---- Team\_12 Capgemini\_Company

create database [Team\_12 Capgemini\_Company]

use [Team\_12 Capgemini\_Company]

go

-- Data Defination Language (DDL)

create table Employee(

EmployeeID nvarchar(10) not null primary key check(EmployeeID like ('E[0-9][0-9]-[0-9][0-9][0-9]')),

[Name] varchar(100) not null,

[Address] nvarchar(150) not null,

Birth\_Date date not null,

Salary money not null,

Phone\_No nvarchar(15) not null unique check(Phone\_No like ('03[0-9][0-9]-[0-9][0-9][0-9][0-9][0-9][0-9][0-9]'))

)

create table Project(

ProjectID int identity(1,1) primary key not null,

Project\_Name nvarchar(50) not null unique,

Starting\_Date date not null

)

create table Pro\_Emp(

Pro\_Emp\_ID int identity(1,1) primary key not null,

ProjectID int foreign key references Project(ProjectID),

EmployeeID nvarchar(10) foreign key references Employee(EmployeeID)

)

create table Project\_Manager(

Manager\_ID int identity(100,1) primary key not null,

[Name] nvarchar(100) not null,

Gender varchar(6) check(Gender in ('M', 'F', 'm', 'f', 'male', 'female', 'MALE', 'FEMALE', 'Male', 'Female')) not null,

[Address] nvarchar(150) not null,

Phone\_No nvarchar(15) not null unique check(Phone\_No like ('03[0-9][0-9]-[0-9][0-9][0-9][0-9][0-9][0-9][0-9]'))

)

create table Pro\_Man(

Pro\_Man\_ID int identity(1,1) primary key not null,

ProjectID int foreign key references Project(ProjectID),

ManagerID int foreign key references Project\_Manager(Manager\_ID)

)

create table Resources(

ResourceID int identity(1,1) primary key not null,

Resource\_Type nvarchar(10) not null check(Resource\_Type in ('Software', 'SOFTWARE', 'software', 'Hardware', 'HARDWARE', 'hardware')),

Price money default 10000,

Brand nvarchar(30)

)

create table Pro\_Res(

Pro\_Res\_ID int identity(1,1) primary key not null,

ProjectID int foreign key references Project(ProjectID) not null,

ResourceID int foreign key references Resources(ResourceID) not null,

Date\_Of\_Use date default getdate() not null

)

create table IT\_Department(

IT\_Dept\_ID int primary key not null,

Director varchar(100) not null,

Director\_Contact\_No nvarchar(15) not null unique check(Director\_Contact\_No like ('03[0-9][0-9]-[0-9][0-9][0-9][0-9][0-9][0-9][0-9]')),

Department\_Mail nvarchar(30) not null check (Department\_Mail like ('\_\_%@\_\_%.\_\_%')),

Budget money default 1000000

)

create table Pro\_Dept(

Pro\_Dept\_ID int identity(1,1) primary key not null,

ProjectID int foreign key references Project(ProjectID) not null,

IT\_Dept\_ID int foreign key references IT\_Department(IT\_Dept\_ID) not null

)

create table Client(

ClientID nvarchar(10) not null primary key check(ClientID like ('C[0-9][0-9]-[0-9][0-9][0-9]')),

[Name] varchar(100) not null,

Gender varchar(2) check(Gender in ('M', 'F')) not null,

[Address] nvarchar(150) not null,

Phone\_No nvarchar(15) not null unique check(Phone\_No like ('03[0-9][0-9]-[0-9][0-9][0-9][0-9][0-9][0-9][0-9]'))

)

create table [Contract](

ContractID int identity(1,1) primary key not null,

ProjectID int foreign key references Project(ProjectID) not null,

ClientID nvarchar(10) foreign key references Client(ClientID) not null,

Contract\_Date date default getdate()

)

-- Data Manipulation Language (DML)

insert into Employee(EmployeeID, [Name], [Address], Birth\_Date, Salary, Phone\_No)

values ('E20-001', 'Bareerah Batool', 'Lahore', '12-02-2000', 70000, '0300-4872611'),

('E20-002', 'Muhammad Anas', 'Muridke', '07-25-2000', 70000, '0309-4009084'),

('E20-003', 'Ahmed Naeem', 'Sheikhupura', '02-16-2001', 70000, '0308-0633280'),

('E20-005', 'Rasikh Ali', 'Lahore', '05-05-2001', 70000, '0312-1472153'),

('E20-004', 'Mudassar Afzal', 'Raiwind', '10-19-1999', 70000, '0313-4765323'),

('E20-006', 'Muneeb Saleem', 'Multan', '04-23-1998', 70000, '0320-4582051')

insert into Project(Project\_Name, Starting\_Date)

values ('E-Commerece Website', '09-14-2020'),

('Digital Application', '10-25-2020'),

('Project Management Tool', '10-30-2020'),

('Stress Test', '11-12-2020'),

('Website Designing Tool', '12-05-2020')

insert into Resources(Resource\_Type, Price, Brand)

values ('Software', 5000, 'Microsoft'),

('Hardware', 47000, 'Nvidia'),

('Hardware', 25000, 'Intel'),

('Software', 115000, 'Unity Technologies'),

('Hardware', 23000, 'AMD'),

('Hardware', 5000, 'Arduino Tech.')

insert into Client(ClientID, [Name], Gender, [Address], Phone\_No)

values ('C20-001', 'Usman Bezaar', 'M', 'Lahore', '0300-0000001'),

('C20-002', 'Kanwal Aftab', 'F', 'Sialkot', '0300-0000002'),

('C20-003', 'Attaullah Esakhelvi', 'M', 'Mianwali', '0300-0000003'),

('C20-004', 'Yousuf Raza Gilani', 'M', 'Islamabad', '0300-0000004'),

('C20-005', 'Shafqat Mehmood', 'M', 'Lahore', '0300-0000005'),

('C20-006', 'Muneeba Mazari', 'F', 'Islamabad', '0300-0000006')

insert into Project\_Manager([Name], Gender, [Address], Phone\_No)

values ('Ali Zain', 'Male', 'Lahore', '0301-0000001'),

('Hassan Ali', 'Male', 'Lahore', '0301-0000002'),

('Alizey Khan', 'Female', 'Peshawar', '0301-0000003'),

('Umer Sheikh', 'Male', 'Multan', '0301-0000004'),

('Yusaib Ali', 'Male', 'Karachi', '0301-0000005'),

('Amir Khan', 'Male', 'Lahore', '0301-0000006'),

('Rumaisa Iqbal', 'Female', 'Karachi', '0301-0000007')

insert into IT\_Department(IT\_Dept\_ID, Director, Director\_Contact\_No, Department\_Mail)

values ( 46, 'Tabish Siraaj', '0300-1111111', 'Ta.Bish@gmail.com')

insert into [Contract](ProjectID, ClientID, Contract\_Date)

values ( 1, 'C20-001', '10-01-2020'),

( 3, 'C20-002', '10-23-2020'),

( 2, 'C20-001', '10-04-2020'),

( 1, 'C20-002', '10-29-2020'),

( 3, 'C20-003', '11-14-2020'),

( 4, 'C20-005', '11-30-2020'),

( 1, 'C20-004', '12-01-2020'),

( 4, 'C20-006', '12-04-2020')

insert into Pro\_Emp(ProjectID, EmployeeID)

values ( 1, 'E20-001'),

( 2, 'E20-001'),

( 1, 'E20-002'),

( 3, 'E20-004'),

( 4, 'E20-005'),

( 1, 'E20-002'),

( 3, 'E20-004')

insert into Pro\_Res(ProjectID, ResourceID, Date\_Of\_Use)

values ( 2, 2, '10-05-2020'),

( 3, 6, '10-25-2020'),

( 2, 3, '10-09-2020'),

( 4, 5, '12-01-2020'),

( 2, 5, '11-14-2020'),

( 4, 2, '12-05-2020')

insert into Pro\_Dept(ProjectID, IT\_Dept\_ID)

values ( 1, 46),

( 2, 46),

( 3, 46),

( 4, 46),

( 5, 46)

insert into Pro\_Man(ProjectID, ManagerID)

values ( 1, 101),

( 2, 106),

( 3, 100),

( 4, 102),

( 5, 103)

-- Data Query Language (DQL) / Data Retrieval Language (DRL)

-- 1) Show record of those employees, who have worked/are working on "N" number of Projects

-- (shows record of all number of project if entered null)

/\*

create function Specific\_Projects(@num int)

returns table

as

return( select E.EmployeeID, E.[Name] as [Employee Full Name], E.Phone\_No, E.Salary, count(PE.ProjectID) as [Total Projects] from Employee E

join Pro\_Emp PE

on E.EmployeeID = PE.EmployeeID

group by E.EmployeeID, E.[Name], E.Phone\_No, E.Salary

having count(PE.ProjectID) = isnull(@num,count(PE.ProjectID)))

\*/

select \* from dbo.Specific\_Projects(null)

-- 2) Increment in salary: "given amount" per each number of projects

/\*

create function Increment\_Money(@money money)

returns table

as

return( select E.EmployeeID, E.[Name] as [Employee Full Name], E.Phone\_No, count(PE.ProjectID) as [Total Projects], E.Salary as [Original Salary],

case

when count(PE.ProjectID) > 1

then E.Salary + (count(PE.ProjectID)\*@money)

when count(PE.ProjectID) = 1

then E.Salary + @money

else E.Salary

end as [Incremented Salary]

from Employee E

join Pro\_Emp PE

on E.EmployeeID = PE.EmployeeID

group by E.EmployeeID, E.[Name], E.Phone\_No, E.Salary)

\*/

select \* from dbo.Increment\_Money(5740)

-- 3) Show Record of All those Employees, who aren't assigned any project

/\*

create view Employee\_Without\_project as

select E.EmployeeID, E.[Name] as [Employee Full Name], E.Phone\_No, E.Salary, count(PE.ProjectID) as [Total Projects] from Employee E

left join Pro\_Emp PE

on E.EmployeeID = PE.EmployeeID

group by E.EmployeeID, E.[Name], E.Phone\_No, E.Salary

having count(PE.ProjectID) < 1

\*/

select \* from dbo.Employee\_Without\_project

-- 4) Show the record of employees by decreasing age

select E.EmployeeID, E.[Name], E.[Address], year(getdate())-year(E.birth\_date) as Age ,E.Salary, E.Birth\_Date, E.Phone\_No from Employee E

order by year(getdate())-year(E.birth\_date) desc

-- 5) Show the record of oldest (in age) employee

select top 1 E.EmployeeID, E.[Name], E.[Address], year(getdate())-year(E.birth\_date) as Age ,E.Salary, E.Birth\_Date, E.Phone\_No from Employee E

order by year(getdate())-year(E.birth\_date) desc

-- 6) Generate Username for all employees & Show EmployeeID, Usernames, Name, Salary, Phone\_No for all the employees

select E.EmployeeID,

SUBSTRING(E.EmployeeID,1,3) + SUBSTRING(E.EmployeeID,7,1) + '.' +

SUBSTRING(upper(E.[Name]),1,1) + SUBSTRING(lower(E.[Name]),2,4) +

cast(day(E.Birth\_Date) as varchar(2)) as [Generated UserName],

E.[Name], E.[Address], E.Birth\_Date, E.Salary, E.Phone\_No from employee E

-- 7) Show How Many Employees Are Working on Projects in ascending order

select P.ProjectID, P.Project\_Name as [Project Name], P.Starting\_Date as [Project Starting Date], count(PE.EmployeeID) as [Number of Employees]

from Project P

left join Pro\_Emp PE

on PE.ProjectID = P.ProjectID

group by P.ProjectID, P.Project\_Name, P.Starting\_Date

order by count(PE.EmployeeID) asc

-- 8) Show ClientID, Client Name, Project Name for entered "Client ID" (Shows data of all clients if entered "null")

/\*

create function Client\_Projects(@CID nvarchar(8))

returns table

as

return (select C.ClientID, C.[Name], P.Project\_Name, CO.Contract\_date from Client C

join [Contract] Co

on C.ClientID = CO.ClientID

join Project P

on P.ProjectID = CO.ProjectID

where C.ClientID = isnull(@CID, C.ClientID))

\*/

select \* from dbo.Client\_Projects('C20-001')

/\*

select \* from Employee

select \* from Project

select \* from Resources

select \* from Client

select \* from Project\_Manager

select \* from IT\_Department

select \* from [Contract]

select \* from Pro\_Dept

select \* from Pro\_Emp

select \* from Pro\_Man

select \* from Pro\_Res

\*/