

**Department of Computer Science and Engineering**

**COURSE CODE**  : CSE 212

**COURSE TITLE**  : Database Systems Lab

Name of Project**:** Company Management System

**Date of Submission** : 04.02.2020

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**Department of CSE**

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PROJECT SENARIO

We all works in any company. There are many department, employee in a company. Every employee works on a project under a department in a company. So a company needs a proper management system to maintain its works properly. So, we are creating a **company management system** to show how a company works with a help of er diagram & schema diagram.

In our entity relation diagram, we show how a company works.

**Entities & their relationship:**

We have many entities for the management .For example employee, department and project &they have many relation.

* Many employee works for a certain department and all department managed by a supervisor. So according to **works for relation** employee & department has **many to many relation.**
* In a company many employee works on a project .In the other hand an employee can works on many project. So according to **works on** **relation** employee & project has **many to many relation.**
* Normally a department controls many project .So they have **one to one relation** according to **controls relation.**

According to er diagram we form a schema diagram for the system-

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* **Department** (DepartmentID, Dept\_Name, LocationID, EmployeeNo) table has all information about a department.
* Through **employee** (FirstName, Initials, LastName, designation, salary, Street, Postal Code, DepartmentID) table we can know all employee information who work in a company.
* The **project** (ProjectID, Project\_name, DepartmentId) table can give us all about a project.

According to relation many table formed like **works on**, **works for** & **postal code**.

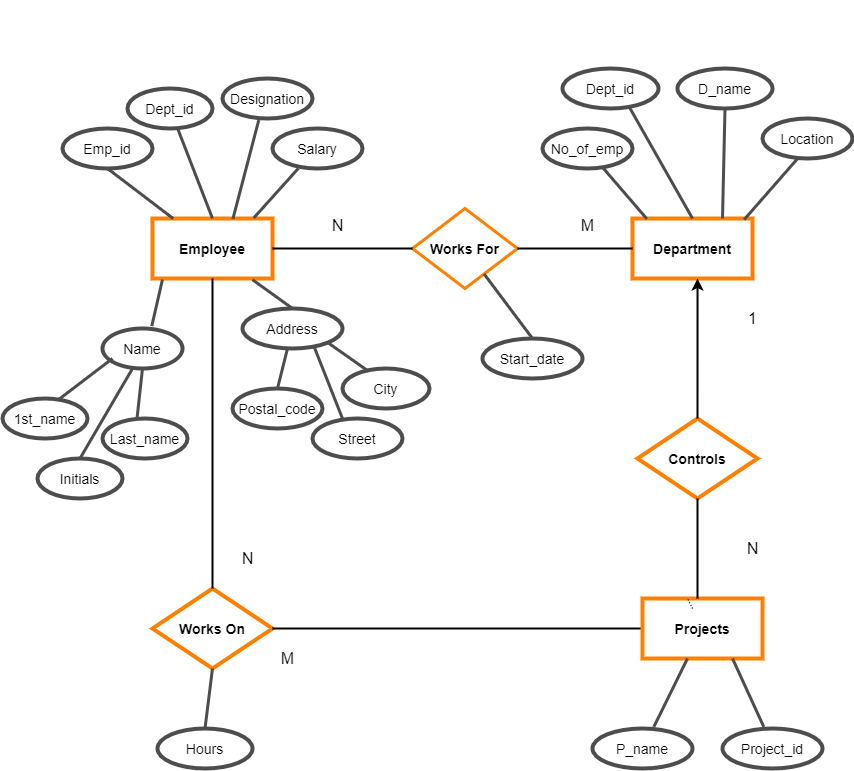
This is our overall er & schema diagram for a company management system.

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**ER Diagram**

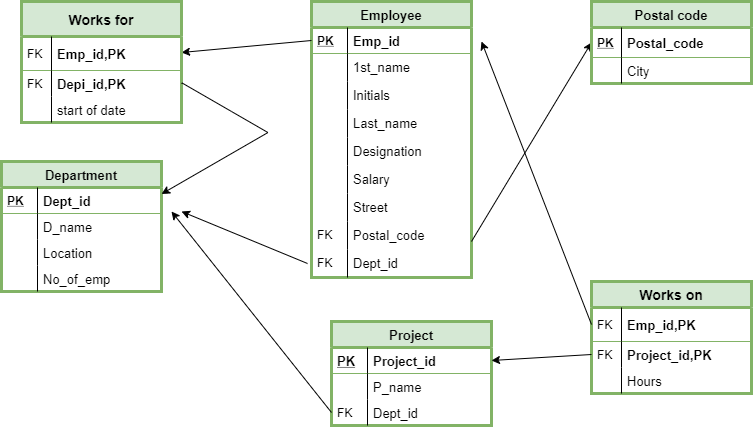
E

EER



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**Schema Diagram**



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**Create database & table:**

create database company\_Management

use company\_Management

GO

**Create table Department**

(

DepartmentID varchar(50) primary key,

Dept\_Name varchar(50),

LocationID varchar(50),

EmployeeNo int,

);

**create table PostalCode**

(

PostalCode varchar(50) primary key,

city varchar(50)

);

**create table Employee**

(

EmployeeID varchar(50) primary key,

FirstName varchar(50),

Initials varchar(50),

LastName varchar(50),

designation varchar(50),

salary money,

Street varchar(50),

PostalCode varchar(50),

DepartmentID varchar(50),

foreign key(PostalCode) references PostalCode(PostalCode),

foreign key(DepartmentID) references Department(DepartmentID)

);

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**create table project**

(

ProjectID varchar (50) primary key,

Project\_name varchar(50),

DepartmentId varchar(50),

foreign key(DepartmentID) references Department(DepartmentID )

);

**create table workson**

(

EmployeeID varchar(50),

ProjectID varchar(50),

hours varchar(50),

foreign key(EmployeeID) references Employee(EmployeeID),

foreign key(ProjectID) references Project(ProjectID ),

primary key(EmployeeID,ProjectID)

);

**create table worksfor**

(

EmployeeID varchar(50),

DepartmentId varchar(50),

startDate varchar(50),

foreign key(EmployeeID) references Employee(EmployeeID),

foreign key(DepartmentId ) references Department(DepartmentId ),

primary key(EmployeeID,DepartmentId)

);

**DATA INSERT:**

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**insert into Department**

**values**

('1&2-PD' , 'Production', 'YUKO LEATHER GOODS LTD' , 200),

('3-R&D', 'Research and Development', 'YUKO LEATHER GOODS LTD', 80),

('4-M&S', 'Marketing', 'YUKO LEATHER GOODS LTD', 80),

('5-HR','Human Resources Management','YUKO LEATHER GOODS LTD', 70),

('6-AF','Accouting & Finance','YUKO LEATHER GOODS LTD', 60);

**insert into PostalCode**

**values**

('1206','Dhaka'),

('1209','Dhaka'),

('1213', 'Dhaka'),

('1232','Dhaka'),

('1310','Dhaka'),

('1219','Dhaka'),

('1211','Dhaka'),

('1207','Dhaka'),

('1225','Dhaka'),

('1222','Dhaka'),

('1223','Dhaka'),

('1212','Dhaka'),

('4321','Chittagong'),

('4211','Chittagong'),

('3543','Chittagong'),

('3831','Chittagong'),

('7210','Khulna'),

('7032','Khulna'),

('7222','Khulna'),

('7620','Khulna'),

('6422','Rajshahi'),

('6650','Rajshahi'),

('6680','Rajshahi'),

('6330','Rajshahi');

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**insert into employee**

**values**

('P1', 'Anisul', 'AI' , 'Islam', 'Production Manager', 70000, 'Dhanmondi-15','1209' ,'1&2-PD'),

('P2', 'Ruhul', 'RA','Alam', 'Assistant Plant Manager',45000, 'Dhanmondi-07','1209', '1&2-PD'),

('P3', 'Shariar', 'SI', 'Istam','Production engineers',55000, 'Gulshan-01','1213', '1&2-PD'),

('P4','Anisur','AR','Rahman','Production engineer',55000,'Banani-11','1219','1&2-PD'),

('P5','Lara','LH','Hasan','Worker',20000,'Bangra-11','3543','1&2-PD'),

('P6','Tonni','TP','Paul','Worker',20000,'Arpara-11','7620','1&2-PD'),

('P7','Mariam','MM','Mim','Worker',20000,'Gandaria-33','1206','1&2-PD'),

('P8','Friha','FR','Rini','Worker',20000,'Amin road-12','4211','1&2-PD'),

('P9','Monisha','MR','Roy','Worker',20000,'Arpara-08','7620','1&2-PD'),

('RD1','Afsana','AA','Ahmed', 'Scientist',100000, 'Gulsan-02','1310','3-R&D'),

('RD2','Kawser','KI','Islam','Scientist',100000,'Khilgaon-01','1213','3-R&D'),

('RD3','Saib','SA','Ali','Engineer',70000,'Rajshahi sadar-09','6650','3-R&D'),

('MS1','Hasan','HA','Ali','Coordinator',50000,'Alamdanga-11','7210','4-M&S'),

('MS2','Tonmoy','TR','Rahman','Sales & Marketing Executive',55000,'Amin road-12','4211','4-M&S'),

('MS3','Anika','AB','Binte','Senior Executive',65000,'Banwarinagar-04','6650','4-M&S'),

('HR1','Tonnima','TA','Akter','Officer',45000,'Abutorab-07','4321','5-HR'),

('HR2','Tuba','TM','Mullick','HR Executive',50000,'Andulbaria-07','7222','5-HR'),

('AF1','Yesmin','YS','Sarowar','Assistant Officer',50000,'Abdulpur-01','6422','6-AF'),

('AF2','Anik','AK','Khandokar','Regional Accountant',30000,'Alaiarpur-44','3831','6-AF'),

('AF3','Sreejoy','SH','Howlader','Senior Manager',60000,'Bholahat-33','6330','6-AF');

**insert into project**

**values**

( 'BG', 'Genuine Leather Bags', '3-R&D'),

('LW', 'Genuine Leather Wallets' , '3-R&D'),

('BT', 'Genuine Leather Belt', '3-R&D'),

('AS', 'Genuine Leather Accessories', '3-R&D'),

('JT','Genuine Leather Jacket' , '3-R&D');

**insert into worksfor**

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**Values**

('P1', '1&2-PD', '01-01-2015'),

('P2', '1&2-PD', '02-05-2012'),

('P3', '1&2-PD', '02-05-2012'),

('P4', '1&2-PD', '02-04-2010'),

('P5', '1&2-PD', '02-04-2010'),

('P6', '1&2-PD', '02-05-2010'),

('P7', '1&2-PD', '02-05-2010'),

('P8', '1&2-PD', '02-05-2010'),

('P9', '1&2-PD', '02-05-2010'),

('RD1', '3-R&D','03-01-2013'),

('RD2', '3-R&D','03-02-2013'),

('RD3', '3-R&D','03-01-2014'),

('MS1','4-M&S','01-01-2015'),

('MS2','4-M&S','01-02-2015'),

('MS3','4-M&S','01-01-2015'),

('HR1','5-HR','01-01-2013'),

('HR2','5-HR','01-01-2013'),

('AF1','6-AF','03-03-2012'),

('AF2','6-AF','03-03-2012'),

('AF3','6-AF','03-03-2012');

**insert into workson**

**values**

('P1','BG','360 hours'),

('P2','BG','360 hours'),

('P3','BG','360 hours'),

('P4','BG','360 hours'),

('RD1','BG','360 hours'),

('RD2','BG','360 hours'),

('RD3','BG','360 hours'),

('P1','LW','240 hours'),

('P2','LW','240 hours'),

('P3','LW','240 hours'),

('P4','LW','240 hours'),

('RD1','LW','240 hours'),

('RD2','LW','240 hours'),

('RD3','LW','3240 hours'),

('P1','JT','360 hours'),

('P2','JT','360 hours'),

('P3','JT','360 hours'),

('P4','JT','360 hours'),

('RD1','JT','360 hours'),

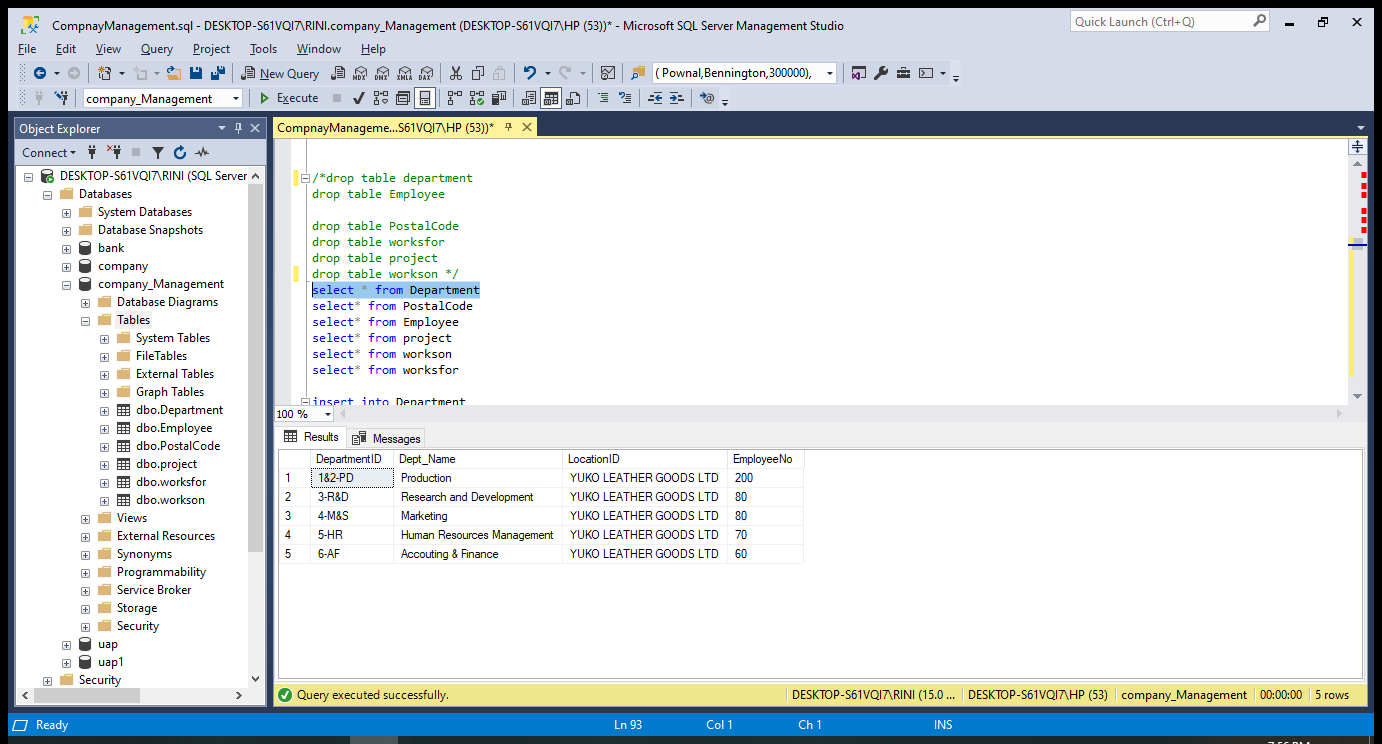
('RD2','JT','360 hours'),

('RD3','JT','360 hours');

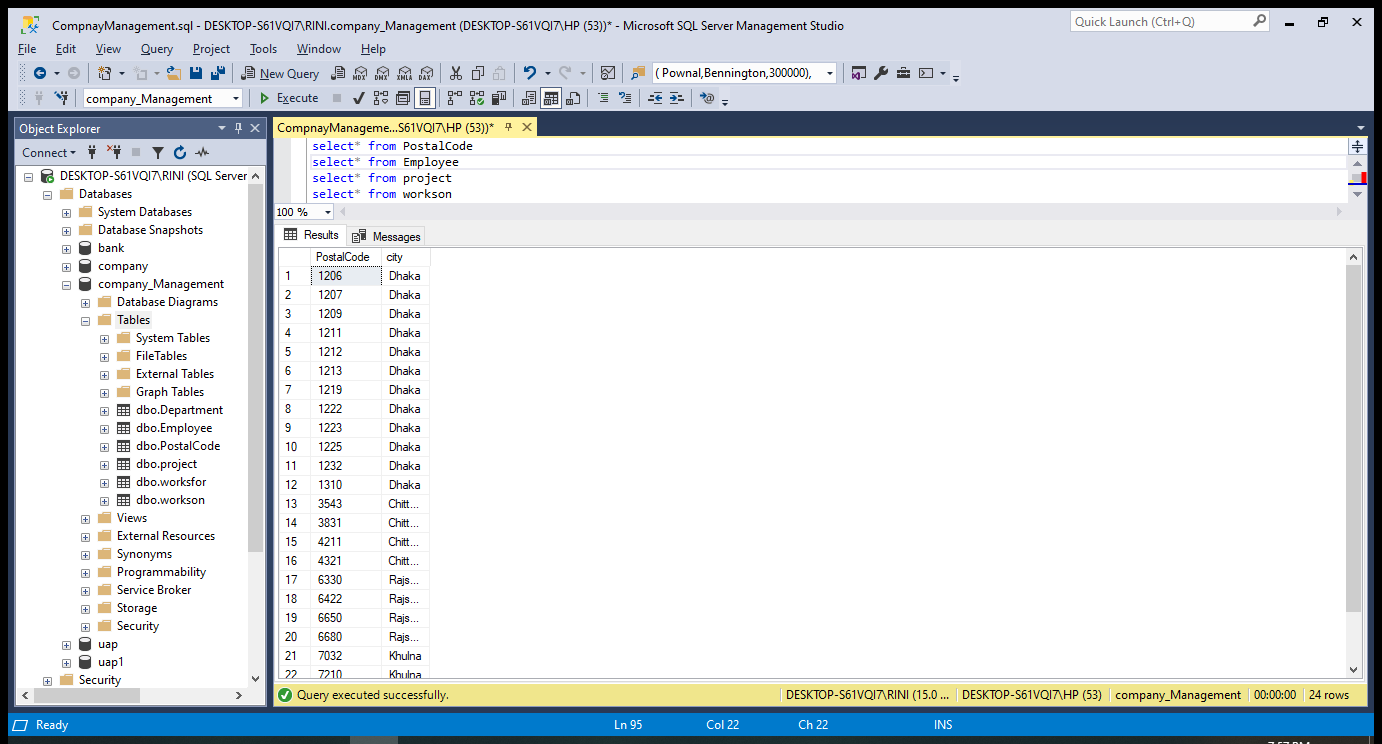
**Select from table:**

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**select \* from Department**

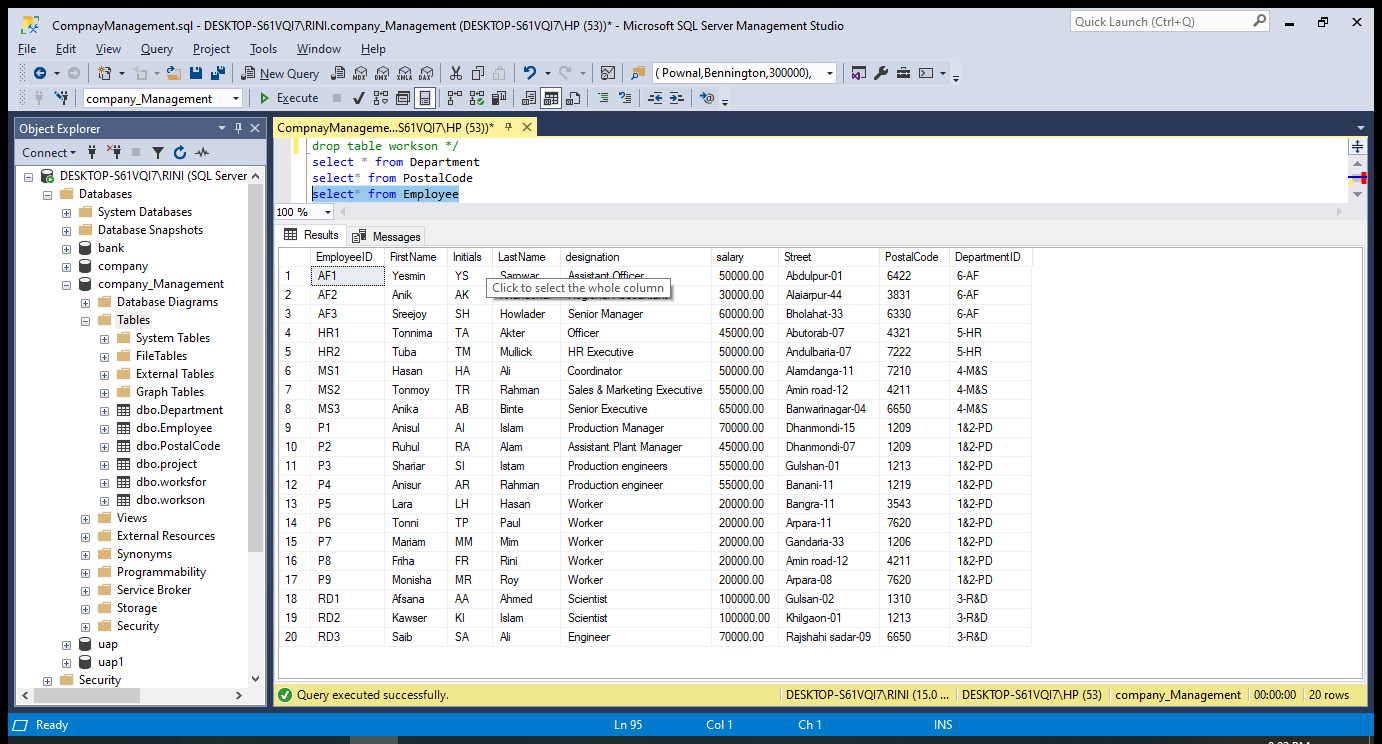


**select \* fromPostalCode**

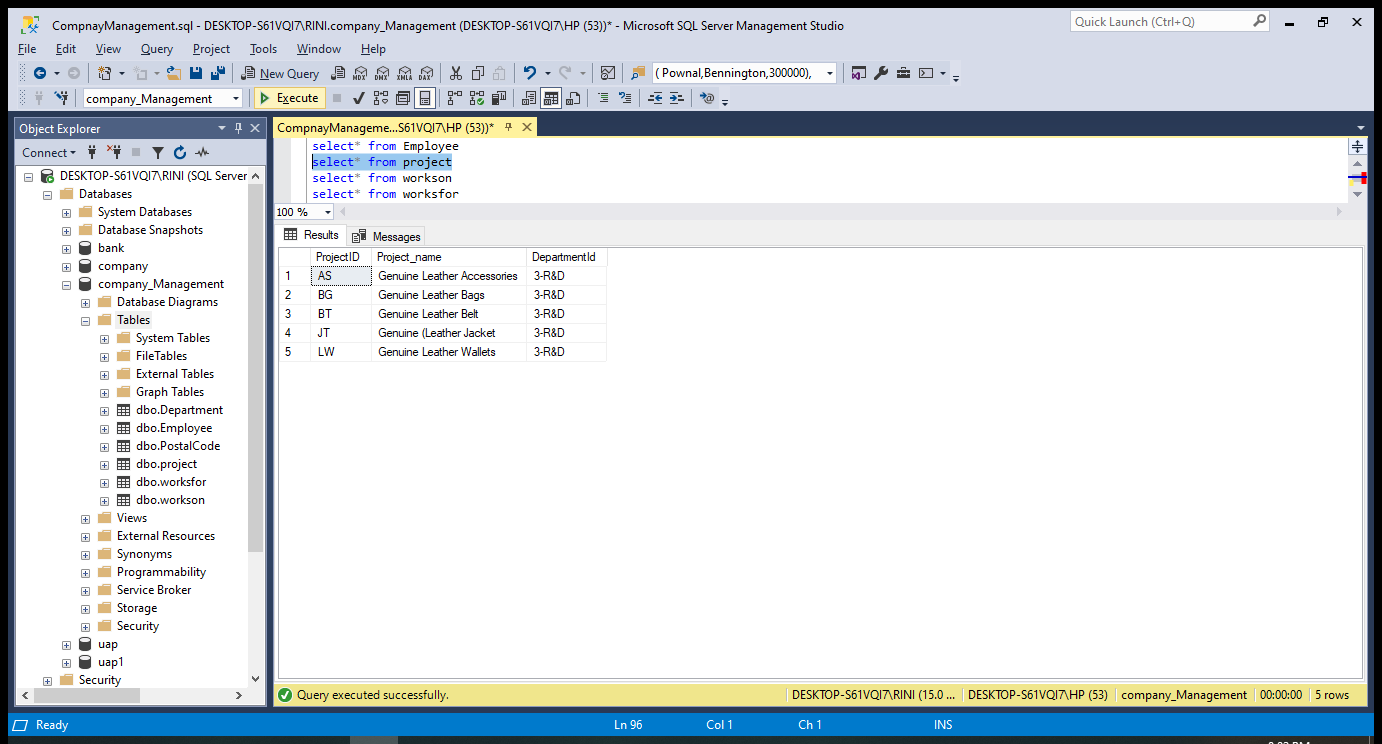


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**select\* from Employee**

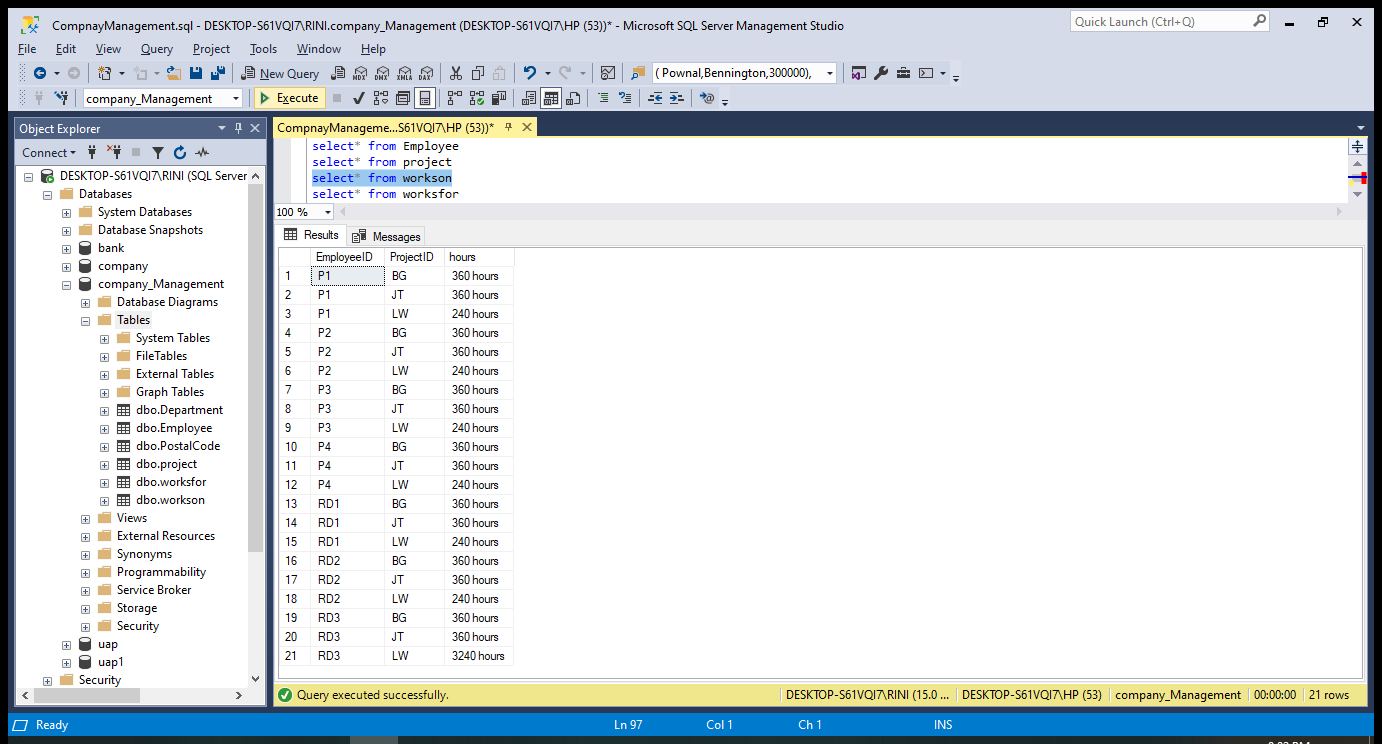


**select\* from project**

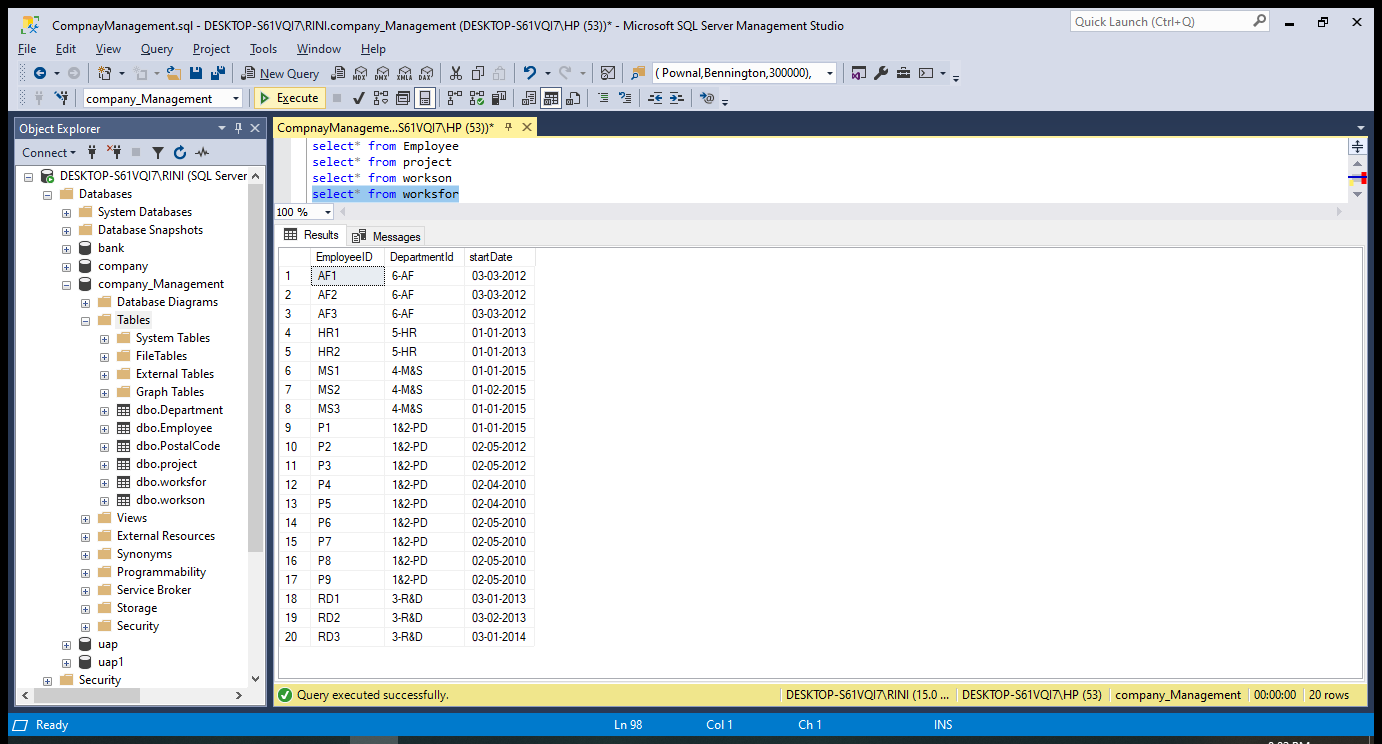


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**select\* from workson**



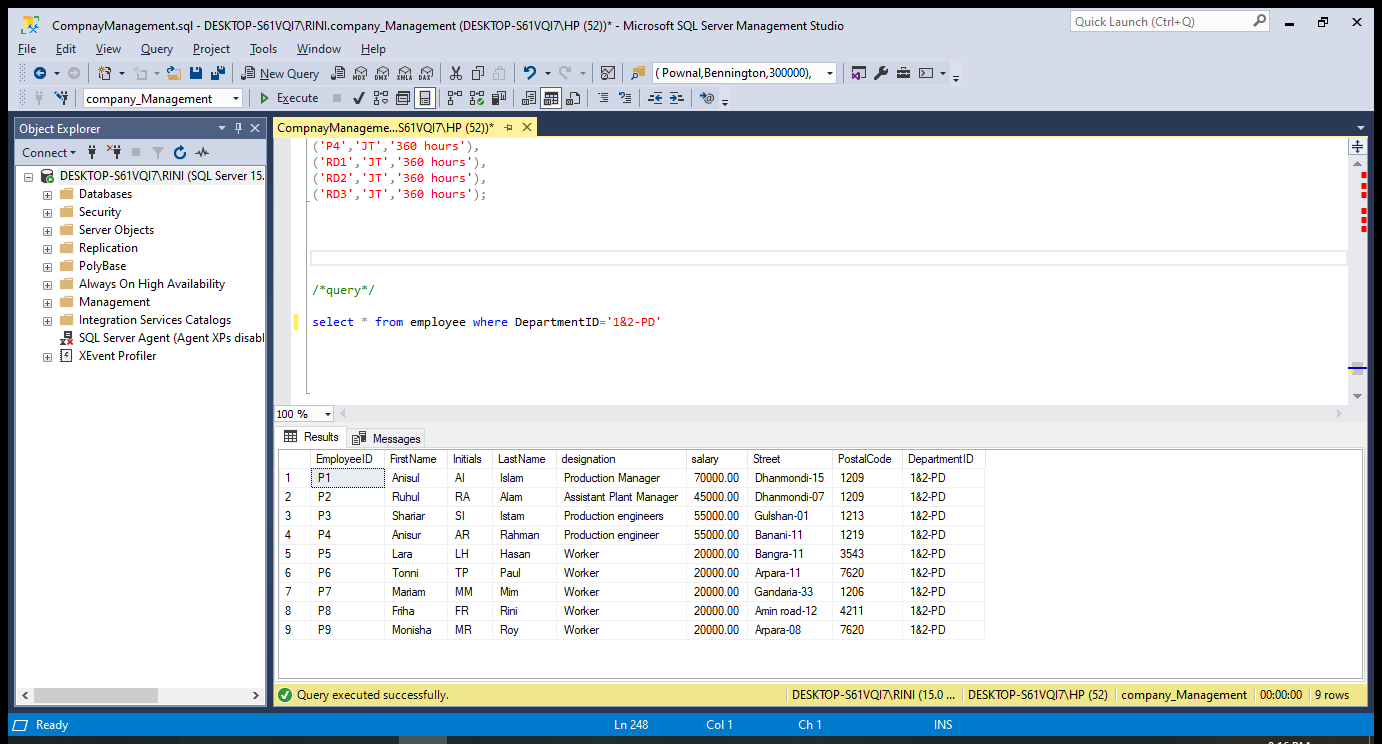
**select\* from worksfor**



**Query**

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**1. Show all employee information where department ID=** '1&2-PD'

select \* from employee where DepartmentID='1&2-PD'

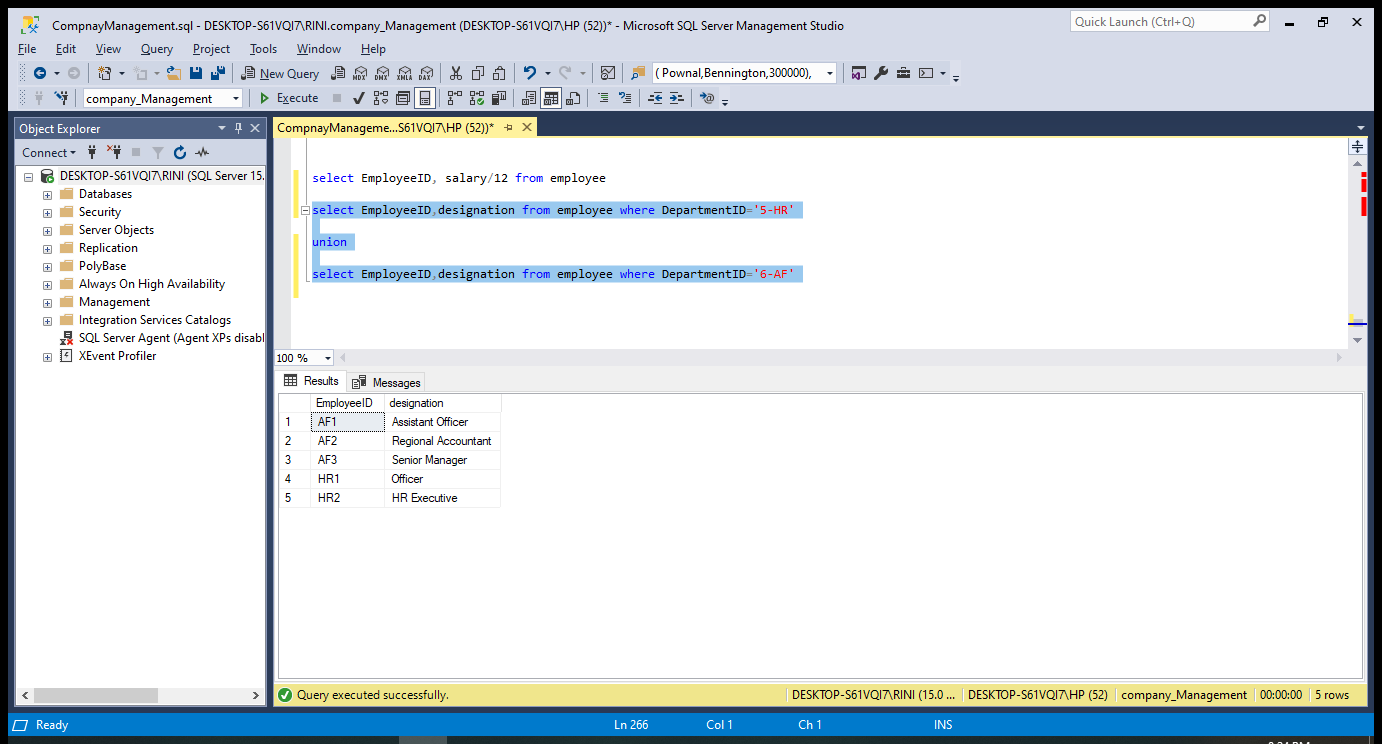
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**2. Show employed id, designation where department id=’5-HR’ or ‘6-AF’**

select EmployeeID,designation from employee where DepartmentID='5-HR'

union

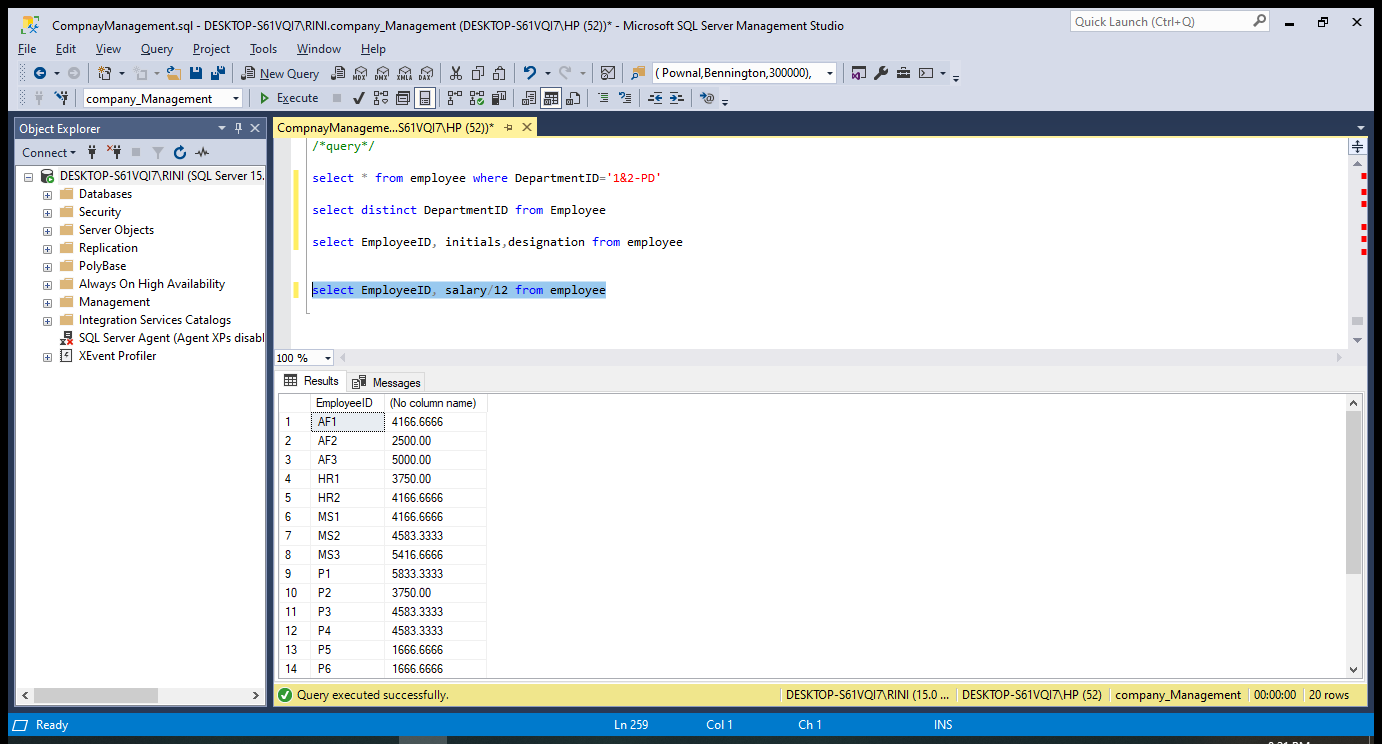
select EmployeeID,designation from employee where DepartmentID='6-AF'

****

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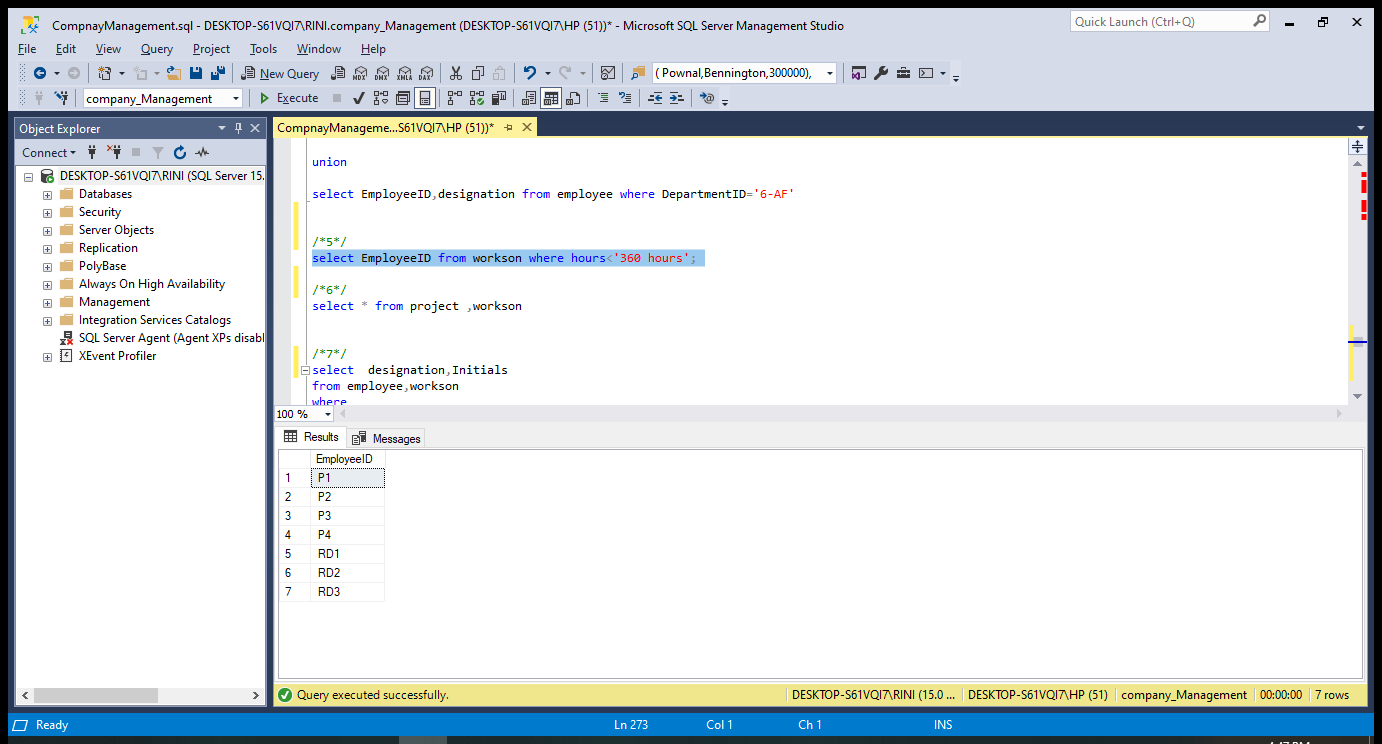
**3. Show employed id, monthly salary**

select EmployeeID, salary/12 from employee

****

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**4. Show employed id who works on a project less than 360 hours**

select EmployeeID from workson where hours<'360 hours';****

**5. Show designation, initials of those employees who involved in project ‘BG’ and who have salary more than 900000**

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select designation,Initials

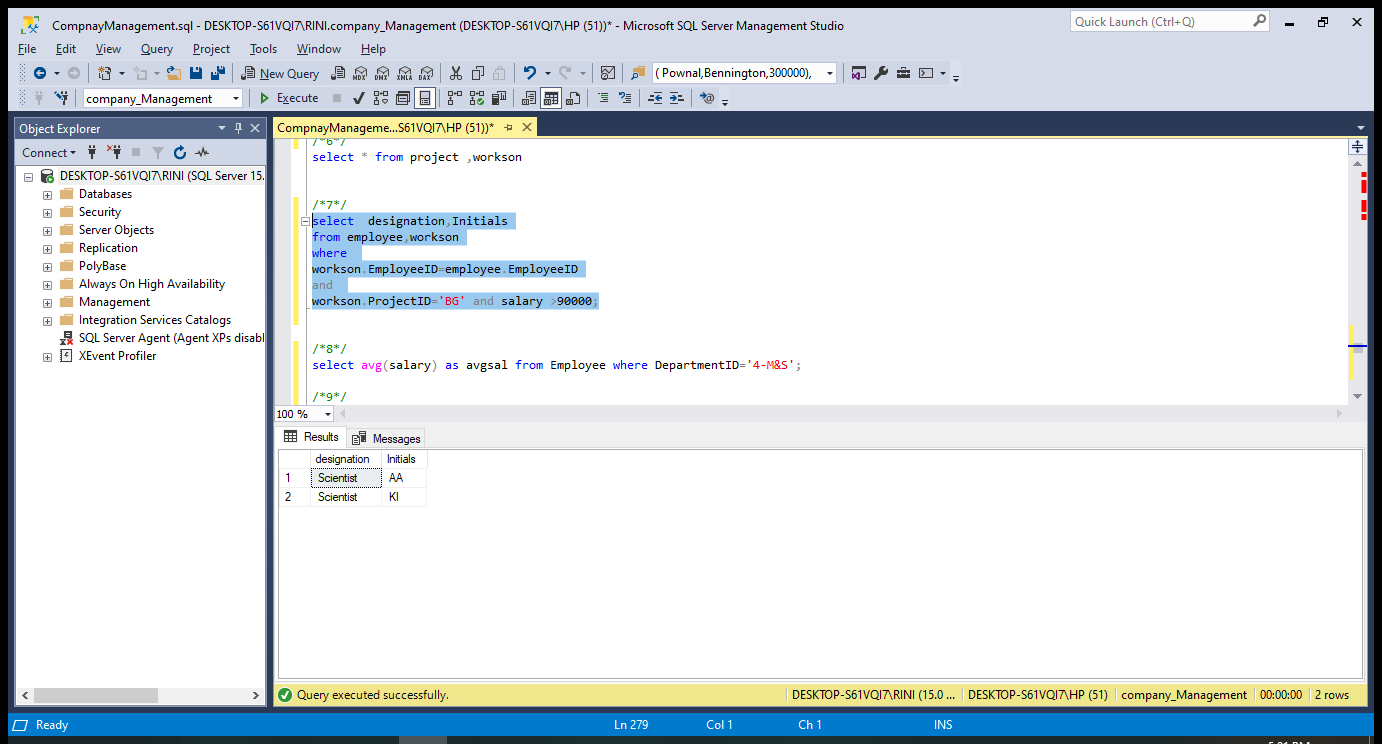
from employee,workson

where

workson.EmployeeID=employee.EmployeeID

and

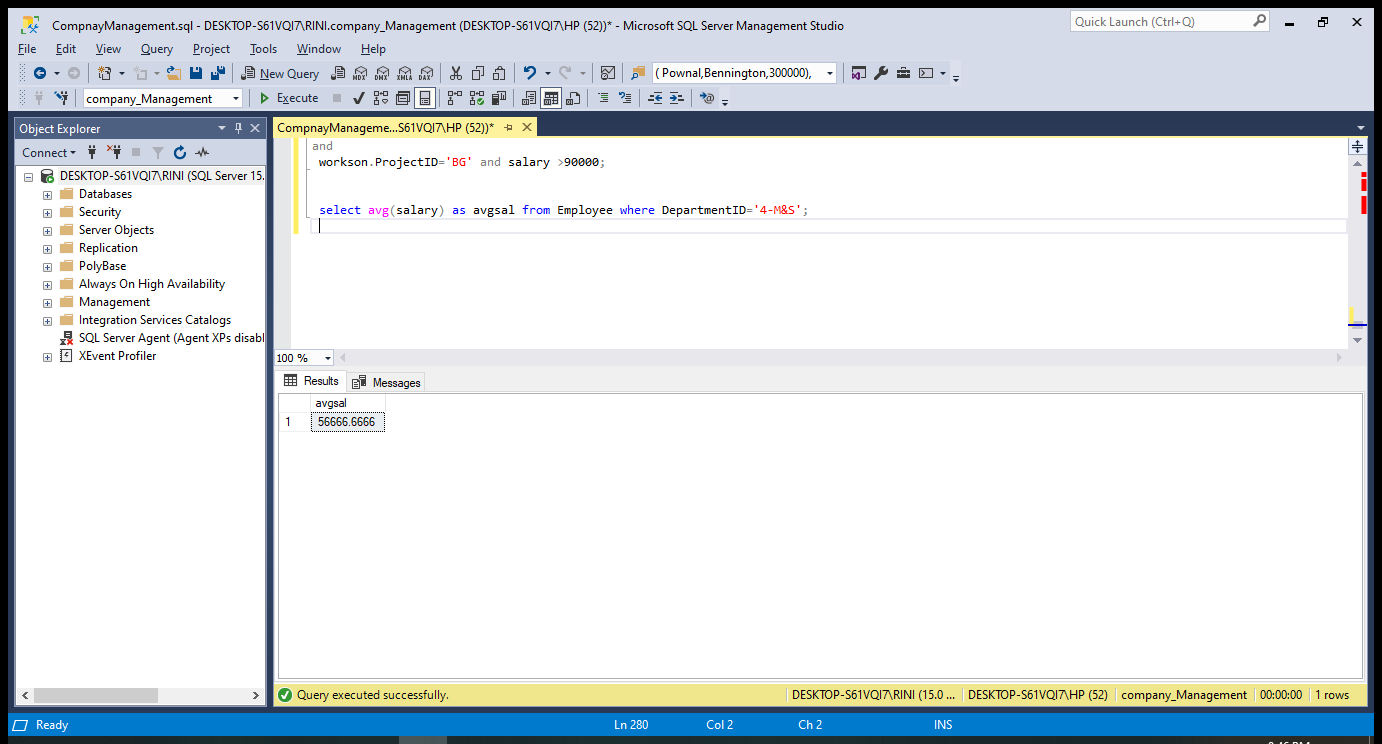
workson.ProjectID='BG' and salary >90000;

****

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**6. Show average salary of department id=’4-M&S’**

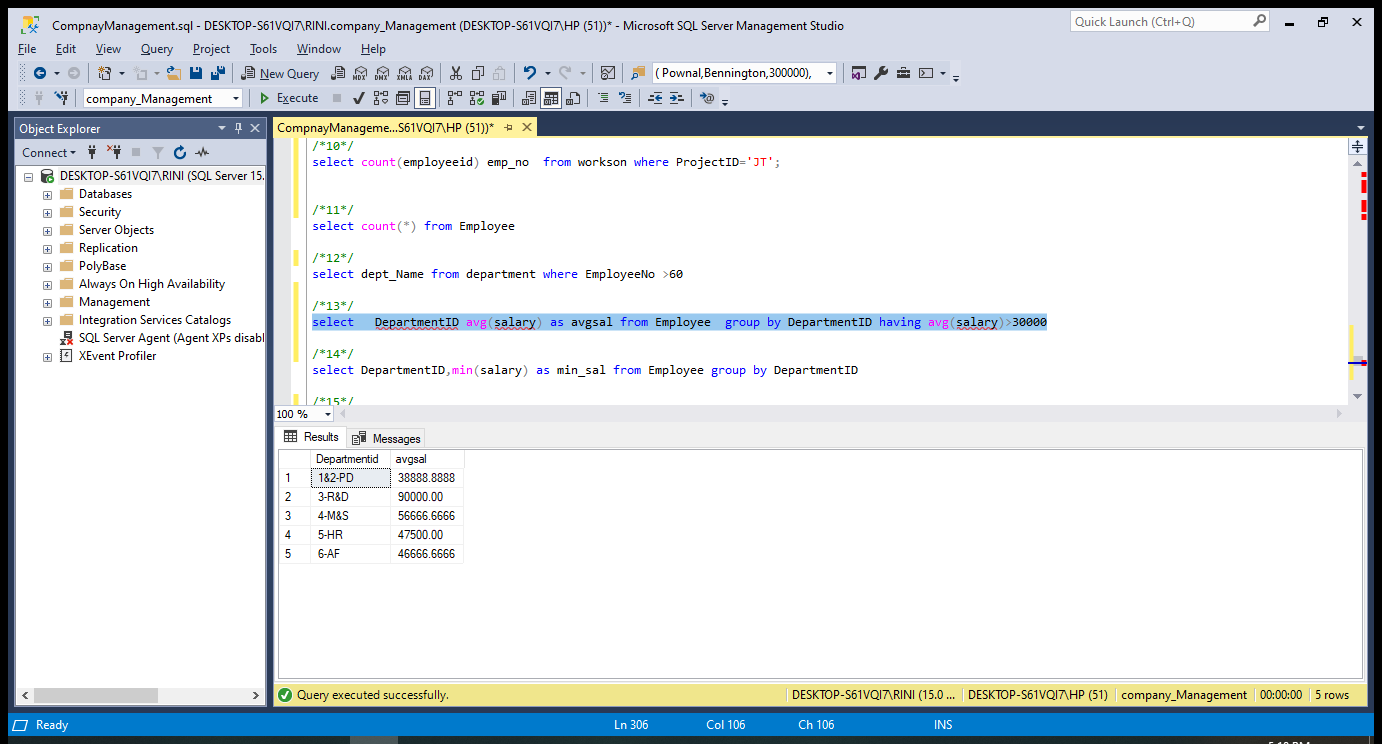
select avg(salary) as avgsal from Employee where DepartmentID='4-M&S';



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**7. Show average salary of every department having average salary more than 30000**

select Departmentid , avg(salary) as avgsal from Employee group by DepartmentID having avg(salary)>30000

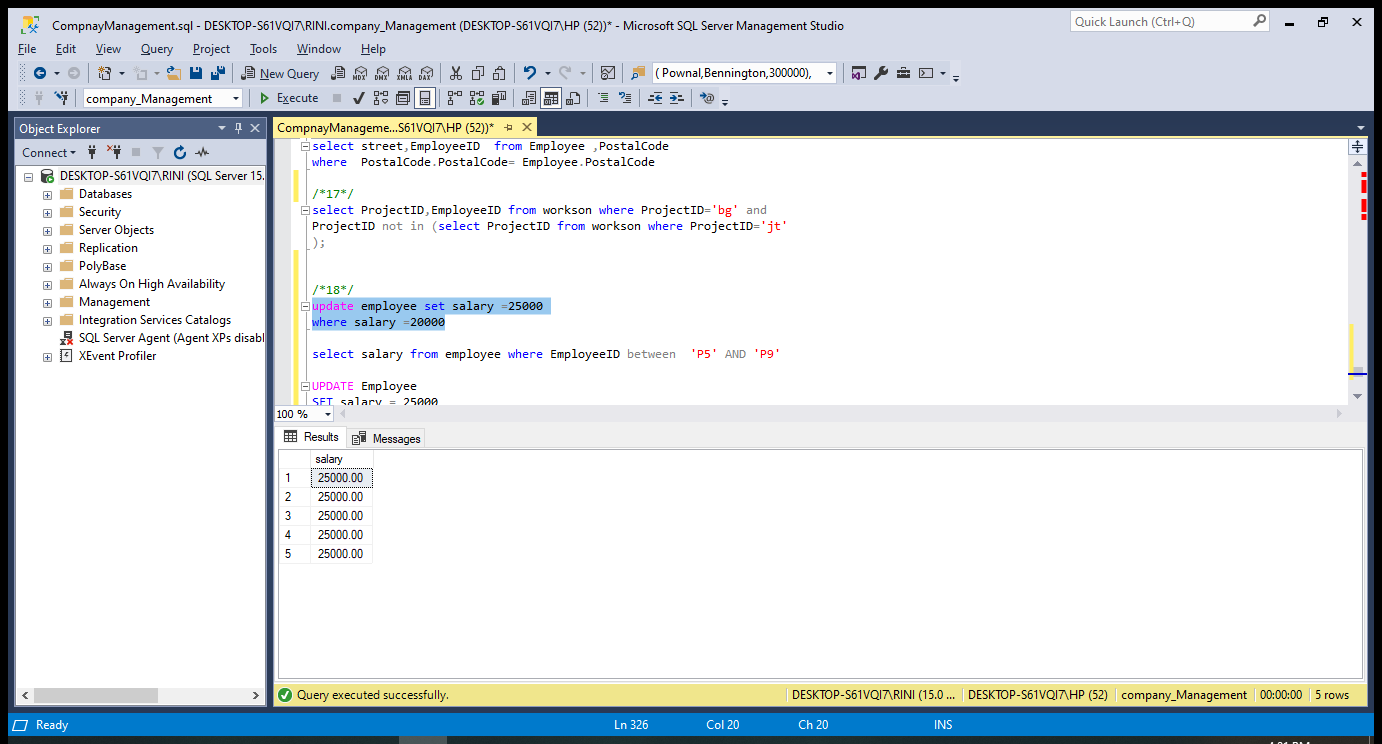


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**8. Update salary 25000 where salaries are =20000**

update employee set salary =25000

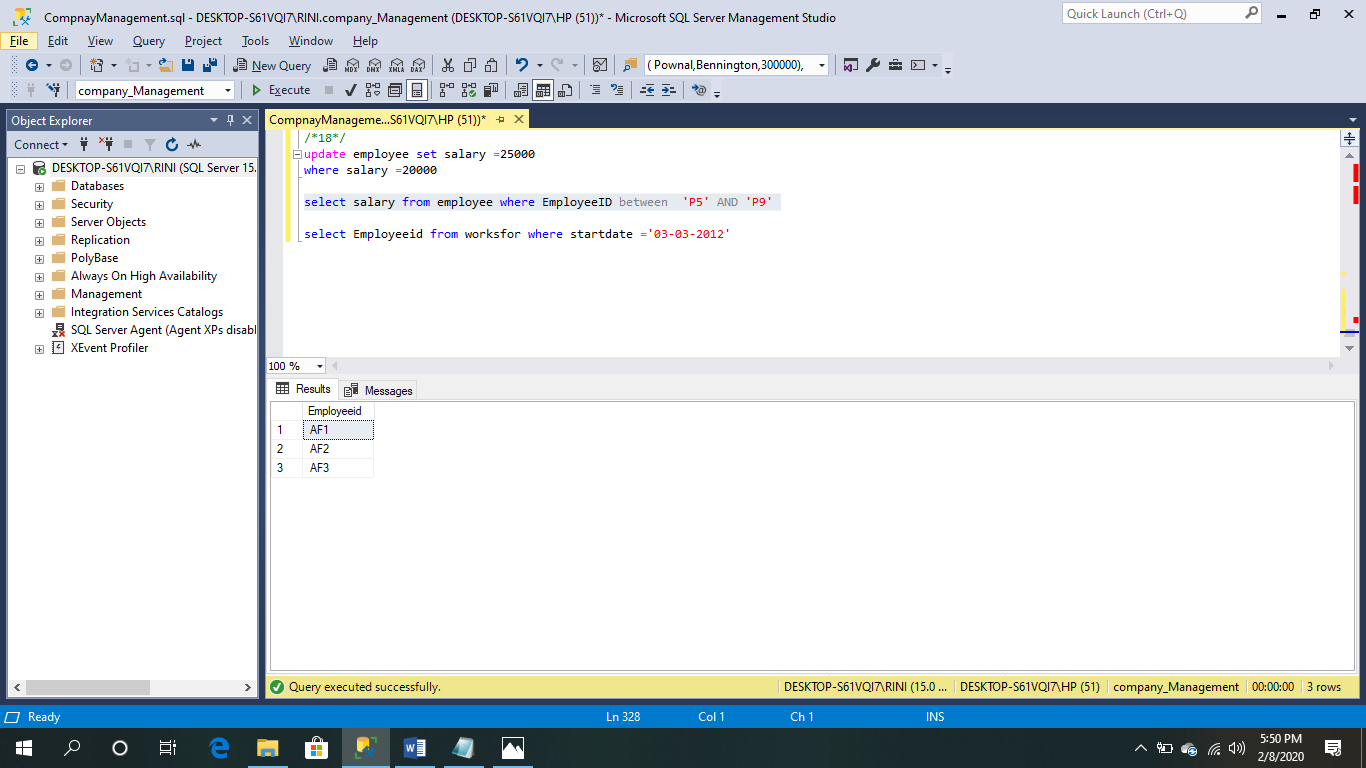
where salary =20000



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**9. Show salary where employee id between ‘p5’ and ‘p6’**

select salary from employee where EmployeeID between 'P5' AND 'P9'



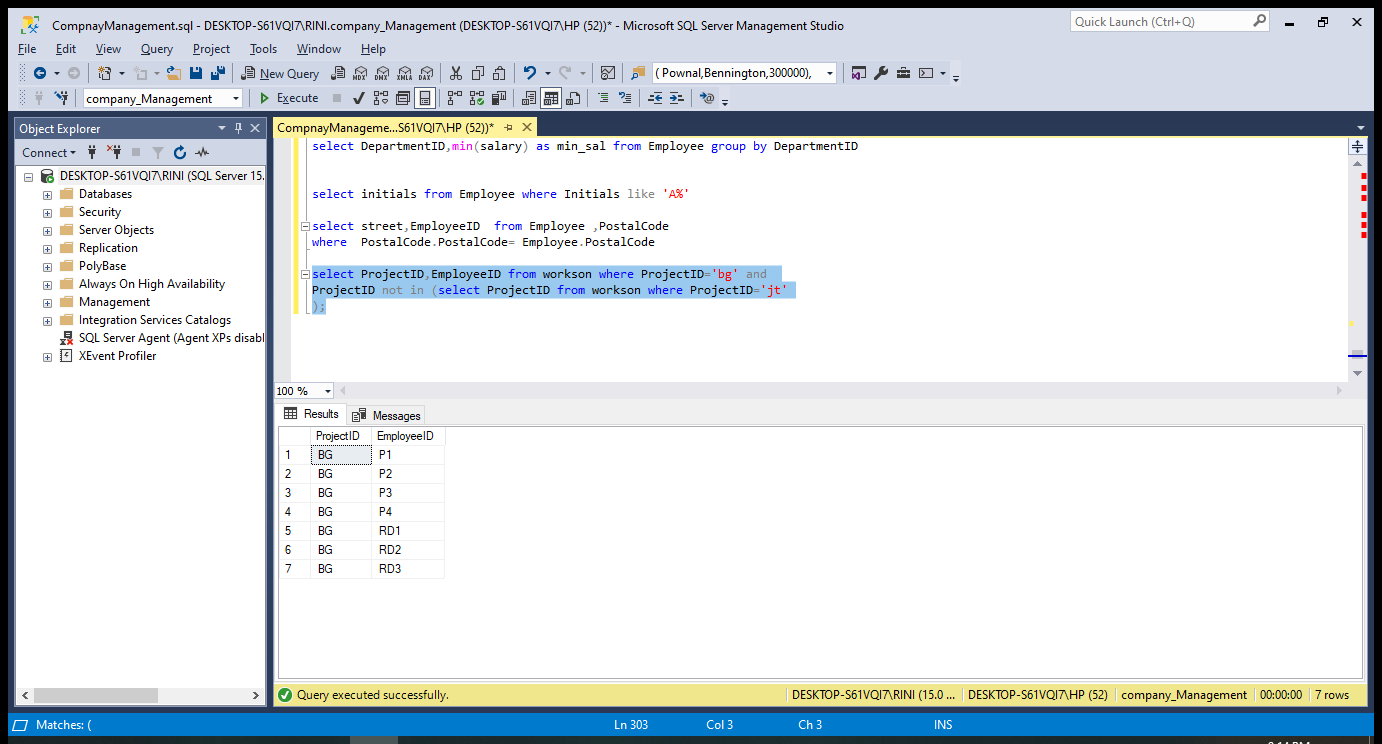
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**10. Show project id ,employee id who works on a project ‘BG’ and not in ‘JT’**

select ProjectID,EmployeeID from workson where ProjectID='bg' and

ProjectID not in (select ProjectID from workson where ProjectID='jt'

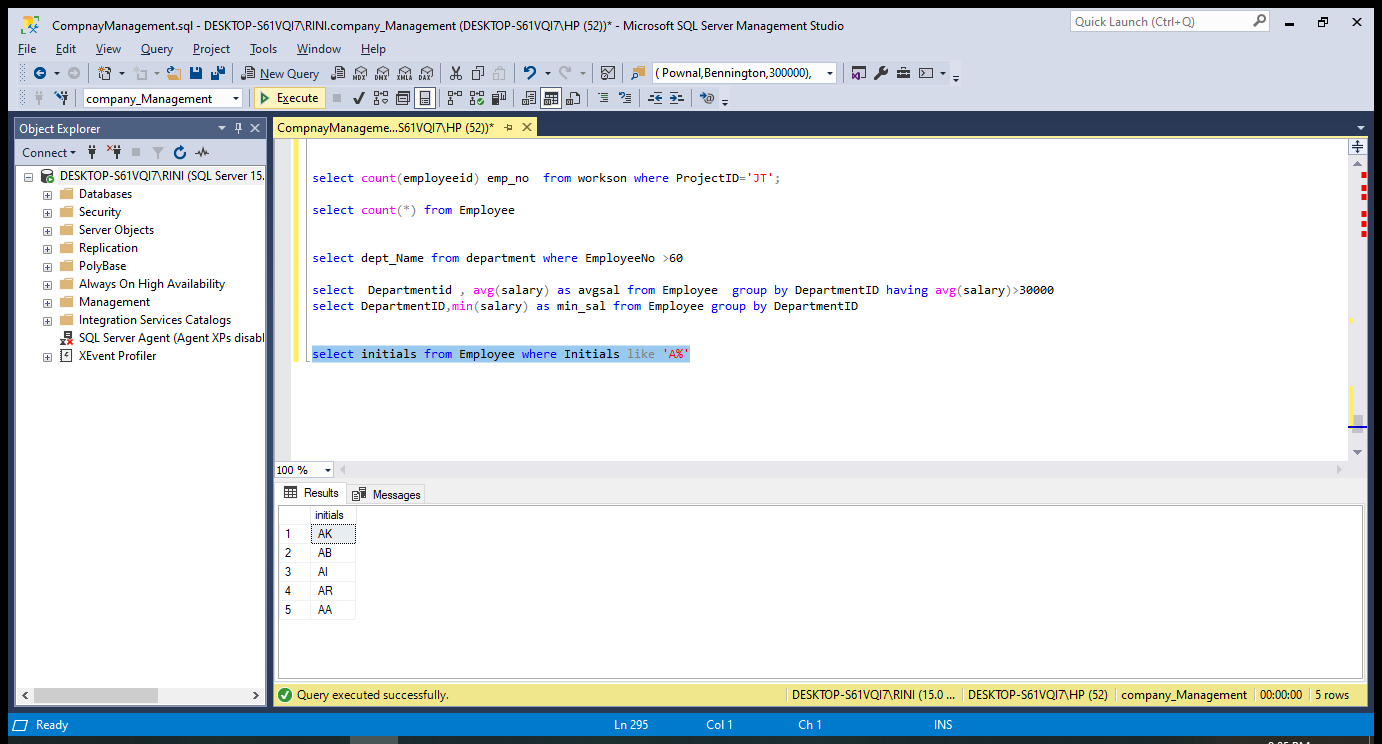
);



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**11. Show initials which start with an ‘A’**

select initials from Employee where Initials like 'A%'



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**12. Show employee id who’s start date is** ='03-03-2012'

select Employeeid from worksfor where startdate ='03-03-2012'

