Basic Databases – Week 05

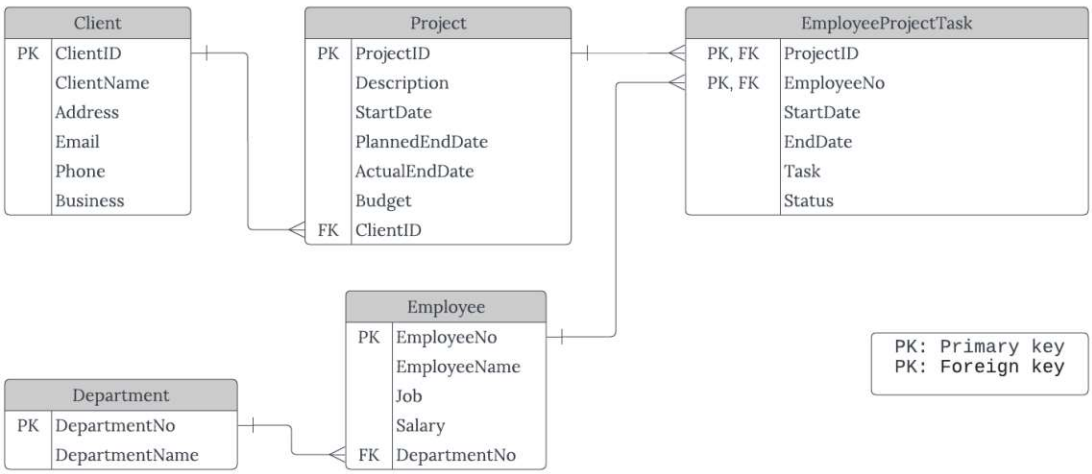

Table Explanations

The tables below describe attributes for each entity:

1. Client

Column Name	Datatype	Constraints	Remarks
ClientID	int	Primary Key	
ClientName	varchar(100)	Not Null	
Address	varchar(200)		
Email	varchar(30)	Unique	
Phone	int		
Business	varchar(100)	Not Null	Business type of client like *Manufacturer*, *Reseller* ...

2. Project

Column Name	Datatype	Constraints	Remarks
ProjectID	int	Primary key	
Description	varchar(200)		Description of project like *Accounting*, *Payroll*, ...
StartDate	date		Start date of project
PlannedEndDate	date		Planned end date of project
ActualEndDate	date	Must be later than *PlannedEndDate*	Actual end date of project Use **CHECK** constraint
Budget	int	Must be positive	Use **CHECK** constraint to ensure budget is > 0
ClientID	int	Foreign Key	ClientID from client table

3. Department

Column Name	Datatype	Constraints	Remarks
DepartmentNo	int	Primary Key	
DepartmentName	varchar(100)	Not null	

4. **Employee**

Column Name	Datatype	Constraints	Remarks
EmployeeNo	int	Primary key	
EmployeeName	varchar(100)	Not null	
Job	varchar(100)		
Salary	int	Must be positive	Use **CHECK** constraint to ensure *salary* is > 1700
DepartmentNo	int	Foreign key	DepartmentNo as per department table

5. **EmployeeProjectTask**

Column Name	Datatype	Constraints	Remarks
ProjectID	int	Primary key, Foreign key	Composite primary key and foreign keys referring Projects and Employees table
EmployeeNo	int	Primary key, Foreign key	
StartDate	date		Start date when employee begins task on this project
EndDate	date		End date when employee finishes task on this project
Task	varchar(100)		Task performed by employee like designing, coding ...
Status	varchar(30)		Status of task like 'in progress', 'complete', 'cancelled'

Write the SQL Queries to:

1. Create tables using the information provided above and insert at least 02 records into each table. **(2 points)**
2. Display the names of employees beginning with 'M'. **(0.5 point)**

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EmployeeNo	EmployeeName
10005	Mingsen Casley
10006	Mayumi Schueller

3. Find the employee(s) with the longest name. **(1 point)**

	EmployeeNo	EmployeeName
1	10001	Georgi Facello
2	10002	Bezalel Simmel
3	10003	Parto Bamford
4	10004	Kyoichi Maliniak
5	10005	Mingsen Casley
6	10006	Mayumi Schueller

(16 letters, included space)

EmployeeNo	EmployeeName
10004	Kyoichi Maliniak
10006	Mayumi Schueller

(results)

4. Display the department name, employee name, and salary in descending order of employee salary. **(0.5 point)**

DepartmentName	EmployeeName	Salary
Testing	Mayumi Schueller	2300
Testing	Mingsen Casley	2200
Testing	Kyoichi Maliniak	2100
Development	Parto Bamford	2000
Development	Bezalel Simmel	1900
Design	Georgi Facello	1800

5. Display the department number, department name, and the count of employees in that department. **(0.5 point)**

Department number	Department name	The number of employee
101	Design	1
102	Development	2
103	Testing	3
104	Document	0

6. Display the name of the department with the highest sum of salary. **(0.5 point)**

	EmployeeNo	EmployeeName	Salary	DepartmentNo
1	10001	Georgi Facello	1800	101
2	10002	Bezalel Simmel	1900	102
3	10003	Parto Bamford	4700	102
4	10004	Kyoichi Maliniak	2100	103
5	10005	Mingsen Casley	2200	103
6	10006	Mayumi Schueller	2300	103

sum(salary) = 6600

	DepartmentNo	DepartmentName
1	102	Development
2	103	Testing

(results)

Requirements:

1. Do not use automated query generation tools, such as Chatgpt.
2. For each query, you must reformat the query to be easily readable and understandable by adding appropriate line breaks, indentation, and comments. The query must be formatted in a way that clearly shows the logic and structure of the query and makes it easy to identify the purpose and meaning of each part of the query.
3. Please ensure that assignment file is submitted in PDF format.

--- The end ---