ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

IVSEMESTER **COMPUTER SCIENCE**  TIME:4HRS/WEEK

COM 4304(3) **DATABASE MANAGEMENTSYSTEMS**  MARKS:100

20-21 admitted batch-“20AH” **SYLLABUS**

**COURSE OBJECTIVES:**

To enable the students to:

* Understand the different issues involved in the design and implementation of a database system.
* To understand and use data manipulation language to query, update, and manage a database.
* To introduce the concepts of transactions and transaction processing.

**COURSE OUTCOMES:**

Upon successful completion of the course, a student will be able to:

* Develop and design database application and therefore enhance entrepreneurship skills.
* Design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data.
* Design and implement a Database Schema for a given Problem-domain.
* Apply Normalization Techniques on given Database Design to avoid Anomalies.
* Understand various transaction processing and concurrency control mechanisms.

1. **OVERVIEW OF DATABASE MANAGEMENT SYSTEM:**

Introduction, Data andInformation, Database, Database Management System, Objectives of DBMS, Evolution of Database Management System, Classification of Database Management System.

1. **FILE-BASED SYSTEM :**

File Based System. Drawbacks of File-Based System, DBMS Approach, Advantage of DBMS, Data Models, Components of Database System, Database Architecture, DBMS Vendors and their products.

1. **ENTITY-RELATIONSHIP MODEL:**

Introduction, The Building Blocks of an Entity-Relationship, Classification of Entity Set, Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, Aggregation and Composition, CODD’s Rules, Relational Data Model, Concept of Relational Integrity.

1. **STRUCTURED QUERY LANGUAGE :**

Introduction, History of SQL Standards, Commands in SQL, Data types in SQL, Data Definition Language (DDL),Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

1. **PL/SQL:**

Introduction, Structure of PL/SQL,PL/SQL Language Elements, Data Types, Control Structure, Steps to Create a PL/SQL Program, Iterative Control Cursors, Steps to Create a Cursor, Procedure, Functions, Packages, Exceptions Handling, Database Triggers, Types of Triggers.

**REFERENCE BOOKS:**

ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

IVSEMESTER **COMPUTER SCIENCE**  TIME:2HRS/WEEK

COM 4354 (2) **DATA BASE MANAGEMENT SYSTEMS LAB**  MARKS:50

20-21 admitted batch-“20AH” **SYLLABUS**

**OBJECTIVES:**

To enable the students to:

* Describe the basics of SQL and construct queries using SQL.
* Know query languages associated with relational models

**COURSE OOUTCOMES:**

After Completion of this course the student would be able to:

* Design and implement a database schema for a given problem.
* Design queries using SQL.
* Apply PL/SQL for processing database.

1. Create tables department and employee with required constraints.

2. Initially only the few columns (essential) are to be added. Add the remaining columns separately by using appropriate SQL command.

3. Basic column should not be null

4. Add constraint that basic should not be less than 5000.

5. Calculate hra, da, gross and net by using PL/SQL program

6. The percentage of hra and da are to be stored separately.

7. When the da becomes more than 100%, a message has to be generated and with user permission da has to be merged with basic.

8. Empno should be unique and has to be generated automatically.

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