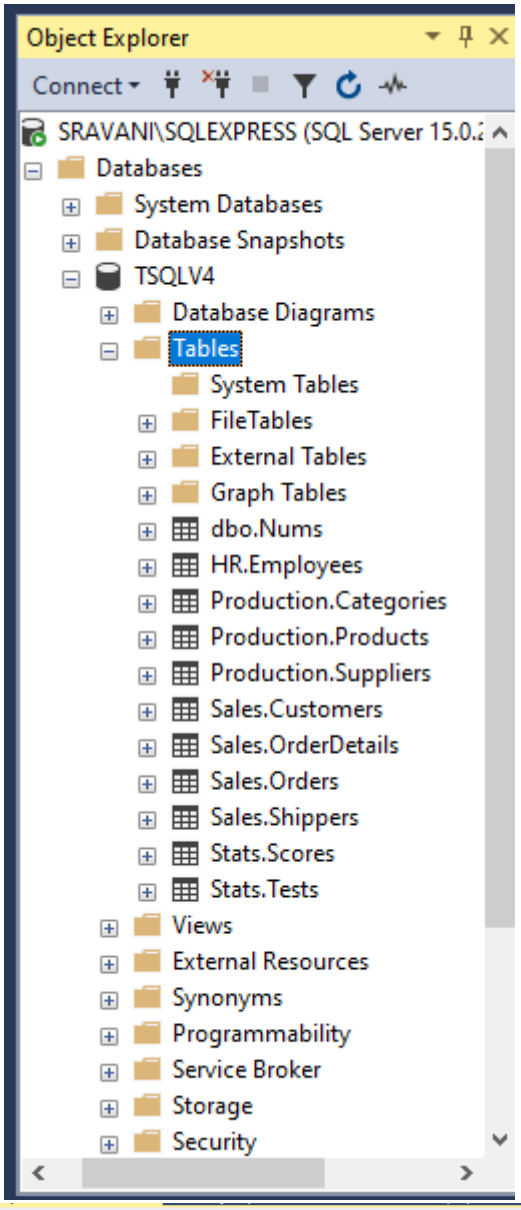
1. List the names of the entity tables.

   Solution:

   Also added the output file in the name of query_1_output_data. Adding the image for reference.




```
USE [TSQLV4];
SELECT * FROM sysobjects WHERE xtype = 'U';
GO
```

100 %

Results | Messages

	name	id	xtype	uid	info	status	base_schema_ver	replinfo	parent_obj	crdate	ftcatid	schema_ver	stats_schema_ver	type	userstat	sysstat	inde
1	Employees	581577110	U	5	0	0	0	0	0	2022-02-28 00:09:49.913	0	0	0	U	1	3	0
2	Suppliers	645577338	U	6	0	0	0	0	0	2022-02-28 00:09:50.230	0	0	0	U	1	3	0
3	Categories	677577452	U	6	0	0	0	0	0	2022-02-28 00:09:50.310	0	0	0	U	1	3	0
4	Products	709577566	U	6	0	0	0	0	0	2022-02-28 00:09:50.347	0	0	0	U	1	3	0
5	Customers	821577965	U	7	0	0	0	0	0	2022-02-28 00:09:50.380	0	0	0	U	1	3	0
6	Shippers	853578079	U	7	0	0	0	0	0	2022-02-28 00:09:50.473	0	0	0	U	1	3	0
7	Orders	885578193	U	7	0	0	0	0	0	2022-02-28 00:09:50.500	0	0	0	U	1	3	0
8	OrderDetails	981578535	U	7	0	0	0	0	0	2022-02-28 00:09:50.853	0	0	0	U	1	3	0
9	Tests	1141579105	U	8	0	0	0	0	0	2022-02-28 00:09:50.857	0	0	0	U	1	3	0
10	Scores	1173579219	U	8	0	0	0	0	0	2022-02-28 00:09:50.890	0	0	0	U	1	3	0

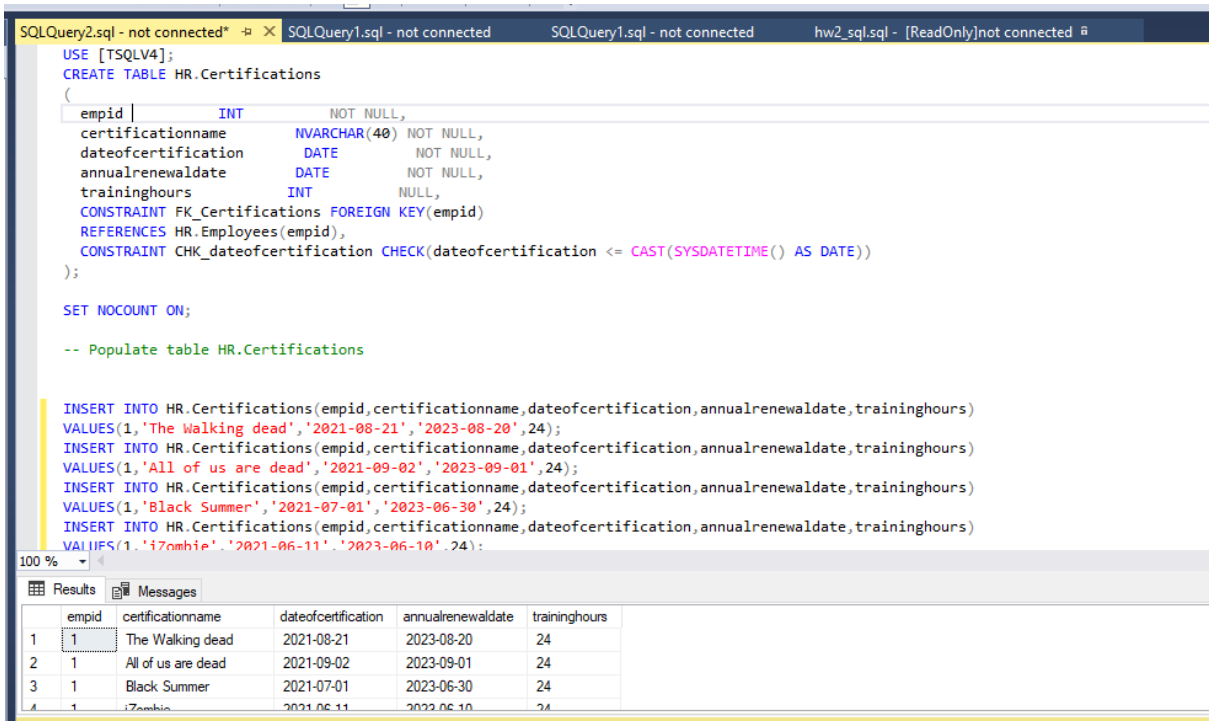
```
USE [TSQLV4];
SELECT * FROM sysobjects WHERE xtype = 'U';
GO
```

2. a.)

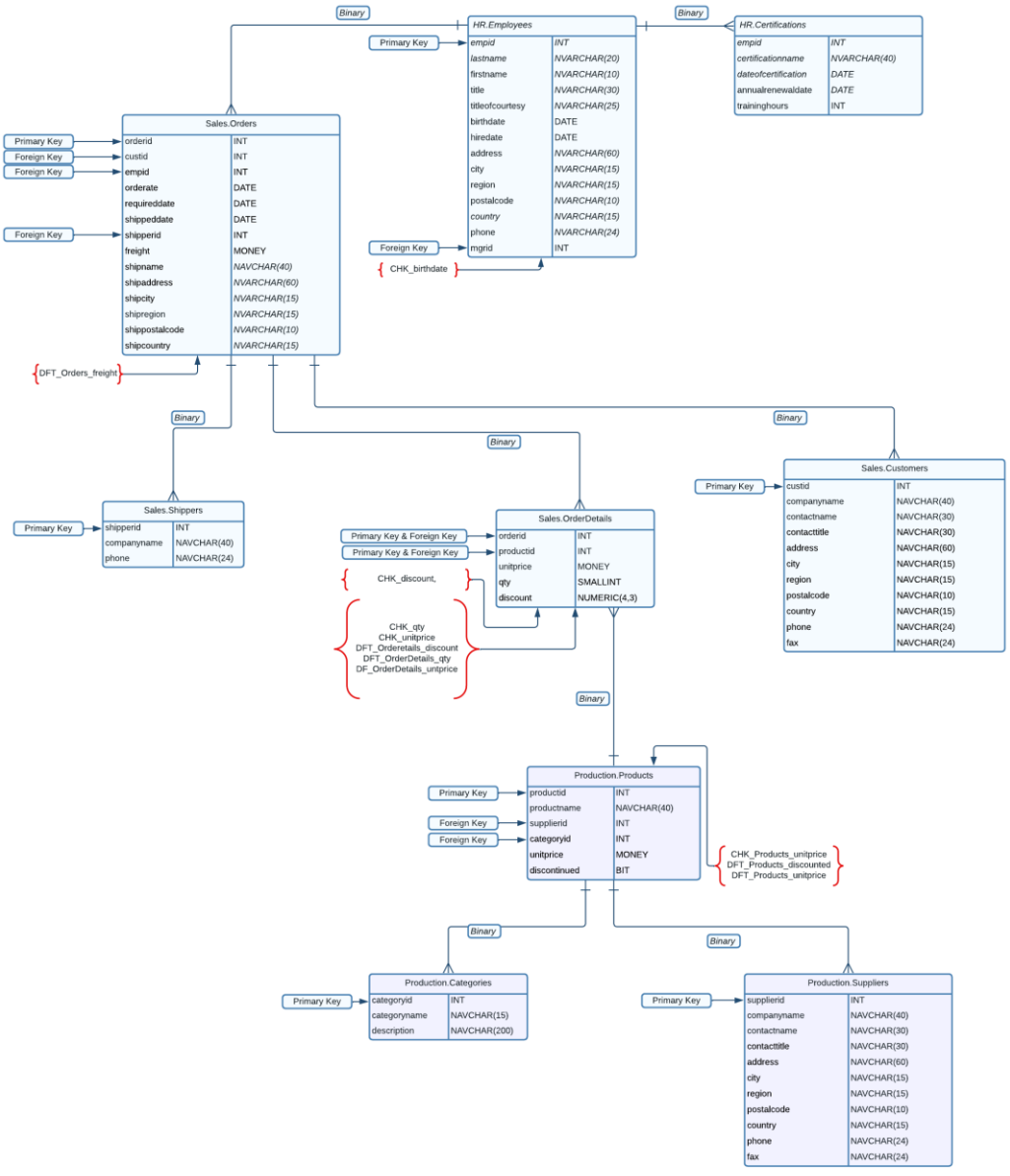
```
USE [TSQLV4];
CREATE TABLE HR.Certifications
(
  empid            INT           NOT NULL,
  certificationname        NVARCHAR(40) NOT NULL,
  dateofcertification       DATE          NOT NULL,
  annualrenewaldate        DATE          NOT NULL,
  traininghours           INT           NULL,
  CONSTRAINT FK_Certifications FOREIGN KEY(empid)
  REFERENCES HR.Employees(empid),
  CONSTRAINT CHK_dateofcertification CHECK(dateofcertification <= CAST(SYSDATETIME() AS DATE))
);

SET NOCOUNT ON;
```

Added the output file in the name of query_2_output_data and code file in the name of SQLQuery2. Adding the image for reference.



b. ERD

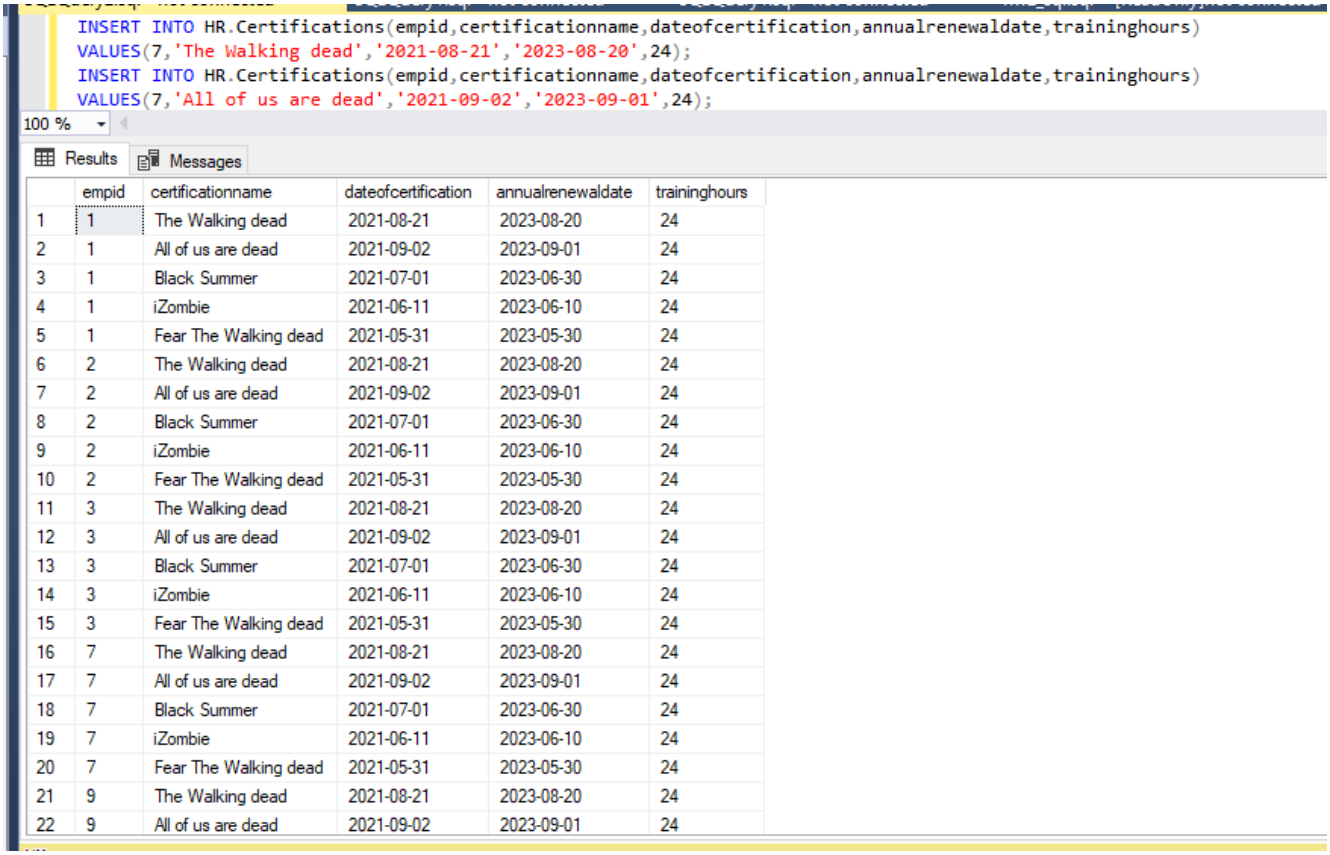

Binary
HR.Employees
Primary Key
empid INT
lastname NVARCHAR(20)
firstname NVARCHAR(10)
title NVARCHAR(30)
titleofcourtesy NVARCHAR(25)
birthdate DATE
hiredate DATE
address NVARCHAR(60)
city NVARCHAR(15)
region NVARCHAR(15)
postalcode NVARCHAR(10)
country NVARCHAR(15)
phone NVARCHAR(24)
Foreign Key
mgrid INT
CHK_birthdate
Binary
HR.Certifications
empid INT
certificationname NVARCHAR(40)
dateofcertification DATE
annualrenewaldate DATE
traininghours INT
Sales.Orders
Primary Key
Foreign Key
Foreign Key
Foreign Key
orderid INT
custid INT
empid INT
orderate DATE
requireddate DATE
shippeddate DATE
shipperid INT
freight MONEY
shipname NAVCHAR(40)
shipaddress NVARCHAR(60)
shipcity NVARCHAR(15)
shipregion NVARCHAR(15)
shippostalcode NVARCHAR(10)
shipcountry NVARCHAR(15)
DFT_Orders_freight
Binary
Sales.Shippers
Primary Key
shipperid INT
companyname NAVCHAR(40)
phone NAVCHAR(24)
Binary
Sales.OrderDetails
Primary Key & Foreign Key
Primary Key & Foreign Key
orderid INT
productid INT
unitprice MONEY
qty SMALLINT
discount NUMERIC(4,3)
CHK_discount,
CHK_qty
CHK_unitprice
DFT_Orderetails_discount
DFT_OrderDetails_qty
DF_OrderDetails_unitprice
Binary
Sales.Customers
Primary Key
custid INT
companyname NAVCHAR(40)
contactname NAVCHAR(30)
contacttitle NAVCHAR(30)
address NAVCHAR(60)
city NAVCHAR(15)
region NAVCHAR(15)
postalcode NAVCHAR(10)
country NAVCHAR(15)
phone NAVCHAR(24)
fax NAVCHAR(24)
Binary
Production.Products
Primary Key
Foreign Key
Foreign Key
productid INT
productname NAVCHAR(40)
supplierid INT
categoryid INT
unitprice MONEY
discontinued BIT
CHK_Products_unitprice
DFT_Products_discounted
DFT_Products_unitprice
Binary
Production.Categories
Primary Key
categoryid INT
categoryname NAVCHAR(15)
description NAVCHAR(200)
Binary
Production.Suppliers
Primary Key
supplierid INT
companyname NAVCHAR(40)
contactname NAVCHAR(30)
contacttitle NAVCHAR(30)
address NAVCHAR(60)
city NAVCHAR(15)
region NAVCHAR(15)
postalcode NAVCHAR(10)
country NAVCHAR(15)
phone NAVCHAR(24)
fax NAVCHAR(24)

c. Create the new database table (s) in your physical database.
Solution:

```
-- Populate table HR.Certifications


INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(1,'The Walking dead','2021-08-21','2023-08-20',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(1,'All of us are dead','2021-09-02','2023-09-01',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(1,'Black Summer','2021-07-01','2023-06-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(1,'iZombie','2021-06-11','2023-06-10',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(1,'Fear The Walking dead','2021-05-31','2023-05-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(2,'The Walking dead','2021-08-21','2023-08-20',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(2,'All of us are dead','2021-09-02','2023-09-01',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(2,'Black Summer','2021-07-01','2023-06-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(2,'iZombie','2021-06-11','2023-06-10',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(2,'Fear The Walking dead','2021-05-31','2023-05-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(3,'The Walking dead','2021-08-21','2023-08-20',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(3,'All of us are dead','2021-09-02','2023-09-01',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(3,'Black Summer','2021-07-01','2023-06-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(3,'iZombie','2021-06-11','2023-06-10',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(3,'Fear The Walking dead','2021-05-31','2023-05-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(7,'The Walking dead','2021-08-21','2023-08-20',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(7,'All of us are dead','2021-09-02','2023-09-01',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(7,'Black Summer','2021-07-01','2023-06-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(7,'iZombie','2021-06-11','2023-06-10',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(7,'Fear The Walking dead','2021-05-31','2023-05-30',24);
```

```
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(9,'The Walking dead','2021-08-21','2023-08-20',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(9,'All of us are dead','2021-09-02','2023-09-01',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(9,'Black Summer','2021-07-01','2023-06-30',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(9,'iZombie','2021-06-11','2023-06-10',24);
INSERT INTO
HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(9,'Fear The Walking dead','2021-05-31','2023-05-30',24);
select * from HR.Certifications;
GO
```



```
INSERT INTO HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(7,'The Walking dead','2021-08-21','2023-08-20',24);
INSERT INTO HR.Certifications(empid,certificationname,dateofcertification,annualrenewaldate,traininghours)
VALUES(7,'All of us are dead','2021-09-02','2023-09-01',24);
```

100 %

Results | Messages

	empid	certificationname	dateofcertification	annualrenewaldate	traininghours
1	1	The Walking dead	2021-08-21	2023-08-20	24
2	1	All of us are dead	2021-09-02	2023-09-01	24
3	1	Black Summer	2021-07-01	2023-06-30	24
4	1	iZombie	2021-06-11	2023-06-10	24
5	1	Fear The Walking dead	2021-05-31	2023-05-30	24
6	2	The Walking dead	2021-08-21	2023-08-20	24
7	2	All of us are dead	2021-09-02	2023-09-01	24
8	2	Black Summer	2021-07-01	2023-06-30	24
9	2	iZombie	2021-06-11	2023-06-10	24
10	2	Fear The Walking dead	2021-05-31	2023-05-30	24
11	3	The Walking dead	2021-08-21	2023-08-20	24
12	3	All of us are dead	2021-09-02	2023-09-01	24
13	3	Black Summer	2021-07-01	2023-06-30	24
14	3	iZombie	2021-06-11	2023-06-10	24
15	3	Fear The Walking dead	2021-05-31	2023-05-30	24
16	7	The Walking dead	2021-08-21	2023-08-20	24
17	7	All of us are dead	2021-09-02	2023-09-01	24
18	7	Black Summer	2021-07-01	2023-06-30	24
19	7	iZombie	2021-06-11	2023-06-10	24
20	7	Fear The Walking dead	2021-05-31	2023-05-30	24
21	9	The Walking dead	2021-08-21	2023-08-20	24
22	9	All of us are dead	2021-09-02	2023-09-01	24

3. Perform a backup of the database
   Solution: Added the backup file with the name **TSQLV4.bak**