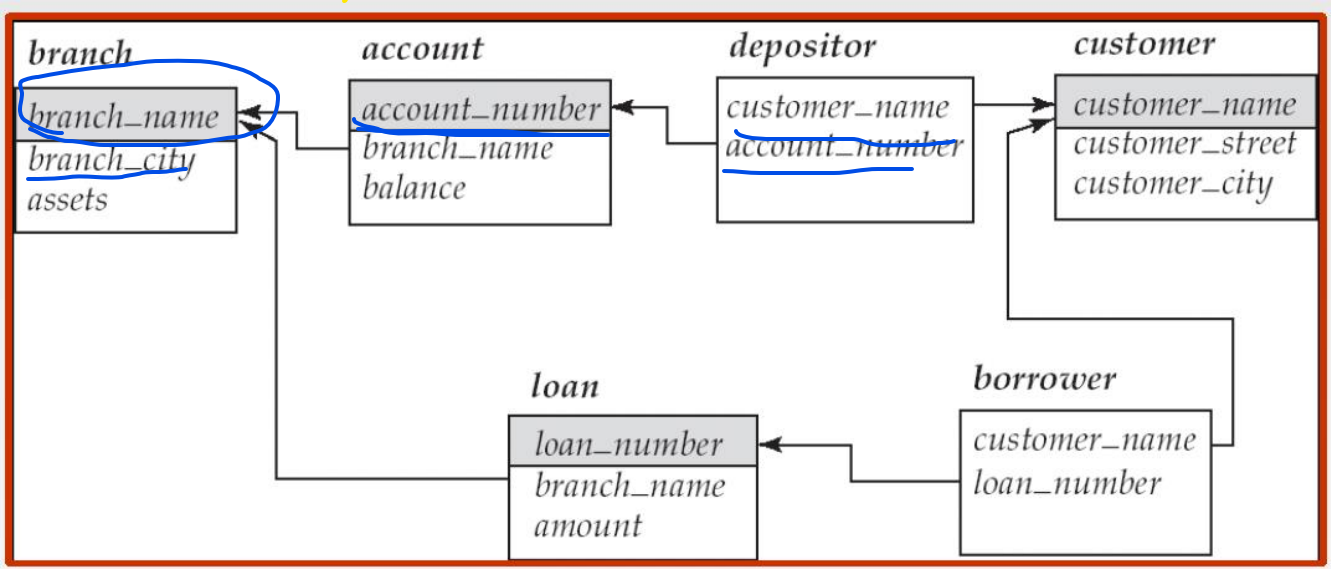
CSE250 Database Management System
Winter Semester 2021
Assignment-1

Submission Date : February 10, 2021

Instructions for Submission:

You will be uploading your assignment in a single word file on LMS. In this word file, paste answer of the query below the respective question along with required screenshot.

Following is a Bank Schema (Tables and Relationships). Create all the tables with appropriate Primary and Foreign keys.



Answer the following queries (1 to 9) using "Alter Table" command.

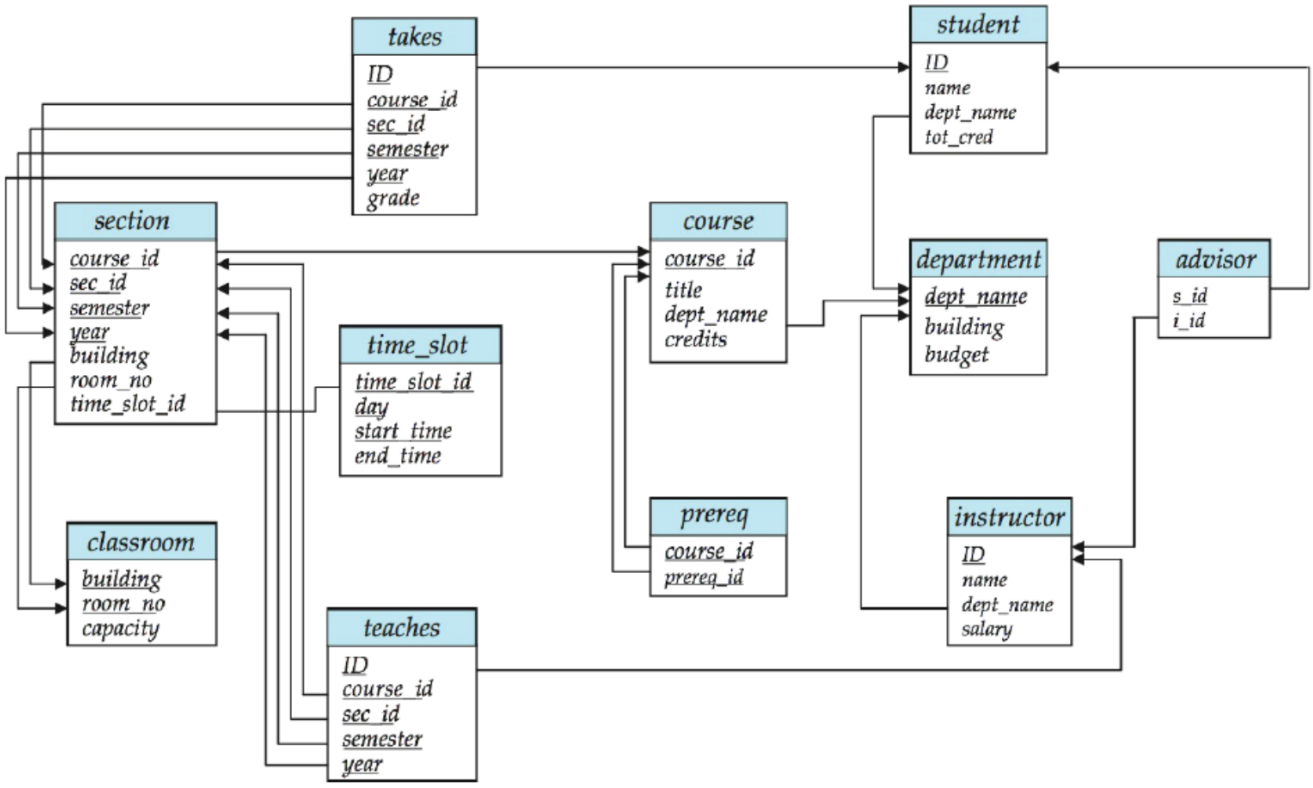
1. Increase the size of branch_name field.
2. Add constraint to check whether balance is more than zero.
3. Add a column loan_taken_date in loan table.
4. Add default constraint on loan_taken_date to insert current date.
5. Drop foreign key constraint from loan_number field of borrower table.

6. Rename column loan_number of borrower table as “loan_id”.
7. Add a field “Aadharid” with unique constraint in customer table.
8. Add “Not Null” constraint on loan_number field of borrower table.
9. Drop primary key constraint from borrower table.
10. Rename table account to bank_account.

Write select statements to answer the following questions.

1. Display names of the customers who have account in the city where they live.
2. Display details of customers who are not borrower.
3. Display customer details who have taken loan more than 3 times.
4. Display pairs of customers who live in the same city.
5. Display details of the customers whose name is the longest.
6. Display details of borrowers who have taken loan from 'Ahmedabad' branch.
7. Display details of borrowers who have taken total loan of more than Rs. 50,00,000.
8. Display total assets of all the branches.
9. Display details of customers who are depositors.
10. Display left outer join of customer and depositor table.
11. Display right outer join of account and depositor table.
12. Display account number in which balance is minimum.
13. Display account number in which balance is second highest.
14. Display branch name, branch city, account number, customer name and customer city in ascending order of customer city and descending order of branch city.
15. Display total no. of customers in each city.
16. Display city wise total assets in descending order of total assets.
17. Display borrower names with total loan amount taken.
18. Display details of the customers who are depositors as well as borrower.
19. Display inner join of customer, borrower, loan and branch.
20. Display union of branch and account. (Use “union” operator)

Schema Diagram for University Database



Create above tables with appropriate Primary Keys and Foreign Keys. Insert at least 5 records in each table. Answer the following questions.

1. Create following check constraints. (You may add constraints either at the time of table creation or alter table if the table is already created.)
   i. Credits in course table should be minimum 1.5 and maximum 4.5
   ii. Budget in department table can't exceed Rs. 10,000.
   iii. Salary in instructor table should be more than 0.
2. Create following default constraints.
   i. 1.5 credits in course table.
   ii. 120 capacity in classroom table.
   iii. 2019 (Don't set value directly. Extract year from current date)
3. Create unique constraints for following fields.
   i. Dept_name in student table.
   ii. Dept_name in instructor table.
4. Create not null constraints for following fields.

i. Capacity in classroom table.
ii. Year in teaches table.

5. Create a new course “CS-001”, titled “Weekly Seminar”, with 2 credits.
6. Create a section of the course “CS-001” in Autumn 2009, with sec_id of 1.
7. Enroll every student in the Comp. Sci. department in section 1.
8. Delete enrollment in section 1 where student name is Chiral.
9. Delete all “takes” tuples corresponding to any section of any course with the word “database” as a part of the title, ignore case when matching the word with the title.
10. Drop “foreign key” constraint from “prereq” table.
11. Add one field sr_no “prereq” table and make it a primary key.
12. Rename “name” field of student table to “std_name”.
13. Drop unique constraint from “dept_name” field of instructor table.
14. Drop not null constraint from “capacity” field of “classroom” table.

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