
Project

Database Management Systems

Session 2021

Submitted To

Dr. Zahid Iqbal

Submitted By

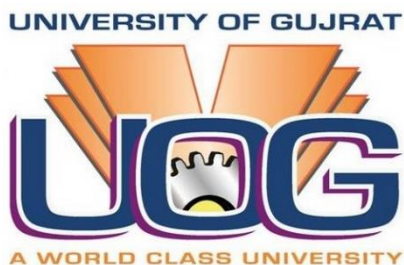
Syed Muhammad Akmal (21011519-017)

Syed Zain ul Abadeen (21011519-046)

Section c

Due Date

Monday, August 7, 2023



Department of Computer Science

UNIVERSITY OF GUJRAT HAFIZ HAYAT CAMPUS

Contents

| | |
|--|----|
| Project Introduction:..... | 3 |
| Project Scope: | 3 |
| ER Diagram:..... | 4 |
| SQL Commands and their outputs: | 5 |
| simple procedures for getting records from procedure | 5 |
| calling procedures | 7 |
| Departments table | 10 |
| admins TABLE | 10 |
| enginners Table..... | 12 |
| pilots table | 15 |
| plane type table | 18 |
| plane routes table | 20 |
| plane Engineer table | 21 |
| aeroplane table | 22 |

Project Introduction:

Welcome to the Airline Management System, a comprehensive and efficient solution designed to streamline and optimize the operations of a modern airline. This system is built on the robust foundation of Microsoft SQL Server, enabling seamless data management, real-time insights, and enhanced decision-making for airline administrators, employees, pilots, engineers, and passengers.

The Airline Management System encompasses a range of functionalities that cover every aspect of airline operations, from employee management to aircraft maintenance, flight scheduling, and passenger services. By leveraging the power of SQL Server, the system ensures data integrity, security, and scalability, empowering airlines to achieve higher levels of efficiency, safety, and customer satisfaction.

Project Scope:

The Airline Management System aims to address the following key areas within the airline industry:

- Employee Management
- Aircraft Operations:
 - Flights
 - Route Planning
- Maintenance and Engineering
- Scalability and Integration

The Airline Management System offers a holistic approach to airline operations, enabling effective collaboration, data-driven decision-making, and improved customer experiences. By leveraging the capabilities of SQL Server, the system ensures a reliable and efficient platform for airlines to manage their operations and thrive in today's competitive aviation industry.

ER Diagram:



SQL Commands and their outputs:

simple procedures for getting records from procedure

```
go
create procedure get_employee @num int
as
begin
set nocount on;
if @num = 1
begin
select *from Employees
print 'query terminated succesfully (Employees records are given)'
end
else if @num = 2
begin
select * from Employees order by Emp_Name
print 'query terminated succesfully (Employees records are given)'
end
else if @num = 3
begin
select * from Employees order by Emp_Name desc
print 'query terminated succesfully (Employees records are given)'
end
else if @num = 4
begin
select * from Employees where gender = 'M'
print 'query terminated succesfully (Employees records are given)'
end
else if @num = 5
begin
select * from Employees where gender = 'f'
print 'query terminated succesfully (Employees records are given)'
end
else if @num = 6
begin
select Emp_Id , Emp_Name , year(GETDATE()) - YEAR(DOB) as age from Employees
print 'query terminated succesfully (Employees records are given)'
end
else if @num = 7
begin
select max(year(GETDATE()) - YEAR(DOB)) as age from Employees
print 'query terminated succesfully (Maximum age is given below)'
end
else if @num = 8
begin
select min(year(GETDATE()) - YEAR(DOB)) as age from Employees
print 'query terminated succesfully (Manimum age is given below)'
end
else if @num = 9
begin
select top 3 * from Employees
print 'query terminated succesfully (top 3 record is given below)'
end

--- USE OF WILDCARDS
```

```

else if @num = 10
begin
select Emp_Name as 'Employee_Name',
Phone_no as 'Mobile_No' ,year(GETDATE()) - YEAR(DOB) as age
from Employees where Emp_Name like 's%'
print 'query terminated succesfully ( record is given below whose name is started
with s) '
end
else if @num = 11
begin
select Emp_Name as 'Employee_Name',
Phone_no as 'Mobile_No' ,year(GETDATE()) - YEAR(DOB) as age
from Employees where Emp_Name LIKE '_0%'
print 'query terminated succesfully (record is given below those name contain (0)
at second position)'
end

-- using sub queries and joins

else if @num = 12
begin
select Emp_Id AS 'Employee Id',Emp_Name as 'Employee_Name',
department_ID as 'Department Id',
(select Dep_Name from
departments where Employees.department_ID = Dep_ID) as
'Working Department'
from Employees
print 'query terminated succesfully (employees names and department names using sub
query(record is given below))'
end
else if @num = 13
begin
select departments.Dep_Name as 'Department Name' ,
count(department_ID)as 'Total Employees'
from Employees
inner join departments
on Employees.department_ID = departments.Dep_ID
group by Dep_Name
print 'query terminated succesfully (total no of employees in each department is
given below(record is given below))'
end
else if @num = 14
begin
select count(Emp_Name)as 'Total Employees'
from Employees
inner join departments
on Employees.department_ID = departments.Dep_ID
print 'query terminated succesfully (total no of employees in industry is given
below(record is given below))'
end
else if @num = 15
begin
select avg(year(GETDATE()) - YEAR(DOB))as 'Average age'
from Employees
print 'query terminated succesfully (Average age of employees in industry is given
below(record is given below))'
end

```

```

else if @num = 16
begin
select Emp_Name , Dep_Name
from Employees
inner join departments
on Employees.department_ID = departments.Dep_ID
where Dep_Name = 'Engineering'
print 'query terminated succesfully (Employees which are wroking in engineering dep
is given below(record is given below))'
end

else
begin
print 'Invalid Choice Try Again'
end

end;

```

calling procedures

```

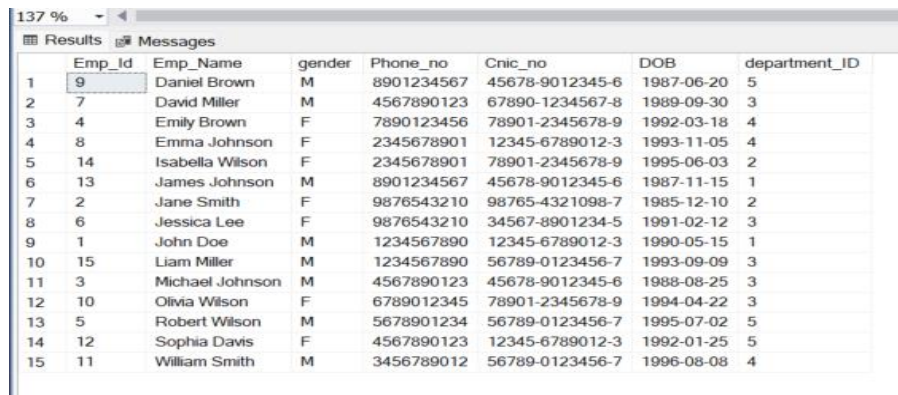
--1 for simple output
--2 for ascending order by name
--3 for descending order by name
--4 for only male's data
--5 for female's data
--6 for collecting age from dob
--7 for getting the person with max age
--8 for getting the person with minimum age
--9 for getting the top 3 records
--10 for getting wilddcard output
--11 for getting wild card output
--12 for getting the employees and departments names using sub query
--13 for getting the no of employees in each department using join
--14 for getting the total no of employees using join
--15 for getting the average age of employees
--16 for getting the specific record (eg employees which are working in engineering dep)

```

exec get_employee 1

| 137 % | | | | | | | |
|------------------|--------|-----------------|--------|------------|-----------------|------------|---------------|
| Results Messages | | | | | | | |
| | Emp_Id | Emp_Name | gender | Phone_no | Cnic_no | DOB | department_ID |
| 1 | 1 | John Doe | M | 1234567890 | 12345-6789012-3 | 1990-05-15 | 1 |
| 2 | 2 | Jane Smith | F | 9876543210 | 98765-4321098-7 | 1985-12-10 | 2 |
| 3 | 3 | Michael Johnson | M | 4567890123 | 45678-9012345-6 | 1988-08-25 | 3 |
| 4 | 4 | Emily Brown | F | 7890123456 | 78901-2345678-9 | 1992-03-18 | 4 |
| 5 | 5 | Robert Wilson | M | 5678901234 | 56789-0123456-7 | 1995-07-02 | 5 |
| 6 | 6 | Jessica Lee | F | 9876543210 | 34567-8901234-5 | 1991-02-12 | 3 |
| 7 | 7 | David Miller | M | 4567890123 | 67890-1234567-8 | 1989-09-30 | 3 |
| 8 | 8 | Emma Johnson | F | 2345678901 | 12345-6789012-3 | 1993-11-05 | 4 |
| 9 | 9 | Daniel Brown | M | 8901234567 | 45678-9012345-6 | 1987-06-20 | 5 |
| 10 | 10 | Olivia Wilson | F | 6789012345 | 78901-2345678-9 | 1994-04-22 | 3 |
| 11 | 11 | William Smith | M | 3456789012 | 56789-0123456-7 | 1996-08-08 | 4 |
| 12 | 12 | Sophia Davis | F | 4567890123 | 12345-6789012-3 | 1992-01-25 | 5 |
| 13 | 13 | James Johnson | M | 8901234567 | 45678-9012345-6 | 1987-11-15 | 1 |
| 14 | 14 | Isabella Wilson | F | 2345678901 | 78901-2345678-9 | 1995-06-03 | 2 |
| 15 | 15 | Liam Miller | M | 1234567890 | 56789-0123456-7 | 1993-09-09 | 3 |

exec get_employee 2



137 %

Results Messages

| | Emp_Id | Emp_Name | gender | Phone_no | Cnic_no | DOB | department_ID |
|----|--------|-----------------|--------|------------|-----------------|------------|---------------|
| 1 | 9 | Daniel Brown | M | 8901234567 | 45678-9012345-6 | 1987-06-20 | 5 |
| 2 | 7 | David Miller | M | 4567890123 | 67890-1234567-8 | 1989-09-30 | 3 |
| 3 | 4 | Emily Brown | F | 7890123456 | 78901-2345678-9 | 1992-03-18 | 4 |
| 4 | 8 | Emma Johnson | F | 2345678901 | 12345-6789012-3 | 1993-11-05 | 4 |
| 5 | 14 | Isabella Wilson | F | 2345678901 | 78901-2345678-9 | 1995-06-03 | 2 |
| 6 | 13 | James Johnson | M | 8901234567 | 45678-9012345-6 | 1987-11-15 | 1 |
| 7 | 2 | Jane Smith | F | 9876543210 | 98765-4321098-7 | 1985-12-10 | 2 |
| 8 | 6 | Jessica Lee | F | 9876543210 | 34567-8901234-5 | 1991-02-12 | 3 |
| 9 | 1 | John Doe | M | 1234567890 | 12345-6789012-3 | 1990-05-15 | 1 |
| 10 | 15 | Liam Miller | M | 1234567890 | 56789-0123456-7 | 1993-09-09 | 3 |
| 11 | 3 | Michael Johnson | M | 4567890123 | 45678-9012345-6 | 1988-08-25 | 3 |
| 12 | 10 | Olivia Wilson | F | 6789012345 | 78901-2345678-9 | 1994-04-22 | 3 |
| 13 | 5 | Robert Wilson | M | 5678901234 | 56789-0123456-7 | 1995-07-02 | 5 |
| 14 | 12 | Sophia Davis | F | 4567890123 | 12345-6789012-3 | 1992-01-25 | 5 |
| 15 | 11 | William Smith | M | 3456789012 | 56789-0123456-7 | 1996-08-08 | 4 |

exec get_employee 3



137 %

Results Messages

| | Emp_Id | Emp_Name | gender | Phone_no | Cnic_no | DOB | department_ID |
|----|--------|-----------------|--------|------------|-----------------|------------|---------------|
| 1 | 11 | William Smith | M | 3456789012 | 56789-0123456-7 | 1996-08-08 | 4 |
| 2 | 12 | Sophia Davis | F | 4567890123 | 12345-6789012-3 | 1992-01-25 | 5 |
| 3 | 5 | Robert Wilson | M | 5678901234 | 56789-0123456-7 | 1995-07-02 | 5 |
| 4 | 10 | Olivia Wilson | F | 6789012345 | 78901-2345678-9 | 1994-04-22 | 3 |
| 5 | 3 | Michael Johnson | M | 4567890123 | 45678-9012345-6 | 1988-08-25 | 3 |
| 6 | 15 | Liam Miller | M | 1234567890 | 56789-0123456-7 | 1993-09-09 | 3 |
| 7 | 1 | John Doe | M | 1234567890 | 12345-6789012-3 | 1990-05-15 | 1 |
| 8 | 6 | Jessica Lee | F | 9876543210 | 34567-8901234-5 | 1991-02-12 | 3 |
| 9 | 2 | Jane Smith | F | 9876543210 | 98765-4321098-7 | 1985-12-10 | 2 |
| 10 | 13 | James Johnson | M | 8901234567 | 45678-9012345-6 | 1987-11-15 | 1 |
| 11 | 14 | Isabella Wilson | F | 2345678901 | 78901-2345678-9 | 1995-06-03 | 2 |
| 12 | 8 | Emma Johnson | F | 2345678901 | 12345-6789012-3 | 1993-11-05 | 4 |
| 13 | 4 | Emily Brown | F | 7890123456 | 78901-2345678-9 | 1992-03-18 | 4 |
| 14 | 7 | David Miller | M | 4567890123 | 67890-1234567-8 | 1989-09-30 | 3 |
| 15 | 9 | Daniel Brown | M | 8901234567 | 45678-9012345-6 | 1987-06-20 | 5 |

exec get_employee 4



137 %

Results Messages

| | Emp_Id | Emp_Name | gender | Phone_no | Cnic_no | DOB | department_ID |
|---|--------|-----------------|--------|------------|-----------------|------------|---------------|
| 1 | 1 | John Doe | M | 1234567890 | 12345-6789012-3 | 1990-05-15 | 1 |
| 2 | 3 | Michael Johnson | M | 4567890123 | 45678-9012345-6 | 1988-08-25 | 3 |
| 3 | 5 | Robert Wilson | M | 5678901234 | 56789-0123456-7 | 1995-07-02 | 5 |
| 4 | 7 | David Miller | M | 4567890123 | 67890-1234567-8 | 1989-09-30 | 3 |
| 5 | 9 | Daniel Brown | M | 8901234567 | 45678-9012345-6 | 1987-06-20 | 5 |
| 6 | 11 | William Smith | M | 3456789012 | 56789-0123456-7 | 1996-08-08 | 4 |
| 7 | 13 | James Johnson | M | 8901234567 | 45678-9012345-6 | 1987-11-15 | 1 |
| 8 | 15 | Liam Miller | M | 1234567890 | 56789-0123456-7 | 1993-09-09 | 3 |


```

exec get_employee 5
exec get_employee 6
exec get_employee 7
exec get_employee 8
exec get_employee 9
exec get_employee 10
exec get_employee 11
exec get_employee 12

```

| Results Messages | | | | | | | |
|------------------|--------|-----------------|--------|------------|-----------------|------------|---------------|
| | Emp_Id | Emp_Name | gender | Phone_no | Cnic_no | DOB | department_ID |
| 1 | 2 | Jane Smith | F | 9876543210 | 98765-4321098-7 | 1985-12-10 | 2 |
| 2 | 4 | Emily Brown | F | 7890123456 | 78901-2345678-9 | 1992-03-18 | 4 |
| 3 | 6 | Jessica Lee | F | 9876543210 | 34567-8901234-5 | 1991-02-12 | 3 |
| 4 | 8 | Emma Johnson | F | 2345678901 | 12345-6789012-3 | 1993-11-05 | 4 |
| 5 | 10 | Olivia Wilson | F | 6789012345 | 78901-2345678-9 | 1994-04-22 | 3 |
| 6 | 12 | Sophia Davis | F | 4567890123 | 12345-6789012-3 | 1992-01-25 | 5 |
| 7 | 14 | Isabella Wilson | F | 2345678901 | 78901-2345678-9 | 1995-06-03 | 2 |

| | Emp_Id | Emp_Name | age |
|---|--------|-----------------|-----|
| 1 | 1 | John Doe | 33 |
| 2 | 2 | Jane Smith | 38 |
| 3 | 3 | Michael Johnson | 35 |
| 4 | 4 | Emily Brown | 31 |
| 5 | 5 | Robert Wilson | 28 |
| 6 | 6 | Jessica Lee | 32 |
| 7 | 7 | David Miller | 34 |
| 8 | 8 | Emma Johnson | 30 |

| | age |
|---|-----|
| 1 | 38 |

| | age |
|---|-----|
| 1 | 27 |

| | Emp_Id | Emp_Name | gender | Phone_no | Cnic_no | DOB | department_ID |
|---|--------|--------------|--------|------------|-----------------|------------|---------------|
| 1 | 1 | John Doe | M | 1234567890 | 12345-6789012-3 | 1990-05-15 | 1 |
| 2 | 2 | Jane Smith | F | 9876543210 | 98765-4321098-7 | 1985-12-10 | 2 |
| 3 | 3 | Michael J... | M | 4567890123 | 45678-9012345-6 | 1988-08-25 | 3 |

| | Employee_Name | Mobile_No | age |
|---|---------------|------------|-----|
| 1 | Sophia Davis | 4567890123 | 31 |

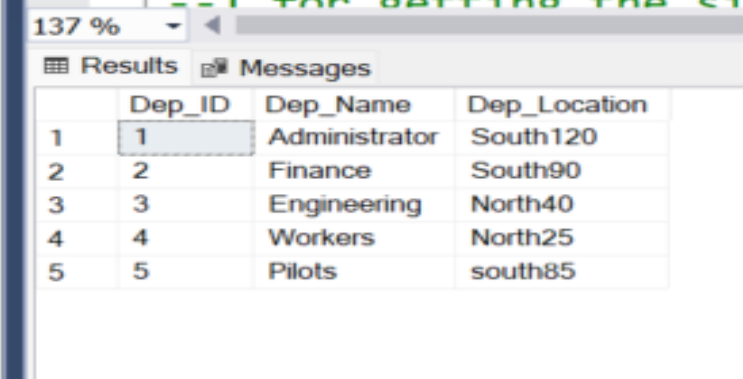
| | Employee_Name | Mobile_No | age |
|---|---------------|------------|-----|
| 1 | John Doe | 1234567890 | 33 |
| 2 | Robert Wilson | 5678901234 | 28 |
| 3 | Sophia Davis | 4567890123 | 31 |

| | Employee Id | Employee_Name | Department Id | Working Department |
|----|-------------|-----------------|---------------|--------------------|
| 1 | 1 | John Doe | 1 | Administrator |
| 2 | 2 | Jane Smith | 2 | Finance |
| 3 | 3 | Michael Johnson | 3 | Engineering |
| 4 | 4 | Emily Brown | 4 | Workers |
| 5 | 5 | Robert Wilson | 5 | Pilots |
| 6 | 6 | Jessica Lee | 3 | Engineering |
| 7 | 7 | David Miller | 3 | Engineering |
| 8 | 8 | Emma Johnson | 4 | Workers |
| 9 | 9 | Daniel Brown | 5 | Pilots |
| 10 | 10 | Olivia Wilson | 3 | Engineering |
| 11 | 11 | William Smith | 4 | Workers |
| 12 | 12 | Sophia Davis | 5 | Pilots |
| 13 | 13 | James Johnson | 1 | Administrator |
| 14 | 14 | Isabella Wilson | 2 | Finance |
| 15 | 15 | Liam Miller | 3 | Engineering |

Departments table

```
go
create procedure get_department
as
begin
set nocount on;
select *from departments
print 'query terminated succesfully (departments records are given)'
end;

exec get_department
```



| | Dep_ID | Dep_Name | Dep_Location |
|---|--------|---------------|--------------|
| 1 | 1 | Administrator | South120 |
| 2 | 2 | Finance | South90 |
| 3 | 3 | Engineering | North40 |
| 4 | 4 | Workers | North25 |
| 5 | 5 | Pilots | south85 |

admins TABLE

```
go
create procedure get_Admin @num int
as
begin
set nocount on;

if @num = 1
begin
select *from Admins

print 'query terminated succesfully (admins records are given)'
end

--- using inner join

else if @num = 2
begin
select Admin_Id , Emp_Name , Qualification ,salary from Admins inner join
Employees on Admins.emp = Employees.Emp_Id
print 'query terminated succesfully (admins their names and salary records
are given)'
end

else if @num = 3
begin
select Emp_Name , salary from Admins inner join
Employees on Admins.emp = Employees.Emp_Id
where Admins.salary = (select max(salary) from Admins)
```

```

        print 'query terminated succesfully (employee name with maximum salary
records are given)'
    end

else if @num = 4
    begin

        select Emp_Name , salary from Admins inner join
        Employees on Admins.emp = Employees.Emp_Id
        where Admins.salary = (select min(salary) from Admins)

        print 'query terminated succesfully (employee name with minimum salary
records are given)'
    end

else if @num = 5
    begin
        select Emp_Name as 'Employee Name',
        Qualification , Phone_no ,salary , Dep_Name ,Dep_Location from Admins inner
join
        Employees on Admins.emp = Employees.Emp_Id
        inner join departments
        on Employees.department_ID = departments.Dep_ID
        print 'query terminated succesfully (name and salaries records are given)'
    end
else
    begin
        print 'Invalid choice please try again with valid choice !'
    end
end;

-- different select command on admins table

--1 for getting the simple whole record
--2 for getting admin id, names and their salaries
--3 for getting employee name with maximum salary
--4 for getting employee name with minimum salary
--5 for getting the details of three tables with joins

exec get_Admin 1
exec get_Admin 2
exec get_Admin 3
exec get_Admin 4
exec get_Admin 5
exec get_Admin 6

```

137 %

Results Messages

| | Admin_Id | Qualification | Experienc | joining_date | salary | emp |
|---|----------|---------------|-----------|--------------|--------|-----|
| 1 | 1 | MBA | 2 | 2013-12-23 | 35000 | 1 |
| 2 | 2 | MBA | 2 | 2011-12-24 | 23500 | 13 |

| | Admin_Id | Emp_Name | Qualification | salary |
|---|----------|---------------|---------------|--------|
| 1 | 1 | John Doe | MBA | 35000 |
| 2 | 2 | James Johnson | MBA | 23500 |

| | Emp_Name | salary |
|---|----------|--------|
| 1 | John Doe | 35000 |

| | Emp_Name | salary |
|---|---------------|--------|
| 1 | James Johnson | 23500 |

| | Employee Name | Qualification | Phone_no | salary | Dep_Name | Dep_Location |
|---|---------------|---------------|------------|--------|---------------|--------------|
| 1 | John Doe | MBA | 1234567890 | 35000 | Administrator | South120 |
| 2 | James Johnson | MBA | 8901234567 | 23500 | Administrator | South120 |

enginners Table

```

go
create procedure get_engineers @num int
as
begin
set nocount on;

if @num = 1
begin
select *from engineer
print 'query terminated succesfully (Engineers records are given)'
end

else if @num = 2
begin
select eng_Id , Experienc as 'Max Experienc' from engineer
where Experienc = (select MAX(Experienc) as 'Maximum Experienc' from
engineer)
print 'query terminated succesfully (Engineers having max experience records
are given)'
end

else if @num = 3
begin
select eng_Id , Experienc as 'Min Experienc' from engineer

```

```

engineer)      where Experience = (select Min(Experience) as 'Maximum Experience' from
are given)'    print 'query terminated succesfully (Engineers having min experience records
               end

else if @num = 4
begin
    select eng_Id , salary as 'Max salary' from engineer
    where salary = (select MAX(salary) from engineer)
    print 'query terminated succesfully (Engineers having max salary records are
given)'
end

else if @num = 5
begin
    select eng_Id , salary as 'Min Salary' from engineer
    where salary = (select Min(salary) from engineer)
    print 'query terminated succesfully (Engineers having min salary records are
given)'
end

else if @num = 6
begin
    select eng_Id as 'Engineer ID', Emp_Name 'Employee Name',
           year(GETDATE()) - YEAR(DOB) as Age , Phone_no,salary
    from engineer inner join Employees
    on engineer.emp = Employees.Emp_Id
    print 'query terminated succesfully (Engineers and employee records are
given)'
end

else if @num = 7
begin
    select eng_Id as 'Engineer ID', Emp_Name 'Employee Name',
           year(GETDATE()) - YEAR(DOB) as Age , Phone_no,salary
    from engineer inner join Employees
    on engineer.emp = Employees.Emp_Id
    where year(GETDATE()) - YEAR(DOB) between 29 and 33
    print 'query terminated succesfully (Engineers whose ages lies between 29
and 33 records are given)'
end

else if @num = 8
begin
    select eng_Id as 'Engineer ID', Emp_Name 'Employee Name',
           year(GETDATE()) - YEAR(DOB) as Age , Phone_no,salary , Cnic_no,
           departments.Dep_Name
    from engineer inner join Employees
    on engineer.emp = Employees.Emp_Id
    inner join departments on
    Employees.department_ID = departments.Dep_ID
    print 'query terminated succesfully (Engineers and departments using
multiple joins records are given)'
end
else

```

```
begin
print 'Invalid Choice please try again with valid choice'
end

end;

-- different select command on engineers table

--1 simple for checking the table of enginners
--2 for getting the enginner with maximum experiance
--3 for getting the enginner with minimum experiance
--4 for getting the enginner with maximum salary
--5 for getting the enginner with minimum salary
--6 for getting the two tables output engineers and employees
--7 for getting the two tables output engineers whose age is between 29 and 32
--8 Engineers and departments using multiple joins

exec get_engineers 1
exec get_engineers 2
exec get_engineers 3
exec get_engineers 4
exec get_engineers 5
exec get_engineers 6
exec get_engineers 7
exec get_engineers 8
```



```

begin
    select pilot_Id , Experiance as 'Max Experiance' from pilots
    where Experiance = (select MAX(Experiance) as 'Maximum Experiance' from
pilots)
    print 'querry terminated succesfully (pilots having max experiance records
are given)'
end

else if @num = 3
begin
    select pilot_Id , Experiance as 'Min Experiance' from pilots
    where Experiance = (select Min(Experiance) as 'Maximum Experiance' from
pilots)
    print 'querry terminated succesfully (pilots having min experiance records
are given)'
end

else if @num = 4
begin
    select pilot_Id , salary as 'Max salary' from pilots
    where salary = (select MAX(salary) from pilots)
    print 'querry terminated succesfully (pilots having max salary records are
given)'
end

else if @num = 5
begin
    select pilot_Id , salary as 'Min Salary' from pilots
    where salary = (select Min(salary) from pilots)
    print 'querry terminated succesfully (pilots having min salary records are
given)'
end

else if @num = 6
begin
    select pilot_Id as 'Pilot ID', Emp_Name 'Pilot Name',
    year(GETDATE()) - YEAR(DOB) as Age , Phone_no,salary
    from pilots inner join Employees
    on pilots.emp = Employees.Emp_Id
    print 'querry terminated succesfully (pilot and employee records are given)'
end

else if @num = 7
begin
    select pilot_Id as 'Pilot ID', Emp_Name 'Pilot Name',
    year(GETDATE()) - YEAR(DOB) as Age , Phone_no,salary
    from pilots inner join Employees
    on pilots.emp = Employees.Emp_Id
    where year(GETDATE()) - YEAR(DOB) between 29 and 33
    print 'querry terminated succesfully (pilots whose ages lies between 29 and
33 records are given)'
end

else if @num = 8
begin
    select pilot_Id as 'Pilot ID', Emp_Name 'Pilot Name',

```

```

        year(GETDATE()) - YEAR(DOB) as Age , Phone_no,salary , Cnic_no,
        departments.Dep_Name
    from pilots inner join Employees
    on pilots.emp = Employees.Emp_Id
    inner join departments on
    Employees.department_ID = departments.Dep_ID
    print 'query terminated succesfully (pilots and departments using multiple
joins records are given)'
        end
    else
    begin
    print 'Invalid Choice please try again with valid choice'
    end

end;

-- different select command on pilots table

--1 simple for checking the table of pilots
--2 for getting the pilots with maximum experiance
--3 for getting the pilots with minimum experiance
--4 for getting the pilots with maximum salary
--5 for getting the pilots with minimum salary
--6 for getting the two tables output pilots and employees
--7 for getting the two tables output pilots whose age is between 29 and 32
--8 Pilots and departments using multiple joins

exec get_pilots 1
exec get_pilots 2
exec get_pilots 3
exec get_pilots 4
exec get_pilots 5
exec get_pilots 6
exec get_pilots 7
exec get_pilots 8

```

137 %

Results Messages

| | pilot_Id | Qualification | Experiace | joining_date | salary | emp |
|---|----------|---------------|-----------|--------------|---------|-----|
| 1 | 1 | Aviation | 5 | 2013-05-23 | 1350000 | 5 |
| 2 | 2 | Aviation | 6 | 2011-03-24 | 1235000 | 9 |
| 3 | 3 | Aviation | 4 | 2013-03-24 | 1235000 | 12 |

| | pilot_Id | Max Experience |
|---|----------|----------------|
| 1 | 2 | 6 |

| | pilot_Id | Min Experiace |
|---|----------|---------------|
| 1 | 3 | 4 |

| | pilot_Id | Max salary |
|---|----------|------------|
| 1 | 1 | 1350000 |

| | pilot_Id | Min Salary |
|---|----------|------------|
| 1 | 2 | 1235000 |
| 2 | 3 | 1235000 |

| | Pilot ID | Pilot Name | Age | Phone_no | salary |
|---|----------|---------------|-----|------------|---------|
| 1 | 1 | Robert Wilson | 28 | 5678901234 | 1350000 |
| 2 | 2 | Daniel Brown | 36 | 8901234567 | 1235000 |
| 3 | 3 | Sophia Davis | 31 | 4567890123 | 1235000 |

| | Pilot ID | Pilot Name | Age | Phone_no | salary |
|---|----------|--------------|-----|------------|---------|
| 1 | 3 | Sophia Davis | 31 | 4567890123 | 1235000 |

| | Pilot ID | Pilot Name | Age | Phone_no | salary | Cnic_no | Dep_Name |
|---|----------|---------------|-----|------------|---------|-----------------|----------|
| 1 | 1 | Robert Wilson | 28 | 5678901234 | 1350000 | 56789-0123456-7 | Pilots |
| 2 | 2 | Daniel Brown | 36 | 8901234567 | 1235000 | 45678-9012345-6 | Pilots |
| 3 | 3 | Sophia Davis | 31 | 4567890123 | 1235000 | 12345-6789012-3 | Pilots |

plane type table

```

go
create procedure get_planetypes @num int
as
begin
set nocount on;
if @num = 1
begin
select *from planetypes
print 'query terminated succesfully (plane records are given)'
end

else if @num = 2
begin
select top 3 * from planetypes
print 'query terminated succesfully (plane records are given)'
end
else if @num = 3
begin
select t_ID as 'Type ID', typ as 'Type'
from planetypes where typ like 'a%'
print 'query terminated succesfully (plane records are given)'
end
else if @num = 4
begin

select t_ID as 'Type ID', typ as 'Type'

```

```

        from planetypes where typ like '_i%'
    print 'query terminated succesfully (plane records are given)'
end
else
begin
print 'Invalid try again with valid choice'
end
end;

-- different select command on plane types
--1 for getting all plane type record
--2 for getting top three
--3 for getting the name starting with A
--4 for getting the types with containing i and second place

exec get_planetypes 1
exec get_planetypes 2
exec get_planetypes 3
exec get_planetypes 4
exec get_planetypes 5

```

| | t_ID | typ |
|---|------|--------------|
| 1 | 1 | Airbus |
| 2 | 2 | Airline |
| 3 | 3 | Cargo craft |
| 4 | 4 | Fixed Wing |
| 5 | 5 | Fighter Jet |
| 6 | 6 | Float Craft |
| 7 | 7 | Concrobe |
| 8 | 8 | Business Jet |
| 9 | 9 | Boeing 757 |

| | t_ID | typ |
|---|------|-------------|
| 1 | 1 | Airbus |
| 2 | 2 | Airline |
| 3 | 3 | Cargo craft |

| | Type ID | Type |
|---|---------|---------|
| 1 | 1 | Airbus |
| 2 | 2 | Airline |

| | Type ID | Type |
|---|---------|-------------|
| 1 | 1 | Airbus |
| 2 | 2 | Airline |
| 3 | 4 | Fixed Wing |
| 4 | 5 | Fighter Jet |
| 5 | 12 | Biplane |
| 6 | 13 | Light Jet |

plane routes table

```
go
create procedure get_plane_routes @num int
as
begin
set nocount on;
if @num = 1
begin
    select route_id as 'Route ID',
           starting as 'Starting Location',
           destination as 'Ending location'
    from plane_routes
print 'query terminated succesfully (plane records are given)'
end

else if @num = 2
begin
    select top 3 * from plane_routes
    print 'query terminated succesfully (plane records are given)'
end
else if @num = 3
begin
    select route_id as 'Route ID',
           starting as 'Starting Location',
           destination as 'Ending location'
    from plane_routes
    where starting = 'Pakistan' or
           destination = 'Pakistan'
    print 'query terminated succesfully (plane records are given)'
end
else
begin
print 'Invalid try again with valid choice'
end
end;
-- different select command on plane routes

--1 for getting all plane routes record
--2 for getting top three
--3 for getting the the records starting with pakistan

exec get_plane_routes 1
exec get_plane_routes 2
exec get_plane_routes 3
```

137 %

Results Messages

| | Route ID | Starting Location | Ending location |
|----|----------|-------------------|-----------------|
| 1 | 1 | PAKISTAN | UAE |
| 2 | 2 | AMERICA | UAE |
| 3 | 3 | AFGHANISTAN | UAE |
| 4 | 4 | GERMANY | PORTUGAL |
| 5 | 5 | AUSTRIA | SAUDIA |
| 6 | 6 | HUNGARY | RUSSIA |
| 7 | 7 | CHINA | NEPAL |
| 8 | 8 | BANGLADESH | AMERICA |
| 9 | 9 | SOUTH AFRICA | CANADA |
| 10 | 10 | AUSTRALIA | ENGLAND |
| 11 | 11 | OMAN | QATTAR |

| | route_id | starting | destination |
|---|----------|-------------|-------------|
| 1 | 1 | PAKISTAN | UAE |
| 2 | 2 | AMERICA | UAE |
| 3 | 3 | AFGHANISTAN | UAE |

| | Route ID | Starting Location | Ending location |
|---|----------|-------------------|-----------------|
| 1 | 1 | PAKISTAN | UAE |

plane Engineer table

```

go
create procedure get_plane_Engineer @num int

as
begin
set nocount on;
if @num = 1
begin
        select * from plane_enginner
print 'query terminated succesfully (plane records are given)'
end

else if @num = 2
begin
        select engineer_id,Emp_Name,Qualification
        , plane_status
        from plane_enginner inner join
        engineer on plane_enginner.engineer_id = engineer.eng_Id
        inner join aeroplane on plane_enginner.plane_id =
        aeroplane.plane_id inner join Employees on
        engineer.emp = Employees.Emp_Id
        print 'query terminated succesfully (plane records are given)'
end

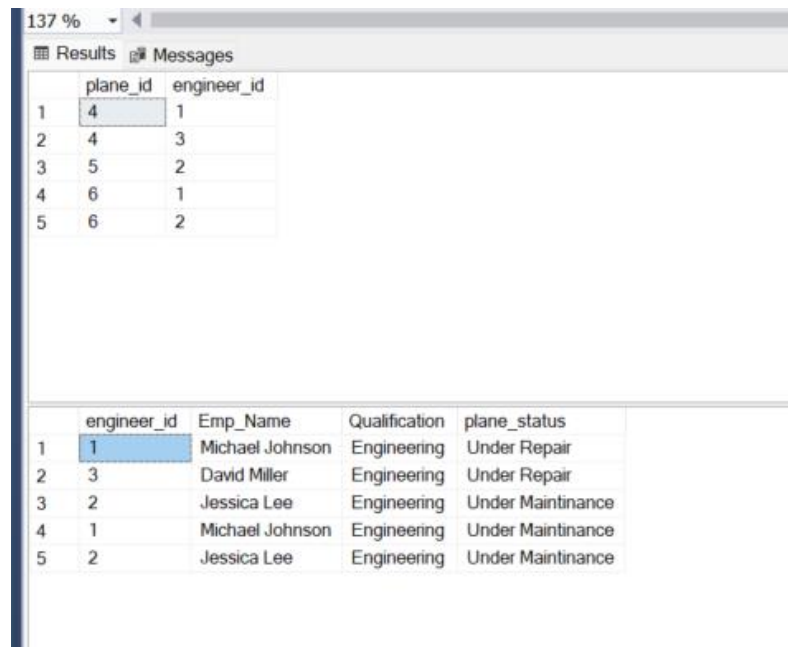
else
begin
print 'Invalid try again with valid choice'
end
end;

-- different select command on Plane Engineer Table

```

```
--1 for getting all records detail
--2 for getting the engineer which are working in aeroplane
```

```
exec get_plane_Engineer 1
exec get_plane_Engineer 2
```



| | plane_id | engineer_id |
|---|----------|-------------|
| 1 | 4 | 1 |
| 2 | 4 | 3 |
| 3 | 5 | 2 |
| 4 | 6 | 1 |
| 5 | 6 | 2 |

| | engineer_id | Emp_Name | Qualification | plane_status |
|---|-------------|-----------------|---------------|-------------------|
| 1 | 1 | Michael Johnson | Engineering | Under Repair |
| 2 | 3 | David Miller | Engineering | Under Repair |
| 3 | 2 | Jessica Lee | Engineering | Under Maintinance |
| 4 | 1 | Michael Johnson | Engineering | Under Maintinance |
| 5 | 2 | Jessica Lee | Engineering | Under Maintinance |

aeroplane table

```
go
create procedure get_aeroplane_information @num int
as
begin
if @num = 1
begin
select * from aeroplane
print 'query terminated succesfully (plane records are given)'
end

else if @num = 2
begin
select * from aeroplane where plane_status = 'under maintinance'
print 'query terminated succesfully (plane records are given)'
end

else if @num = 3
begin
select plane_status,pilot_Id,salary from aeroplane inner join pilots
on aeroplane.pilot = pilots.pilot_Id
print 'query terminated succesfully (plane records are given)'
end

else if @num = 4
begin
select plane_status, typ ,pilot_Id,salary from aeroplane inner join pilots
```

```

        on aeroplane.pilot = pilots.pilot_Id inner join planetypes
        on aeroplane.typ_id = planetypes.t_ID
        print 'query terminated succesfully (plane records are given)'
    end
else if @num = 5
    begin
        select plane_status, typ, starting as 'Starting', destination
        ,pilot_Id,salary from aeroplane inner join pilots
        on aeroplane.pilot = pilots.pilot_Id inner join planetypes
        on aeroplane.typ_id = planetypes.t_ID inner join
        plane_routes on aeroplane.route_id = plane_routes.route_id
        print 'query terminated succesfully (plane records are given)'
    end
else if @num = 6
    begin
        select plane_status, typ, starting as 'Starting', destination
        ,pilot_Id,Emp_Name as 'Pilot Name',salary from aeroplane inner join pilots
        on aeroplane.pilot = pilots.pilot_Id inner join planetypes
        on aeroplane.typ_id = planetypes.t_ID inner join
        plane_routes on aeroplane.route_id = plane_routes.route_id
        inner join Employees on pilots.emp = Employees.Emp_Id
        print 'query terminated succesfully (plane records are given)'
    end
else
    begin
        print 'Invalid try again with valid choice'
    end
end;

-- different select command on Plane Engineer Table

--1 for getting all record of aeroplane table
--2 for getting record which is under maintainance
--3 record using inner join between 2 tables
--4 record using inner join between 3 tables
--5 record using inner join between 4 tables
--6 record using inner join between 5 tables

exec get_aeroplane_information 1
exec get_aeroplane_information 2
exec get_aeroplane_information 3
exec get_aeroplane_information 4
exec get_aeroplane_information 5
exec get_aeroplane_information 6

```

137 %

Results Messages

| | plane_id | plane_status | pilot | typ_id | route_id |
|---|----------|-------------------|-------|--------|----------|
| 1 | 1 | Under Maintinance | 1 | 3 | 12 |
| 2 | 2 | Ready | 2 | 1 | 11 |
| 3 | 3 | ready | 3 | 2 | 10 |
| 4 | 4 | Under Repair | NULL | NULL | NULL |
| 5 | 5 | Under Maintinance | 2 | 4 | 9 |
| 6 | 6 | Under Maintinance | 1 | 5 | 8 |

| | plane_id | plane_status | pilot | typ_id | route_id |
|---|----------|-------------------|-------|--------|----------|
| 1 | 1 | Under Maintinance | 1 | 3 | 12 |
| 2 | 5 | Under Maintinance | 2 | 4 | 9 |
| 3 | 6 | Under Maintinance | 1 | 5 | 8 |

| | plane_status | pilot_id | salary |
|---|-------------------|----------|---------|
| 1 | Under Maintinance | 1 | 1350000 |
| 2 | Ready | 2 | 1235000 |
| 3 | ready | 3 | 1235000 |
| 4 | Under Maintinance | 2 | 1235000 |
| 5 | Under Maintinance | 1 | 1350000 |

| | plane_status | typ | pilot_id | salary |
|---|-------------------|-------------|----------|---------|
| 1 | Under Maintinance | Cargo craft | 1 | 1350000 |
| 2 | Ready | Airbus | 2 | 1235000 |
| 3 | ready | Airline | 3 | 1235000 |
| 4 | Under Maintinance | Fixed Wing | 2 | 1235000 |
| 5 | Under Maintinance | Figter Jet | 1 | 1350000 |

| | plane_status | typ | Starting | destination | pilot_id | salary |
|---|-------------------|-------------|------------|-------------|----------|---------|
| 1 | Under Maintinance | Cargo craft | BEHRAIN | BARMA | 1 | 1350000 |
| 2 | Ready | Airbus | OMAN | QATTAR | 2 | 1235000 |
| 3 | ready | Airline | AUSTRALIA | ENGLAND | 3 | 1235000 |
| 4 | Under Maintinance | Fixed Wing | SOUTH A... | CANADA | 2 | 1235000 |
| 5 | Under Maintinance | Figter Jet | BANGLAD... | AMERICA | 1 | 1350000 |

| | plane_status | typ | Starting | destination | pilot_id | Pilot Name | salary |
|---|-------------------|-------------|-----------|-------------|----------|---------------|---------|
| 1 | Under Maintinance | Cargo craft | BEHRAIN | BARMA | 1 | Robert Wilson | 1350000 |
| 2 | Ready | Airbus | OMAN | QATTAR | 2 | Daniel Brown | 1235000 |
| 3 | ready | Airline | AUSTR... | ENGLAND | 3 | Sophia Davis | 1235000 |
| 4 | Under Maintinance | Fixed Wing | SOUTH ... | CANADA | 2 | Daniel Brown | 1235000 |
| 5 | Under Maintinance | Figter Jet | BANGL... | AMERICA | 1 | Robert Wilson | 1350000 |

The End