

# Usman Institute of Technology

## Introduction to Database Systems (CS311)

### Course Project

Fall 2021

Software Engineering Section SE-B

Student Information System

### Part 3

**Question:** Front End connectivity with Oracle Database

a) Show connectivity of database base to the front end (application).

The screenshot displays a web application titled "Student Information System" with a grey background. It features three distinct forms, each with a red header and white input fields. The "Student Details" form includes fields for Student ID, Gender, E-MAIL, ADDRESS, DOB, Major, Semester, Admission, and Department, with "INSERT" and "ViewStudent" buttons below. The "Teacher Details" form includes fields for Teacher ID, NAME, Teacher NAME, Department, and Course, with "INSERT" and "ViewTeacher" buttons below. The "Course Details" form includes fields for Course ID, CourseName, and CreditHours, with "INSERT" and "ViewCourse" buttons below. The application is presented in a browser window with a standard address bar and tabs.

Student Details	
Student ID:	<input type="text"/>
Gender	<input type="text"/>
E-MAIL:	<input type="text"/>
ADDRESS:	<input type="text"/>
DOB:	<input type="text"/>
Major:	<input type="text"/>
Semster:	<input type="text"/>
Admission:	<input type="text"/>
Department:	<input type="text"/>
<input type="button" value="INSERT"/> <input type="button" value="ViewStudent"/>	

Teacher Details	
Teacher ID:	<input type="text"/>
NAME:	<input type="text"/>
Teacher NAME:	<input type="text"/>
Department	<input type="text"/>
Course:	<input type="text"/>
<input type="button" value="INSERT"/> <input type="button" value="ViewTeacher"/>	

Course Details	
Course ID	<input type="text"/>
CourseName:	<input type="text"/>
CreditHours	<input type="text"/>
<input type="button" value="INSERT"/> <input type="button" value="ViewCourse"/>	

b) List the language, technologies and framework used for both front and backend.

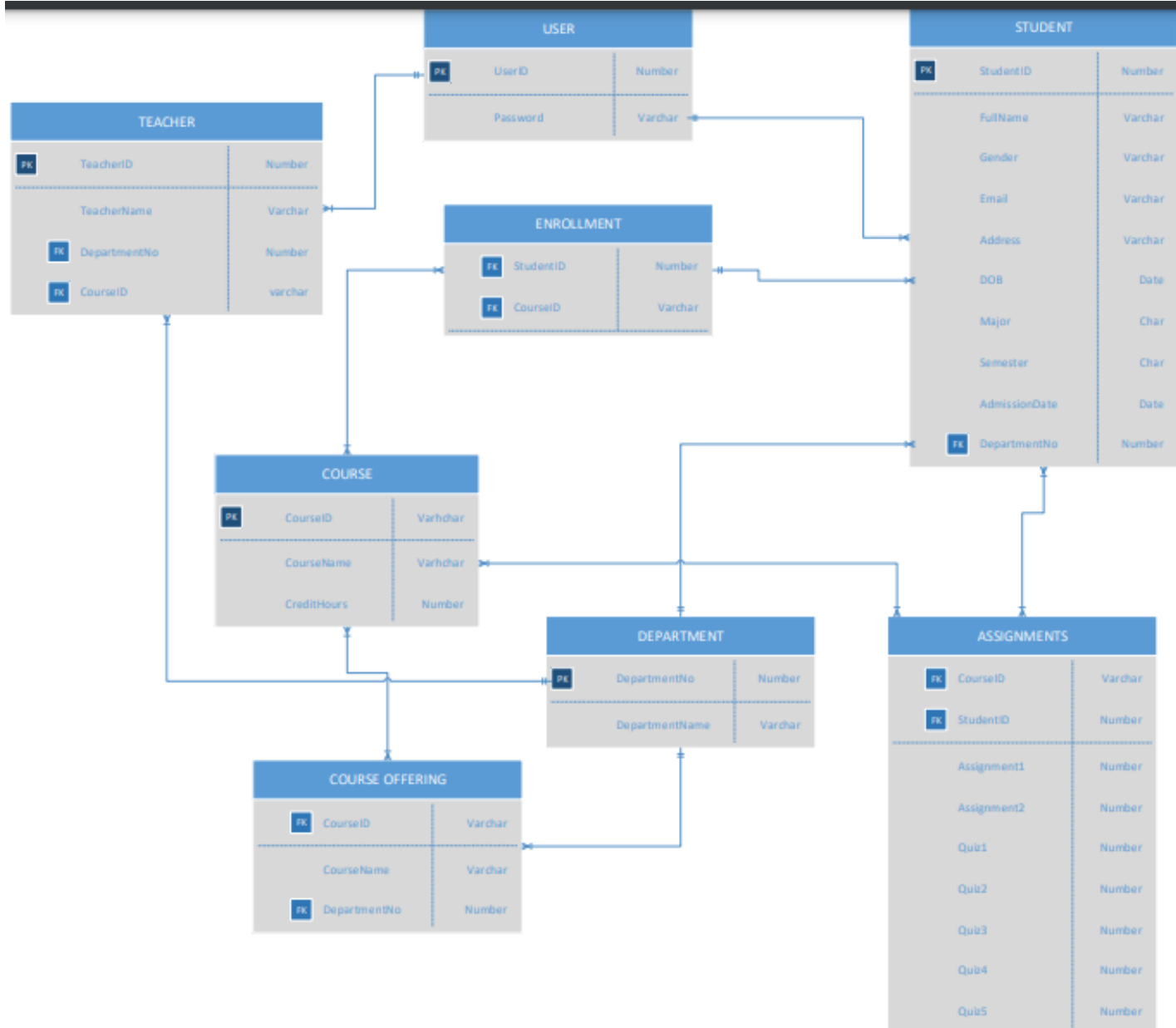
**Languages:**

- 1- Python (tkinter) Front-end.
- 2- Structured Query Language Back-end.

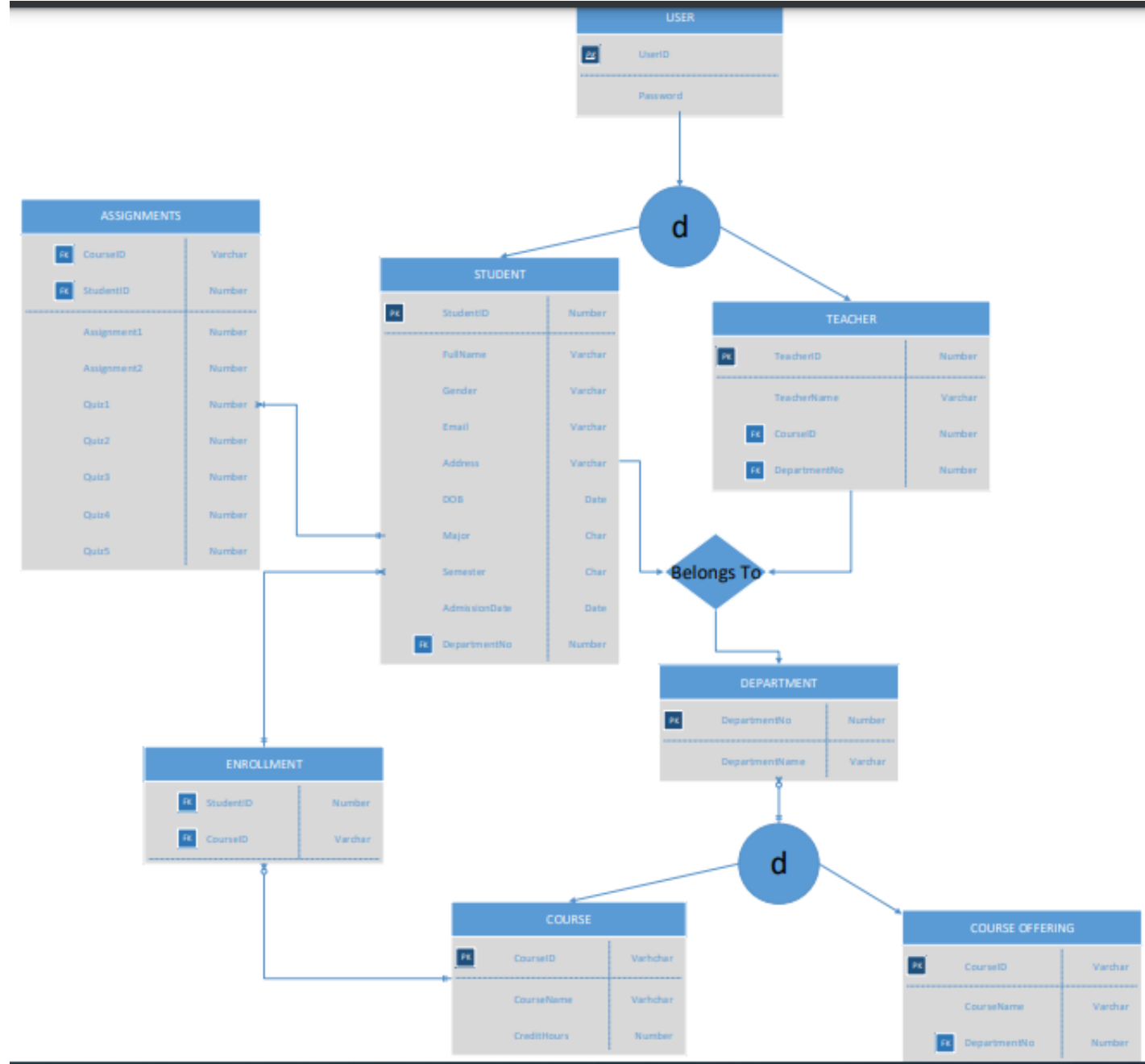
**Technologies:**

- 1- IDLE

c) Draw finalized Entity relationship diagram.



d) Draw Enhanced Entity relationship diagram.



- e) Prepare video to show the working of your application. By showing the insert, delete etc. SQL statements to the database from front end.
- f) Upload your complete project in .zip file. Also include readme file for installation and usage.

**Note:** Attached all files including MS Visio, SQL scripts, MS Word, Video etc.

# README FILE

1-Import module for GUI for showing fetched data from the Oracle Database

Module name: tkinter

Syntax: `from tkinter import *`

2-Import module for Oracle Connection with Python code

Module name: **cx\_Oracle**

Syntax: **`import cx_Oracle`**

3-After step 2, Database connection will be established successfully.

Syntax for establishing connection:

`Conn = cx_Oracle.connect('username/password@localhost/sid')`

4-Now, Tables can be fetched from the database, this data will be displayed through Python GUI

5-Now create a schema in Oracle Sql Developer Software.

Database Schema contains following tables.

- 1- Department.
- 2- Course.
- 3- CourseOffering.
- 4- Teacher.
- 5- Student.
- 6- Assignment.
- 7- Users.
- 8- Enrollment.

Values will be inserted through GUI.