University of Makeni

Sylvanus Koroma Campus (SKC)

Yoni, Makeni

Computer Science Department

Year-3 First Semester I-grade Exam

Database I

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Time: 3 hrs **Maximum marks: 100**

Section A 15 Marks

NOTE: Create Database ITRE

1. Write a SQL statement to create a table named countries including columns country_id,country_name and region_id and make sure that no duplicate data against column country_id will be allowed at the time of insertion.
2. Write a SQL statement to create the structure of a table dup_countries similar to countries.
3. Write a SQL statement to create a table named jobs including columns job_id, job_title, min_salary and max_salary, and make sure that, the default value for job_title is blank and min_salary is 8000 and max_salary is NULL will be entered automatically at the time of insertion if no value assigned for the specified columns..
4. Write a SQL statement to create a table job_history including columns employee_id, start_date, end_date, job_id and department_id and make sure that, the employee_id column does not contain any duplicate value at the time of insertion and the foreign key column job_id contain only those values which are exists in the jobs table
5. Write a SQL statement to create a table named job_histry including columns employee_id, start_date, end_date, job_id and department_id and make sure that the value against column end_date will be entered at the time of insertion to the format like '--/--/----'.
6. Write a SQL statement to create a table employees including columns employee_id, first_name, last_name, email, phone_number hire_date, job_id, salary, commission, manager_id and department_id and make sure that, the employee_id column does not contain any duplicate value at the time of insertion and the foreign key columns combined by department_id and manager_id columns contain only those unique combination values, which combinations are exists in the departments table.

Assume the structure of departments table below.

```
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| DEPARTMENT_ID   | decimal(4,0) | NO   | PRI | 0       |       |
| DEPARTMENT_NAME | varchar(30)  | NO   |     | NULL    |       |
| MANAGER_ID      | decimal(6,0) | NO   | PRI | 0       |       |
| LOCATION_ID     | decimal(4,0) | YES  |     | NULL    |       |
```

7. Create the table location as shown below

```
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| LOCATION_ID    | decimal(4,0) | YES  |     | NULL    |       |
| STREET_ADDRESS | varchar(40)  | YES  |     | NULL    |       |
| POSTAL_CODE    | varchar(12)  | YES  |     | NULL    |       |
| CITY           | varchar(30)  | YES  |     | NULL    |       |
| STATE_PROVINCE | varchar(25)  | YES  |     | NULL    |       |
| COUNTRY_ID     | varchar(2)   | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
```

Section B: Insertion 15 Marks

1. Write a SQL statement to insert 5 records with your own values, into the tables you created in section A against each columns.

   NOTE:

   - Please respect all constrains.

Section C: Update 10 Marks

NOTE: Call the Examiner for this section.

Five (5) Oral Question from the instructor

Section D 10 Marks

1. Write a SQL statement to rename the table countries to country_new
2. Write a SQL statement to add a column region_id to the table locations.
3. Write a SQL statement to add a columns ID as the first column of the table locations.
4. Write a SQL statement to add a column region_id after state_province to the table locations.

5. Write a SQL statement change the data type of the column country_id to integer in the table locations.
6. Write a SQL statement to drop the column city from the table locations.
7. Write a SQL statement to change the name of the column state_province to state, keeping the data type and size same.
8. Write a SQL statement to add a primary key for the columns location_id in the locations table.

Section E 15 Marks

NOTE: call the examiner to view queries answers and grade you instantly

1. Write a query to display the names (first_name, last_name) using alias name “First Name", "Last Name"from the employees table.
2. Write a query to get all employee details from the employee table order by first name, descending.
3. Write a query to get the total salaries payable to employees.
4. Write a query to get the maximum and minimum salary from employees table.
5. Write a query to get the number of employees working with the company.
6. Write a query to display the first_name of all employees who have both "b" and "c" in their first name
7. Write a query to list the number of jobs available in the employees table

Section F Joins 15 Marks

1. Write a query to find the addresses (location_id, street_address, city, state_province, country_name) of all the departments Hint : Use NATURAL JOIN.
2. Write a query to find the name (first_name, last name), department ID and name of all the employees.
3. Write a query to find the name (first_name, last_name), job, department ID and name of the employees who works in <country name or city>.
4. Write a query to find the employee id, name (last_name) along with their manager_id and name (last_name).
5. Write a query to get the department name and number of employees in the department.