Bahria University, Islamabad Campus
Department of Computer Science
Mid Term Examination
Class & Section: BS(CS)
(Spring 2024 Semester)
Paper Type: Practical

Course:	**Introduction to Database Systems**	Date: 29/03/2024
Faculty's Name:	Ms. Sara Durrani	Max Marks: 20
Time Allowed:	60 mints	Total Pages: (2)

INSTRUCTIONS:

1. This is closed book exam. Communication devices and any written material is strictly prohibited.
2. All questions are compulsory.
3. **Paste Codes and output screenshots in Word File having your Reg. No. as title.** (e.g., BSE21101-Arslan).

Student's Name: Saad Ahmad Enroll No: 01-134222-130
(USE CAPITAL LETTERS)

Part 1 (CLO-1)(Marks:10)

Question No. 1

Consider the table, create it and attempt these queries attach screenshots and show results:

ID	Name	Date
1	John	2023-05-10
2	Alice	2024-01-15
3	Bob	2022-11-20
4	Kabir	2023-09-08

```
SELECT * FROM Info;
```

	ID	Name	Date
1	1	John	2023-05-10
2	2	Alice	2024-01-15
3	3	Bob	2022-11-20
4	4	Kabir	2023-09-08

1. Retrieve the last two characters of each name.

```
SELECT SUBSTRING(Name,LEN(Name)-1,LEN(Name)) As 'Last 2 characters' FROM info;
```

	Last 2 characters
1	hn
2	ce
3	ob
4	ir

2. Determine the number of days between the current date and the dates in the table.

```
SELECT DATEDIFF(Day,Date,Current_timestamp) AS 'No of Days' FROM Info;
```

	No of Days
1	324
2	74
3	495
4	203

3. Calculate the age of each individual based on their birthdate, then sort the results by age in descending order.

```
SELECT Name,DATEDIFF(Year,Date,Current_Timestamp) AS 'Age' FROM Info Order By
DATEDIFF(Year,Date,Current_Timestamp) DESC;
```

	Name	Age
1	Bob	2
2	Kabir	1
3	John	1
4	Alice	0

4. Find the length of each name in the table.

```
SELECT Name,LEN(Name) AS 'Length' FROM Info;
```

	Name	Length
1	John	4
2	Alice	5
3	Bob	3
4	Kabir	5

5. Identify names containing the letter 'a'.

```
SELECT Name FROM Info WHERE Name LIKE '%a%';
```

	Name
1	Alice
2	Kabir

Part 2 (CLO-2)(Marks:10)

Question No. 2

Using the given table write the following SQL queries:

Emp_id	Emp_name	Dept_no	Job_title	salary	Hire_date	Manager_id
1	John	10	Manager	5000	2010-05-10	NULL
2	Alice	20	Clerk	3000	2011-07-15	1
3	Bob	10	Analyst	4500	2012-08-20	1
4	Sarah	20	Manager	6000	2013-02-05	NULL
5	Tom	30	Clerk	2800	2010-12-30	4
6	Emily	30	Analyst	5200	2011-10-25	4
7	Mike	10	Manager	5500	2012-04-18	NULL

```
SELECT * FROM Employee;
```

	Emp_id	Emp_name	Dept_no	Job_title	Salary	Hire_date	Manager_ID
1	1	John	10	Manager	5000	2010-05-10	NULL
2	2	Alice	20	Clerk	3000	2011-07-15	1
3	3	Bob	10	Analyst	4500	2012-08-20	1
4	4	Sarah	20	Manager	6000	2013-02-05	NULL
5	5	Tom	30	Clerk	2800	2010-12-30	4
6	6	Emily	30	Analyst	5200	2011-10-25	4
7	7	Mike	10	Manager	5500	2012-04-18	NULL

1. Determine the number of employees reporting to each manager without listing them.

```
SELECT COUNT(Emp_id) AS 'Employees reporting to each manager' FROM Employee
WHERE Manager_ID IS NOT NULL Group BY Manager_ID;
```

	Employees reporting to each manager
1	2
2	2

2. Write a query to display the total number of employees in department no. 20 and 30 combined.

```
SELECT Count(Emp_id) AS 'Total' FROM Employee WHERE Dept_NO IN(20,30);
```

	Total
1	4

3. Show the total number of unique job titles in the organization.

```
SELECT Count(Distinct Job_title) AS 'Unique Job Titles' FROM Employee;
```

	Unique Job Titles
1	3

4. Display the manager number and the salary of the highest paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the maximum salary is less than $10,000. Sort the output in descending order of salary.

```
SELECT MAX(Salary) AS 'Highest Salary',manager_id FROM Employee WHERE
Manager_id IS NOT NULL  GROUP BY Manager_id Having MAX(Salary) > 10000 ORDER BY
MAX(Salary) DESC;
```

Highest Salary	manager_id

```
use [MidTerm_01-134222-130];
SELECT * FROM Info;
SELECT SUBSTRING(Name,LEN(Name)-1,LEN(Name)) As 'Last 2 characters' FROM info;
SELECT DATEDIFF(Day,Date,Current_timestamp) AS 'No of Days' FROM Info;
SELECT Name,DATEDIFF(Year,Date,Current_Timestamp) AS 'Age' FROM Info Order By
DATEDIFF(Year,Date,Current_Timestamp) DESC;
SELECT Name,LEN(Name) AS 'Length' FROM Info;
SELECT Name FROM Info WHERE Name LIKE '%a%';
SELECT * FROM Employee;
SELECT COUNT(Emp_id) AS 'Employees reporting to each manager' FROM Employee WHERE
Manager_ID IS NOT NULL Group BY Manager_ID;
SELECT Count(Emp_id) AS 'Total' FROM Employee WHERE Dept_NO IN(20,30);
SELECT Count(Distinct Job_title) AS 'Unique Job Titles' FROM Employee;
SELECT MAX(Salary) AS 'Highest Salary',manager_id FROM Employee WHERE Manager_id IS
NOT NULL  GROUP BY Manager_id Having MAX(Salary) > 10000 ORDER BY MAX(Salary) DESC;
```

Best of Luck 😊