```
--create database employee_projects

USE employee_projects

DROP TABLE IF EXISTS
                                employee_project_task,
                                project,
                                client,
                                employee,
                                department;

CREATE TABLE client(
       client_id                        INT IDENTITY(1,1)    NOT NULL,
       client_name                      VARCHAR(100)         NOT NULL,
       address                                 VARCHAR(200)                        ,
       email                            VARCHAR(30)                 UNIQUE ,
       phone                            INT
       ,
       business                         VARCHAR(100)         NOT NULL,
       PRIMARY KEY (client_id)
);

CREATE TABLE project(
       project_id                       INT IDENTITY(1,1)    NOT NULL,
       description                      VARCHAR(200)                        ,
       start_date                       DATE                                       ,
       planned_end_date           DATE                                        ,
       actual_end_date                  DATE                                       ,
       budget                           INT
       CHECK(budget>0),
       client_id                        INT                                 NOT NULL,
       FOREIGN KEY (client_id) REFERENCES client (client_id),
       PRIMARY KEY (project_id),
       CHECK(actual_end_date>planned_end_date)
);

CREATE TABLE department(
       department_no              INT IDENTITY(1,1)    NOT NULL,
       department_name                  VARCHAR(100)         NOT NULL,
       PRIMARY KEY (department_no)
);

CREATE TABLE employee(
       employee_no                      INT    IDENTITY(1,1) NOT NULL,
       employee_name              VARCHAR(100)         NOT NULL,
       job                                     VARCHAR(100)                        ,
       salary                           INT                                 CHECK
(salary>1700),
       department_no              INT                                 NOT NULL,
       FOREIGN KEY (department_no) REFERENCES department (department_no),
       PRIMARY KEY (employee_no)
);

CREATE TABLE employee_project_task(
       project_id                       INT                                 NOT NULL,
       employee_no                      INT                                 NOT NULL,
       start_date                       DATE                                       ,
       end_date                         DATE                                       ,
       task                             VARCHAR(100)                        ,
       status                           VARCHAR(30)                         ,
       FOREIGN KEY (project_id) REFERENCES project (project_id),
       FOREIGN KEY (employee_no) REFERENCES employee (employee_no),
```

```
        PRIMARY KEY (project_id, employee_no)
);



--DELETE FROM university;
--DBCC CHECKIDENT('client', RESEED, 0);

USE employee_projects


INSERT INTO client (client_name, address, email, phone, business) VALUES
('ABC Corporation', '123 Main Street, Anytown USA', 'abc@abc.com',12121212 ,
'Retail'),
('XYZ Inc.', '456 High Street, Anytown USA', 'xyz@xyz.com', 6666666, 'Manufacturing'),
('Green Acres', '789 Park Lane, Anytown USA', 'abc@greenacres.com', 7777777,
'Agriculture'),
('Big Fish Games', '321 Waterfront Ave, Seattle WA', 'abc@bigfishgames.com', 1234567,
'Gaming'),
('Tech Solutions LLC', '777 Tech Blvd, San Francisco CA', 'info@techsolutions.com',
9876543, 'Technology'),
('Sunshine Corporation', '4321 Beach Blvd, Miami FL', 'abc@sunshinecorp.com', 5551212,
'Hospitality'),
('AutoZone', '2345 Main Street, Memphis TN', 'info@autozone.com', 9011234,
'Automotive'),
('Global Marketing Inc.', '567 5th Avenue, New York NY', 'xyz@globalmarketing.com',
21255512, 'Marketing'),
('ABC Financial Services', '111 Wall St, New York NY', 'info@abcfinserv.com',
21255555, 'Finance'),
('Westward Leasing', '789 Sunset Blvd, Los Angeles CA', 'xyz@westwardleasing.com',
31055543, 'Leasing'),
('Johnson & Johnson', '1234 Pharma Way, New Brunswick NJ', 'info@jnj.com', 7325555,
'Pharmaceuticals'),
('Dream Builders', '9876 Construction Blvd, Dallas TX', 'abc@dreambuilders.com',
21455512, 'Construction'),
('Beachside Vacation Rentals', '555 Beachfront Rd, San Diego CA',
'xyz@vacationrentals.com', 6195551, 'Hospitality'),
('Acme Plumbing', '7777 Main St, Atlanta GA', 'xyz@acmeplumbing.com', 40455543,
'Plumbing'),
('La Belle Salon', '888 Beauty Lane, Beverly Hills CA', 'info@labellesalon.com',
31055555, 'Beauty');

INSERT INTO client (client_name, address, email, business) VALUES
('Blue Ridge Holdings', '345 Mountain View Dr, Asheville NC',
'abc@blueridgeholdings.com',  'Real Estate'),
('Sustainable Energy Group', '5432 Park Ave, Denver CO', 'abc@group.com',  'Energy'),
('Sweet Tooth Bakery', '2345 Baker Street, New Orleans LA',
'xyz@sweettoothbakery.com',  'Bakery'),
('North Star Consulting', '4321 Consulting Blvd, Boston MA', 'info@consulting.com',
'Consulting'),
('Fresh Farms', '4567 Farmhouse Rd, Kansas City MO', 'xyz@freshfarms.com',
'Agriculture');



INSERT INTO project (description, start_date, planned_end_date, actual_end_date,
budget, client_id) VALUES
('Website redesign', '2022-01-01', '2022-02-28', '2022-03-15', 5000, 1),
('Marketing campaign', '2022-03-01', '2022-06-30', '2022-07-15', 10000, 1),
('Product launch', '2022-05-01', '2022-07-31', NULL, 15000, 2),
('Software development', '2022-06-01', '2022-09-30', NULL, 20000, 3),
```

```
('Event planning', '2022-08-01', '2022-09-30', '2022-10-15', 8000, 4),
('Social media strategy', '2022-09-01', '2022-11-30', NULL, 12000, 5),
('Content creation', '2022-10-01', '2022-12-31', NULL, 9000, 6),
('Brand identity design', '2022-11-01', '2023-01-31', NULL, 15000, 7),
('Market research', '2023-01-01', '2023-04-30', NULL, 18000, 8),
('Employee training', '2023-02-01', '2023-03-31', '2023-04-15', 5000, 9),
('Website development', '2023-03-01', '2023-06-30', '2023-08-31', 25000, 10),
('E-commerce platform', '2023-04-01', '2023-09-30', NULL, 30000, 11),
('Product design', '2023-05-01', '2023-08-31', NULL, 20000, 12),
('Graphic design', '2023-06-01', '2023-09-30', NULL, 12000, 13),
('Video production', '2023-07-01', '2023-08-31', '2023-11-30', 8000, 14),
('Mobile app development', '2023-08-01', '2023-11-30', NULL, 35000, 15),
('SEO optimization', '2023-09-01', '2024-01-31', NULL, 15000, 16),
('Print advertising', '2023-10-01', '2024-02-29', NULL, 10000, 17),
('Event sponsorship', '2023-11-01', '2024-03-31', NULL, 20000, 18),
('Public relations', '2023-12-01', '2024-05-31', NULL, 25000, 19),
('New product launch campaign', '2023-06-15', '2023-09-30', NULL, 40000, 7),
('Corporate sustainability initiative', '2022-09-01', '2022-12-31', NULL, 100000, 20),
('Expansion of retail store chain', '2023-01-01', '2023-08-31', NULL, 75000, 20),
('ERP system implementation', '2022-07-01', '2022-10-31', '2023-06-30', 120000, 5),
('Mobile app development', '2023-02-01', '2023-06-30', '2023-08-31', 60000, 14);


INSERT INTO department (department_name) VALUES
('Retail'),
('Manufacturing'),
('Agriculture'),
('Gaming'),
('Technology'),
('Hospitality'),
('Automotive'),
('Marketing'),
('Finance'),
('Leasing'),
('Pharmaceuticals'),
('Construction'),
('Plumbing'),
('Beauty'),
('Sales'),
('Human Resources'),
('Finance'),
('Engineering');


INSERT INTO employee (employee_name, job, salary, department_no) VALUES
('John Doe', 'Marketing Manager', 5500, 8),
('Jane Smith', 'Marketing Specialist', 3500, 8),
('Peter Parker', 'Sales Manager', 6000, 15),
('Mary Johnson', 'Sales Representative', 4000, 15),
('David Lee', 'HR Manager', 6500,  16),
('Jessica Brown', 'HR Assistant', 2500,  16),
('Richard Wilson', 'Finance Director', 8000,  9),
('Oliver Davis', 'Financial Analyst', 4500,  9),
('Michael Chen', 'Software Engineer', 7000, 18),
('Emily Kim', 'System Analyst', 5500,  5),
('Christopher Taylor', 'Farm Manager', 7500,  3),
('Sophie Baker', 'Game Designer', 6000,  4),
('William Adams', 'Hotel Manager', 8500,  6),
('Amanda Young', 'Auto Mechanic', 5000,  7),
('Daniel Harris', 'Marketing Coordinator', 6800,  8),
('Lucas Wright', 'Accountant', 3800,  9),
```

```
('Olivia Green', 'Leasing Agent', 7200,  10),
('Victoria Allen', 'Clinical Trial Manager', 4200,  11),
('Ethan Turner', 'Construction Manager', 3200, 12),
('Isabella Baker', 'Plumber', 5000,  13);

INSERT INTO employee_project_task (project_id, employee_no, start_date, end_date,
task, status) VALUES
(1, 1, '2022-01-01', '2022-01-15', 'Research', 'In Progress'),
(1, 2, '2022-01-05', '2022-02-05', 'Design', 'Completed'),
(1, 3, '2022-01-15', '2022-02-15', 'Development', 'In Progress'),
(2, 4, '2022-02-01', '2022-02-28', 'Testing', 'Completed'),
(2, 5, '2022-02-15', '2022-03-15', 'Deployment', 'In Progress'),
(2, 6, '2022-03-01', '2022-03-31', 'Maintenance', 'Not Started'),
(3, 7, '2022-04-01', '2022-04-30', 'Research', 'Not Started'),
(3, 8, '2022-04-15', '2022-05-15', 'Design', 'Not Started'),
(3, 9, '2022-05-01', '2022-06-01', 'Development', 'Not Started'),
(4, 10, '2022-06-01', '2022-06-30', 'Testing', 'Not Started'),
(4, 11, '2022-06-15', '2022-07-15', 'Deployment', 'Not Started'),
(4, 12, '2022-07-01', '2022-07-31', 'Maintenance', 'Not Started'),
(5, 13, '2022-08-01', '2022-08-31', 'Research', 'Not Started'),
(5, 14, '2022-08-15', '2022-09-15', 'Design', 'Not Started'),
(5, 15, '2022-09-01', '2022-10-01', 'Development', 'Not Started'),
(6, 16, '2022-10-01', '2022-10-31', 'Testing', 'Not Started'),
(6, 17, '2022-10-15', '2022-11-15', 'Deployment', 'Not Started'),
(6, 18, '2022-11-01', '2022-11-30', 'Maintenance', 'Not Started'),
(7, 19, '2023-01-01', '2023-01-31', 'Research', 'Not Started'),
(7, 20, '2023-01-15', '2023-02-15', 'Design', 'Not Started');




USE employee_projects


SELECT * FROM client;

SELECT * FROM project;

SELECT * FROM department;

SELECT * FROM employee;

SELECT * FROM employee_project_task;

-- TASK 2
SELECT  employee_no, employee_name FROM employee
WHERE employee_name LIKE 'M%'

-- TASK 3
SELECT  employee_no, employee_name, LEN(employee_name) as name_len FROM employee
WHERE LEN(employee_name) =
       (SELECT MAX(LEN(employee_name)) FROM employee)

-- TASK 4
SELECT employee_no,department_name, employee_name, salary FROM employee
INNER JOIN department ON department.department_no = employee.department_no
ORDER BY salary DESC

-- TASK 5
```

```sql
SELECT department.department_no, department_name, COUNT(*) as no_of_employees FROM
employee
INNER JOIN department ON department.department_no = employee.department_no
GROUP BY department.department_no, department_name
ORDER BY no_of_employees DESC


-- TASK 6
SELECT department.department_no, department_name, SUM(salary) as salary_sum FROM
employee
INNER JOIN department ON department.department_no = employee.department_no

GROUP BY department.department_no, department_name
HAVING SUM(salary) =
(SELECT MAX (salary_sum) FROM
       (SELECT SUM(salary) as salary_sum FROM employee
       INNER JOIN department ON department.department_no = employee.department_no
       GROUP BY department.department_no, department_name) as salary_table)
ORDER BY salary_sum DESC
```