Simulation of ORM

ORM (Object Relational Mapping) is one of the preferred methods of interacting with a database in a web or desktop application. In this project we are trying to simulate this ORM using python and MYSQL or any database as backend and perform CRUD operation on it. The details of the requirement are as mentioned below. As a demo we are using students table

Students

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Sample | Datatype | Constraint |
| studid | stud001 | string(7) | Primary Key |
| studname | Billy Roy | string(50) | Not Null |
| class | Xth Std | string(25) | Not Null |
| Age | 14 | integer | Not Null |
| School | DPS | string(25) | Not |

The requirement has to be developed as mentioned in the diagram below

Python App

Database

Module01

Module02

Communication to the database will be only through Module01 which will share the database information like the tables or schema that is present in the database. Module02 will have methods for CRUD Operations and will acquire the DB connection from Module01. Python application that is developed will interact only with Module02 for any DB requirement. It’s a plain desktop application that has to be developed, and the interaction is a shown below.

Screen01

1. Read Students Details
2. Add New Student
3. Update Student
4. Remove Student
5. Exit

If choice is 1 then the below screen is to be displayed.

1. Display in Table format
2. Display in List format
3. Back to previous menu

If choice is 1 in the above screen, then the student’s details should be displayed in the form of a table. If choice is 2 then the student’s details should be displayed in list format and 3 to exit from the current menu. Choice 1 and 2 should use a decorator to display the data in table format or list format and the decorator code should be implemented in Module02

If the choice is 2 in the main screen then we need to add a new student.

Studid :

Studname:

Age:

Class:

School:

Once the school details entered and return key is entered then the data should be added into the table and return back to the main screen. If the choice is 3 to update or modify the existing data then the below screen should be displayed

Enter the Student ID to be modified:

10

Enter the field to be modified Studname, Age, Class, School:

School

10

Accept the necessary field

School : National Public School

Return back to the main menu

If the choice is delete then accept the Student ID and delete the record and display a message “Record deleted successfully”, if exits else display “Record does not exist” and return back to the main menu.

You have the flexibility to choose the necessary DB (mysql, oracle, sqlserver, postgres). Provide necessary comments in the code for the functionality and the classes implemented. Participation of all members is important.