Database Management System Lab

General Course Information

Course Code: DCA-26-P Course Credits: 2 Mode: Lab practice and assignments Maximum Marks: 100 Minimum Pass marks: 40	**Course Assessment Methods (internal: 30; external: 70)** **Note:** The actual experiments/assignments will be designed by the course coordinator. Oneassignment should be designed to be done in groups of two or three students. The assignments must meet the objective of the course and the levels of the given course outcomes. The list of assignmentsand schedule of submission will be prepared by the course coordinator at the beginning of the semester.

About the Course: This lab. course on DBMS involves a rigorous training on Oracle programming. It provides a strong formal foundation in database concepts, technology and practice to the students to groom them into well-informed database application developers. The objective of the lab course is to develop proficiency in the execution of commands of the database design and query using Oracle.

Course Outcomes: By the end of the course students will be able to:

CO1**. Implement** database problems using DML/DDL commands.
CO2. **Enforce integrity** constraints on a database using a state-of-the-art RDBMS.
CO3. **Analyse** the design of a relational database.
CO4. **Plan** a relational database for a given schema.
CO5. **Create** lab assignment record that includes problem definitions, solutions, results and conclusions.
CO6. **Demonstrate** ethical practices, self-learning and team spirit.

List of experiments/assignments:

1. Use oracle software and login with valid userid and password. Explore its GUI and practice some basic commands of it.
2. Three assignments related to creation of database with tables having different fields and data types.
3. Two assignments on the creation of table with different types of constraints.
4. Two assignments on insert, delete and modify records from the tables.
5. Two assignments on modifying the table using the alter command.
6. Two assignments on exploring select statement using various clauses like where, order by, group by, having and aggregate functions.
7. Two assignments on the use of set operations to query the tables.
8. Two assignments on creating joins and views on the tables.
9. One assignment on generating sub-queries.

Note: The actual experiments/assignments will be designed by the course coordinator. One assignment should be designed to be done in groups of two or three students. The assignments must meet the objective of the course and the levels of the given course outcomes. The list of assignments and schedule of submission will be prepared by the course coordinator at the beginning of the semester.

Python Programming Lab

General Course Information

Course Code: DCA-27-P Course Credits: 2 Mode: Lab practice and assignments Maximum Marks: 100 Minimum Pass marks: 40	**Course Assessment Methods (internal: 30;external: 70)** The internal and external assessment is based on the level of participation in lab. sessions and the timely submission of lab experiments/assignments, the quality of solutions designed for the assignments, theperformance in VIVA-VOCE, the quality of lab. File and ethical practices followed. The internal examination is conducted by the course coordinator. The external examination is conducted by external examiner appointed by the Controller of Examination in association with the internal examiner appointed by the Chairperson of the Department.

Pre-requisites: Basics Programming skills e.g. C, C++.

About the Course:

Python is a scripting programming language known for both its simplicity and wide breadth of applications. For this reason, it is considered one of the best languages for beginners. Used for everything from web development to scientific computing Python is referred to as a general-purpose language by the greater programming community. The major objective of Python language is to make the students solve real word problem efficiently using python library.

Course Outcomes:

By the end of the course students will be able to:

CO1. **Implement** solutions to the given assignments in Python.
CO2. **Use** various Python packages for solving different programming problems.
CO3. **Devise** solutions for complex problems of data analysis and machine learning.
CO4. **Evaluate** the output of data analysis and machine learning models.
CO5. **Create** lab records of the solutions for the given assignments.
CO6. **Demonstrate** use of ethical practices, self-learning and team spirit.

List of experiments/assignments

1. Install Python and explore various popular IDE like IDLE, PyCharm, and Anaconda.
2. Assignments to perform various number operations like
   a) Find maximum from a list of numbers
   b) GCD of two number
   c) Square root of a number
   d) Check number is prime or not.
   e) Print first N prime numbers
   f) Remove duplicate numbers from list
   g) Print the Fibonacci series.
3. Assignments to perform various operations on Strings like creation, deletion,concatenation.
4. Create a List L = [10, 20, 30]. Write programs to perform following operations:
   a) Insert new numbers to listL
   b) Delete numbers from listL.
   c) Sum all numbers in list L.

d) Sum all prime numbers in listL.
e) Delete the listL.

5. Create a Dictionary D= {‘Name’: ‘Allen’, ‘Age’: 27, 5:123456}.
   Write programs to perform following operations:
   a) Insert new entry inD.
   b) Delete an entry fromD.
   c) Check whether a key present in D.
   d) Update the value of akey.
   e) Clear dictionaryD.
6. Two assignments on Sets to perform various operation like union, intersection, difference etc.
7. Two assignments related to searching operation like linear search, binary search.
8. Three assignments related to sorting like selection sort, bubble sort, insertion sort.
9. Demonstrate the use of dictionary for measuring student marks in five subjects and you have to find the student having maximum and minimum average marks.
10. Two assignment on usage of different available packages like random package to perform
    a) Print N random numbers ranging from 100 to500.
    b) Print 10 random strings whose length between 3 and5.
11. Two assignments on usage of package such as Numpy, Pandas.

Note: The actual experiments/assignments will be designed by the course coordinator. One assignment should be designed to be done in groups of two or three students. The assignments must meet the objective of the course and the levels of the given course outcomes. The list of assignments and schedule of submission will be prepared by the course coordinator at the beginning of the semester.