V	**Game Theory:** • Formulation of two person zero sum games • Solving two person zero sum games • Games with mixed strategies • Graphical solution procedure • Linear programming solution of games • Non-Linear programming techniques • Kuhn-Tucker conditions • Non-negative constraints.	12

Text Books :-

1. KantiSwarup, P.K. Gupta and Manmohan: Opertions Research, Sultan Chand and Sons, New Delhi, 2014.
2. Guillermo Owen: Game Theory, Emerald Publishing Limited, 4" edition, 2013.
3. S. D. Sharma: Operations Research, KedarNath Publication, 2012.
4. Nita H. Shah, Ravi M. Gor and HardikSoni: Operations Research, PHI Learning Pvt. Ltd., 2007.
5. Book published by M.P. Granth Academy , Bhopal

References Books:-

1. Mokhtar S. Bazaraa, John J. Jarvis and Hanif D. Sherali: Linear Programming and Network Flows, 2nd Ed., John Wiley and Sons, India, 2004.
2. F.S. Hillier and G.J. Lieberman:Introduction to Operations Research, 9th Ed., Tata McGraw Hill, Singapore, 2009.
3. Hamdy A. Taha:Operations Research, An Introduction, 8* Ed., Prentice-Hall India, 2006.
4. 4.Prem Kumar Gupta and D.S.Hira: Operations Research-An Introduction, S.Chand & SonsCompany Ltd.,New Delhi, 1995.

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EKLAVYA UNIVERSITY
ज्ञान प्राप्तये लक्ष्य संधानम्

School of Basic & Applied Sciences

Class	**Bachelor of Computer Application (BCA)**
Semester/Year	**II YEAR**
Subject & Subject Code	**E-Commerce (Elective-III)EUS2-BCAD1G**
Max. Marks	**70 + 30 = 100**

Credit			**Total Credits**
L	**T**	**P**	**6**
0	**6**	**0**	

Course Outcome:

The course will enable the students to:

1. To learn the fundamentals of E-Commerce and its process.
2. To understand the role of E-commerce in the present scenario along with the concepts of security and its applications.
3. To gain knowledge of e-commerce business needs and resources and match to technology considering human factors and budget constraints.
4. To apply knowledge of changing technology on traditional business models and strategy.
5. To have skills to Communicate effectively and ethically using electronic communication.

Unit	Syllabus	Periods
UNIT - I	**Introduction:** Brief history of e-commerce, Types, Advantages & Disadvantages of e-commerce, Elements of e-commerce, Principlesof e-commerce, Messaging and information distribution, Common service infrastructure, other key support layers.	10
UNIT - II	**EDI to e-commerce:** EDI-Origin, System approach and communication approach, Migration to open EDI-Approach, Benefits, Mechanics, E-com with WWW/Internet. E-Government- Concepts, Applications of G2C, G2B, G2G.	10
UNIT - III	**Electronic communication** PC and networking, Network topologies and communication media, E-mail, OSI and TCP/IP Models, LAN, WAN, MAN Internetworking- Bridges and gateways, Internet Vs Online services, Open vs. Closed Architecture, Controlled containedVs Uncontrolled contained, Metered Pricing Vs Flat pricing, Innovation Vs Control.	25
UNIT - IV	**WWW & Electronic Payment System**: Application- What is web, Why is the Web such a hit, The Web and E-Com, Concepts & Technology- Key concepts, Web Software development Tools. Electronic payment system- Overview, Electronic or digital cash, Electronic Checks , Online credit card based system, other Engineering financial instruments, Consumer legal and Business issues.	20

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UNIT - V	**Securitv and Application** Need of computer security, Specific intruder approaches, Security strategies, Cryptography, Public key encryption, Private key encryption, Digital signatures **Advertising on the internet**: Marketing, Creating a website. Electronic publishing issues, EP architecture, EP tools, Web page EP-Baseline issues, Application tools and publishing on the internet.	25

Suggested Digital Platforms, Web links-

1. https://onlinecourses.nptel.ac.in/nocl9inq54/preview
2. https://on1iriecouises.swayain2.ac.in/cecl9cm01/preview
3. https://www.couiseia.org/lectuie/innovative-entrepreneur/e-commeice-the-internet-as-a-selling-platform-DYSNa
4. https://www.mooc-list.corn/tags/e-cominerce-inarket
5. https://on1inecourses.swayam2.ac.in/nou21cm14/pieview
6. http://www.mphindigranthacademy.org/

References Books:-

1. ”Electronic Commerce” By Ravi Kalakota and Andrew B.Whinston.
2. ”Web Commerce Technologies Handbok”By Daniel Minoli& EmmaMinoli
3. ”E-Commerce ”By Dr.Varinder Bhatia
4. “Promise OfE-Governance” By M P Gupta
5. Book published by M.P. Granth Academy , Bhopal

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EKLAVYA UNIVERSITY
ज्ञान प्राप्ये लक्ष्य संधानम्

School of Basic & Applied Sciences

Class	**Bachelor of Computer Application (BCA)**
Semester/Year	**II YEAR**
Subject & Subject Code	**Organization Behaviour (Elective-IV)EUS2-BCAD2G**
Max. Marks	**70 + 30 = 100**

Credit			**Total Credits**
L	**T**	**P**	**6**
0	**6**	**0**	

Course Outcome:

The course will enable the students to:

1. Understand the effect of interpersonal behavior in anorganizational work-life
2. Understand perspective in diverse cultural environment.
3. Understand the principles of organizational humanbehavior with relevance to the Indian business context.

Unit	Syllabus	Periods
UNIT - I	Concept of Organizational Behavior, Evolution of OB, Contributing Disciplines to Organizational Behavior; Framework of OB, Challenges and opportunities in the field of OB.	10
UNIT - II	Individual Behavior, Personality, Perception, Social Perception and Impression Management, Attitude-characteristics, components, formation andmeasurement, Values, Learning and Re-enforcement.	15
UNIT - III	Leadership- Concepts and Theories of Leadership, Qualities of a good Leader. Group Dynamics- group formation, Nature of groups, Types of Group, Group Member Resources, Reasons of joining groups, Functions of group within organization.	20
UNIT - IV	Stress Management- Meaning, Causes, Effects and coping strategies for stress. World Stress, Concepts and theories of motivation.	10
UNIT - V	Organizational change, conflict and peer: Forces of change, planned change, resistance, approaches. Conflict management and negotiation techniques. Organization structure and personnel management.	25
UNIT - VI	International Dimensions of Organizational Behavior, Equal Employment opportunities, Organizational Culture, Managing Cultural Diversity, Learning Organization. Case Studies.	10

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Text Books :-

- Udai Pareek, Understanding Organization Behaviour, 3'° Ed., Oxford University Press, 2011
- Robbins S. P., Organizational Behaviour, 7" Ed., New Delhi, PHI, 1996
- Huse, F E and Cunnings T G, Organization Development and Change, 3'd Ed., New York. West, 1985
- Shekcharam Uma, Organizational Behaviour, Text & cases, New Delhi THM, 1989.
- Singh Dalip, Emotional Intelligence at work, Response Books, Sage Publication, Delhi 2001.
- Book published by M.P. Granth Academy , Bhopal

References Books:-

- Luthans Fred., "Organizational Behaviour", McGraw Hill.
- Hellriegel, Slocum and Woodman, Organizational Behavior, South-Western, Thomson Learning, 9th edition, 200 I.
- Behavior in Organizations, Jerald Greenberg, 8ih ed, Pearson Education.
- Arnold, John, Robertson, Ivan t. and Cooper, Cary, I., "Work psychology: understanding humanbehavior in the workplace", Macmillan India Ltd., Delhi.
- Dwivedi, R. S., "Human relations and Organizational Behaviour: a global perspective", Macmillan
- India Ltd., Delhi.

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EKLAVYA UNIVERSITY
ज्ञान प्राप्ये लक्ष्य संधानम्

School of Basic & Applied Sciences

Class	**Bachelor of Computer Application (BCA)**
Semester/Year	**II YEAR**
Subject & Subject Code	**Web Development using PHP & MySQL** **EUV2-COS-WEBT (Web Designing)**
Max. Marks	**70+30=100**

Credit			**Total Credits**
L	**T**	**P**	**4**
0	**2**	**2**	

Course Outcome:

After completion of course, Students will be able to :-

1. Discover how the web works, What makes web sites work.
2. Implement simple and impressive design techniques. from basics to advanced-so as to focus on goal oriented and user centric designs.
3. Use Server side scripting.
4. Implement concept of data persistence.
5. Apply skills to program logic using PHP and handle data using MySQL.
6. Develop dynamic websites using PHP & MySQ.

Unit	Syllabus	Periods
UNIT - I	**Basics of PHP**: Introduction to PHP, PHP features, installation of XAMPP/WAMP, Benefits of using PHP MYSQL, Server Client Environment, Web Browser, Web Server Installation & Configuration Files. OOPs with PHP, language basics, syntax, comments, variables, constants and data types, expressions and operators, flow control statements, looping structures, Arrays including html code in PHP, Embedding PHP in web pages.	6
UNIT - II	**Functions & Strings in PHP** : Defining a functions, calling a functions, variable scope, function parameters, return values User Defined function, System Defined functions, Parameterized Function, Date& Time Functions, Hash Function, Mail Function, predefined functions. **Strings**: Creating & accessing string, searching and replacing strings, encoding and escaping, comparing strings formatting strings, regular expression.	6
UNIT - III	**Data & File Handling**: PHP forms $-GET, $-POST, $-REQUEST, $ FILES, $-SERVER, $GLOBALS, $ENV, Input/output controls, validation, Cookies and Sessions. **File Handing**: File and directory, Open close, read, write, append, delete, uploading and downloading files. File exists, File Size, Rename, Reading and display all/selected files present in a directory	6

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UNIT - IV	**MySQL an Overview**: Introduction, What is a Database, Understanding an RDBMS, Tables, Record & Fields, SQL Language. **Working with php my admin** : Creating and using a database, Selecting a database, creating/dropping a table, loading data into a table, Retrieving information from a table, selecting all data, selecting particular rows, selecting particular columns, writing queries, sorting date, calculations, working with NULL values, pattern matching, counting rows using more than one tables, using table and column aliases.	6
UNIT - V	**MySQL Databases in PHP**: Introduction, connecting to a MySQL database, Querying the database, Retriving and displaying the results, modifying data and deleting data through front end Designing applications using PHP & MySQL.	6
Practical		
1. Create a simple HTML form and accept the user name and display the name through PHP echo statement. 2. Write a PHP script to demonstrate arithmetic operators, comparison operator, and logical operators. 3. Write PHP Script to input marks, generate result and display grade.. 4. Write PHP Script for addition of two 2x2 matrices. 5. Write PHP Script to obtain factorial of a number using function. 6. Write PHP Script to demonstrate string, date and math function. 7. Create student registration form using text box, check box, radio button, select, submit button. and display user inserted value in new PHP page. 8. Write two different PHP script to demonstrate passing variable through a URL. 9. Write two different PHP script to demonstrate passing variable with sessions. 10. Write two different PHP script to demonstrate passing variable with cookies.. 11. Write a program to keep track of how many times a visitor has loaded the page. 12. Write two different PHP script to demonstrate exceptional handling. 13. Write a PHP script to connect MySQL server from your website. 14. Create EMP table with emp-no, emp-name, designation and salary. Write a program to read employee information from EMP table and display all this information in php page. 15. Create customer table in mysql with cust-no. cust-name, item-purchased, and mob-no, insert 10 records into it. 16. Write a program to read customer information from customer table and display all these information in table format on php page. 17. Design a web form in php to input values for the customer record and insert the record in customer table as a tuple. 18. Design an "update" web form to edit name of customer to "Bob" with cust-no-1. 19. Design a "delete" web form to delete record with cust-no=3.. 20. Create a dynamic web site using PHP and MySQL.		30

Text Books :-

1. Head First PHP & MySQL, Lynn Beighley & Michael Morrison, O'Reilly.
2. PHP: A Beginner's Guide, Vikram Vaswani, Mc Graw-Hill Edition.
3. Learning PHP, MySQL, JavaScript, & CSS: A Step-by-Step Guide to Creating Dynamic Websites. Robin Nixon, O'reilly
4. PHP and MySQL Web Development, luke welling, addison-Wesley
5. The joy of PHP, Alan Forbes, Break Check LLC

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