Import titanic.xls into your DBMS.

```
--1
select * from passengers
```

	PASSENGERID	SURVIVED	PCLASS	NAME	GENDER	AGE	SIBSP	PARCH	TICKET	FARE	CABIN	EMBARKED
1	1	0	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	45839	NULL	S
2	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thay...	female	38	1	0	PC 17599	71,28	C85	C
3	3	1	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7,93	NULL	S
4	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53,1	C123	S
5	5	0	3	Allen, Mr. William Henry	male	35	0	0	373450	43228	NULL	S
6	6	0	3	Moran, Mr. James	male	0	0	0	330877	980160	NULL	Q
7	7	0	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51,86	E46	S
8	8	0	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21,08	NULL	S
9	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11,13	NULL	S
10	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30,07	NULL	C
11	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	43297	G6	S
12	12	1	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26,55	C103	S
13	13	0	3	Saundercock, Mr. William Henry	male	20	0	0	A/5. 2151	43228	NULL	S
14	14	0	3	Andersson, Mr. Anders Johan	male	39	1	5	347082	31,28	NULL	S
15	15	0	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14	0	0	350406	2426124	NULL	S
16	16	1	2	Hewlett, Mrs. (Mary D Kingcome)	female	55	0	0	248706	16	NULL	S

2. Group people by gender and check if the number matches the total number of passengers.

Сообщения

```
matches

Время выполнения: 2022-03-24T11:37:11.2681877+06:00
```

Print match if count of females and count of males equals to count of all passengers

```
-- 2
select * from males
select * from females
-- select COUNT(*) as 'number_of_passengers' from passengers GROUP BY GENDER
declare @count_of_males as int
declare @count_of_females as int
set @count_of_males = (select COUNT(*) from males)
set @count_of_females = (select COUNT(*) from females)

if @count_of_females + @count_of_males = (select count(*) from passengers)
    print 'MATCH'
else
    print 'NOT MATCH'
```

3. Count the number of different cabins.

	CABIN	NUM
1	NULL	1014
2	A10	1
3	A11	1
4	A14	1
5	A16	1
6	A18	1
7	A19	1
8	A20	1
9	A21	1
10	A23	1
11	A24	1
12	A26	1
13	A29	1
14	A31	1
15	A32	1
16	A34	3
17	A36	1
18	A5	1
19	A6	1
20	A7	1
21	A9	1
22	B10	1
23	B101	1
24	B102	1
25	B11	1

Grouping by cabins and counting

```
--3
select cabin, count(*) from passengers group by CABIN
```

4. Write a query to display information about those passengers whose data does not indicate the port of departure.

	PassengerId	Survived	Pclass	Name	Gender	Age	SibSp	ParCh	Ticket	Fare	Cabin	Embarked
1	62	1	1	Icard, Miss. Amelie	female	38	0	0	113572	80	B28	NULL
2	830	1	1	Stone, Mrs. George Nelson (Martha Evelyn)	female	62	0	0	113572	80	B28	NULL

Selecting where embarked is null

```
--4
select * from passengers where EMBARKED is null
```

5. Write a query to display the percentage of men and women who survived the disaster.

	Gender	persentage
1	female	77.935222672064
2	male	22.064777327935

Count of each gender divided by total multiplied by 100%

```
--5
declare @survived_males int
declare @survived_females int

set @survived_males = (select COUNT(*) from passengers where GENDER = 'male' and SURVIVED = 1)
set @survived_females = (select COUNT(*) from passengers where GENDER = 'female' and SURVIVED = 1)

select @survived_males * 100/ (@survived_females + @survived_males) as 'males', @survived_females * 100 / (@survived_females + @survived_males) as 'females'
```

6. Write a query to display the average age of the victims (in form of message).

```
AVERAGE NUMBER OF VICTIMS IS 484.016

Время выполнения: 2022-03-24T22:54:04.9021952+06:00
```

Printing Avg age of victims

```
--6
declare @avg_age int
set @avg_age = (select avg(age) from passengers where SURVIVED = 0)
print 'avg age of victims is ' + Convert(varchar, @avg_salary)
```

```
Время выполнения: 2022-03-24T22:54:04.9021952+06:00
```

7. Add a column indicating the number of repetitions for each cabin. The absence of a cabin number should also be taken into account.

	PASSENGERID	SURVIVED	PCLASS	NAME	GENDER	AGE	SIBSP	PARCH	TICKET	FARE	CABIN	EMBARKED	NUM_CABIN
1	1	0	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	45839	NULL	S	1014
2	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thay...	female	38	1	0	PC 17599	71,28	C85	C	2
3	3	1	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7,93	NULL	S	1014
4	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53,1	C123	S	2
5	5	0	3	Allen, Mr. William Henry	male	35	0	0	373450	43228	NULL	S	1014
6	6	0	3	Moran, Mr. James	male	0	0	0	330877	860180	NULL	Q	1014
7	7	0	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51,86	E46	S	2
8	8	0	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21,08	NULL	S	1014
9	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11,13	NULL	S	1014
10	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30,07	NULL	C	1014
11	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	43297	G6	S	5
12	12	1	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26,55	C103	S	1
13	13	0	3	Saundercock, Mr. William Henry	male	20	0	0	A/5. 2151	43228	NULL	S	1014
14	14	0	3	Andersson, Mr. Anders Johan	male	39	1	5	347082	31,28	NULL	S	1014
15	15	0	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14	0	0	350406	2426..	NULL	S	1014
16	16	1	2	Hewlett, Mrs. (Mary D Kingcome)	female	55	0	0	248706	16	NULL	S	1014
17	17	0	3	Rice, Master. Eugene	male	2	4	1	382652	29,13	NULL	Q	1014
18	18	1	2	Williams, Mr. Charles Eugene	male	0	0	0	244373	13	NULL	S	1014
19	19	0	3	Vander Planke, Mrs. Julius (Emelia Maria Vandem...	female	31	1	0	345763	18	NULL	S	1014

Finding count of each type of cabin including nulls

```
--7
DECLARE @num_of_absense AS INT
SET @num_of_absense=(SELECT COUNT(PASSENGERID) FROM dbo.passengers)-(SELECT COUNT(CABIN) AS COUNTS FROM dbo.passengers)

SELECT PASSENGERID,SURVIVED,PCLASS,NAME,GENDER,AGE,SIBSP,PARCH,TICKET,FARE,passengers.CABIN,EMBARKED,ISNULL(COUNTS,@num_of_absense) AS NUM_CABIN FROM dbo.passenger
LEFT JOIN dbo.cabins ON passengers.CABIN=cabins.CABIN ORDER BY PASSENGERID ASC
```

| 19 | 19 | 0 | 3 | Vander Planke, Mrs. Julius (Emelia Maria Vandem... | female | 31 | 1 | 0 | 345763 | 18 | NULL | S | 1014 |

8. Separate the passenger names into four columns: the original name column, the passenger last name column, the passenger first name column without regalia, and the maiden name column of married women.

Результаты | Сообщения

	original_name	last_name	first_name	maiden_name
1	Braund, Mr. Owen Harris	Braund	Owen Harris	
2	Cumings, Mrs. John Bradley (Florence Briggs Thay...	Cumings	John Bradley	Florence Briggs Thayer
3	Heikkinen, Miss. Laina	Heikkinen	Laina	
4	Futrelle, Mrs. Jacques Heath (Lily May Peel)	Futrelle	Jacques Heath	Lily May Peel
5	Allen, Mr. William Henry	Allen	William Henry	
6	Moran, Mr. James	Moran	James	
7	McCarthy, Mr. Timothy J	McCarthy	Timothy J	
8	Palsson, Master. Gosta Leonard	Palsson	Gosta Leonard	
9	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	Johnson	Oscar W	Elisabeth Vilhelmina ...
10	Nasser, Mrs. Nicholas (Adele Achem)	Nasser	Nicholas	Adele Achem
11	Sandstrom, Miss. Marguerite Rut	Sandstr...	Marguerite Rut	
12	Bonnell, Miss. Elizabeth	Bonnell	Elizabeth	
13	Saundercock, Mr. William Henry	Saunder...	William Henry	
14	Andersson, Mr. Anders Johan	Anderss...	Anders Johan	
15	Vestrom, Miss. Hulda Amanda Adolfina	Vestrom	Hulda Amand...	
16	Hewlett, Mrs. (Mary D Kingcome)	Hewlett		Mary D Kingcome
17	Rice, Master. Eugene	Rice	Eugene	
18	Williams, Mr. Charles Eugene	Williams	Charles Euge...	

Manipulations by substring, replace functions so on ...

```
--8
drop view names

go
create view names as select p.name as 'full name', left(p.name, charindex(',', p.name) - 1) as 'last name' from passengers p
go

drop view names
drop view for_maiden_names
go
CREATE VIEW for_maiden_names AS
SELECT NAME AS ORIGINAL_NAME, LEFT(NAME,CHARINDEX(',',NAME)-1) AS LAST_NAME,
REPLACE(RIGHT(NAME,(LEN(NAME)-LEN(LEFT(NAME,CHARINDEX('.',NAME))))),SUBSTRING(NAME,CHARINDEX('(',NAME),(CHARINDEX(')',NAME)-CHARINDEX('(',NAME)+1)),'') AS FIRST_NAME,
REPLACE(SUBSTRING(NAME,CHARINDEX('(',NAME),(CHARINDEX(')',NAME)-CHARINDEX('(',NAME))),'(','') AS MAIDEN_NAME
FROM dbo.passengers
go
select * from for_maiden_names
```

9. Show the number of regalia (Mr., Mrs, Miss, Master, Rev, Col, etc.)

	regalia	num
1	Capt.	1
2	Col.	4
3	Don.	1
4	Dona.	1
5	Dr.	8
6	Jonkheer.	1
7	Lady.	1
8	Major.	2
9	Master.	61
10	Miss.	260
11	Mlle.	2
12	Mme.	1
13	Mr.	757
14	Mrs.	197
15	Ms.	2
16	Rev.	8
17	Sir.	1
18	the Cou...	1

Counting number of each regalia

```
--9
select regalia, COUNT(regalia) AS count
from (select SUBSTRING(NAME,CHARINDEX(',',name)+1,CHARINDEX('.',NAME) - CHARINDEX(',',name)) as regalia from dbo.passengers)
as TMP_TABLE group by regalia
```

10. Divide people into families. Consider the case so that if a person has the same last names, then they belong to the same family. And also for more accuracy, add the condition that this person should have siblings/spouse or parents/children.

	family	member
1	Abbott	Mrs. Stanton (Rosa Hunt)
2	Abbott	Mr. Rossmore Edward
3	Abbott	Master. Eugene Joseph
4	Abelson	Mrs. Samuel (Hannah Wizosky)
5	Abelson	Mr. Samuel
6	Ahlin	Mrs. Johan (Johanna Persdotter Larsson)
7	Aks	Mrs. Sam (Leah Rosen)
8	Aks	Master. Philip Frank
9	Allison	Mr. Hudson Joshua Creighton
10	Allison	Master. Hudson Trevor
11	Allison	Miss. Helen Loraine
12	Allison	Mrs. Hudson J C (Bessie Waldo Daniels)
13	Ander...	Miss. Carla Christine Nielsine
14	Ander...	Mr. Anders Johan
15	Ander...	Miss. Erna Alexandra
16	Ander...	Miss. Ellis Anna Maria
17	Ander...	Miss. Ingeborg Constanzia
18	Ander...	Miss. Sigrid Elisabeth
19	Ander...	Mrs. Anders Johan (Alfrida Konstantia B...
20	Ander...	Miss. Ida Augusta Margareta
21	Ander...	Master. Sigvard Harald Elias
22	Ander...	Miss. Ebba Iris Alfrida
23	Andre...	Miss. Kornelia Theodosia

Grouping by last name which I found by substring manipulation

```
select * from passengers
go
create view names as select p.PARCH,p.SIBSP, substring(p.name, 0, charindex(',', p.name) - 1) as 'last_name', RIGHT(p.name,len(p.name)-charindex(',', p.name)) as 'first_name' from passengers p
go
select * from names
SELECT last_name AS family,first_name as 'member' FROM names WHERE SIBSP>0 OR PARCH>0 ORDER BY last_name
drop view names
```
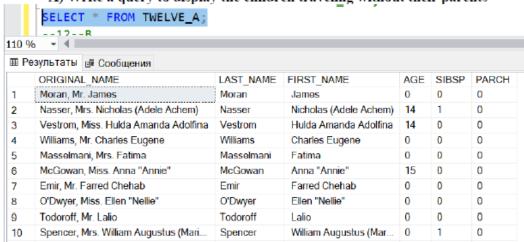
11. Write a query to display the number of family members for each passenger, taking into account this passenger.

	PassengerId	Name	num_of_members
1	846	Abbing, Mr. Anthony	1
2	1284	Abbott, Master. Eugene Joseph	3
3	747	Abbott, Mr. Rossmore Edward	3
4	280	Abbott, Mrs. Stanton (Rosa Hunt)	3
5	1237	Abelseth, Miss. Karen Marie	1
6	949	Abelseth, Mr. Olaus Jorgensen	1
7	309	Abelson, Mr. Samuel	2
8	875	Abelson, Mrs. Samuel (Hannah Wizosky)	2
9	1143	Abrahamsson, Mr. Abraham August Johannes	1
10	900	Abrahim, Mrs. Joseph (Sophie Halaut Easu)	1
11	366	Adahl, Mr. Mauritz Nils Martin	1
12	402	Adams, Mr. John	1
13	41	Ahlin, Mrs. Johan (Johanna Persdotter Larss...	2
14	1199	Aks, Master. Philip Frank	2
15	856	Aks, Mrs. Sam (Leah Rosen)	2

```
--11
drop view tmp_table
drop view tmp_table2
go
create view tmp_table as select *, substring(name, 0, charindex(',', name) - 1) as family from passengers
go
select * from tmp_table
go
create view tmp_table2 as select count(*) as counts, family from tmp_table group by family
go
select PASSENGERID, NAME, counts from tmp_table inner join tmp_table2 on tmp_table.family = tmp_table2.family order by NAME
```

12. Separate children and parents. Create views for each of the below queries. The last names and first names of passengers should be in different columns.
A) Write a query to display the children traveling without their parents

```
SELECT * FROM TWELVE_A;
--12--B
```

110 % ◄

	ORIGINAL_NAME	LAST_NAME	FIRST_NAME	AGE	SIBSP	PARCH
1	Moran, Mr. James	Moran	James	0	0	0
2	Nasser, Mrs. Nicholas (Adele Achem)	Nasser	Nicholas (Adele Achem)	14	1	0
3	Vestrom, Miss. Hulda Amanda Adolfina	Vestrom	Hulda Amanda Adolfina	14	0	0
4	Williams, Mr. Charles Eugene	Williams	Charles Eugene	0	0	0
5	Masselmani, Mrs. Fatima	Masselmani	Fatima	0	0	0
6	McGowan, Miss. Anna "Annie"	McGowan	Anna "Annie"	15	0	0
7	Emir, Mr. Farred Chehab	Emir	Farred Chehab	0	0	0
8	O'Dwyer, Miss. Ellen "Nellie"	O'Dwyer	Ellen "Nellie"	0	0	0
9	Todoroff, Mr. Lalio	Todoroff	Lalio	0	0	0
10	Spencer, Mrs. William Augustus (Mari...	Spencer	William Augustus (Mar...	0	1	0

```
drop view TWELVE_A
drop view TWELVE_B
drop view TWELVE_C
drop view TWELVE_D
GO
CREATE VIEW TWELVE_A AS SELECT name AS ORIGINAL_NAME, LEFT(name,CHARINDEX(',',name)-1) AS LAST_NAME, RIGHT(name,(LEN(name)-LEN(LEFT(name,CHARINDEX('.',name))))) as FIRST_NAME, AGE, SIBSP, PARCH
GO
select * from TWELVE_A
```

B) Write a query to display the children traveling with their parents.

```
SELECT *FROM TWELVE_B;
```

110 %

Результаты | Сообщения

	ORIGINAL_NAME	LAST_NAME	FIRST_NAME	AGE	SIBSP	PARCH
1	Palsson, Master. Gosta Leonard	Palsson	Gosta Leonard	2	3	1
2	Sandstrom, Miss. Marguerite Rut	Sandstrom	Marguerite Rut	4	1	1
3	Rice, Master. Eugene	Rice	Eugene	2	4	1
4	Palsson, Miss. Torborg Danira	Palsson	Torborg Danira	8	3	1
5	Laroche, Miss. Simonne Marie Anne Andree	Laroche	Simonne Marie Anne Andree	3	1	2
6	Panula, Master. Juha Niilo	Panula	Juha Niilo	7	4	1
7	West, Miss. Constance Mirium	West	Constance Mirium	5	1	2
8	Goodwin, Master. William Frederick	Goodwin	William Frederick	11	5	2
9	Skoog, Master. Harald	Skoog	Harald	4	3	2
10	Moubarek, Master. Gerios	Moubarek	Gerios	0	1	1
11	Andersson, Miss. Erna Alexandra	Andersson	Erna Alexandra	17	4	2

```
GO
create view TWELVE_B as select name as ORIGINAL_NAME, LEFT(name,CHARINDEX(',',name)-1) AS
LAST_NAME, RIGHT(name,(LEN(name)-LEN(LEFT(name,CHARINDEX('.',name))))) as FIRST_NAME,
AGE, SIBSP, PARCH FROM dbo.passengers WHERE AGE<18 AND PARCH>0
GO
select * from TWELVE_B
```

C) Write a query to display the single parents (without SibSp).

```
SELECT * FROM TWELVE_C;
```

110 %

Результаты | Сообщения

	ORIGINAL_NAME	LAST_NAME	FIRST_NAME	AGE	SIBSP	PARCH
1	Heikkinen, Miss. Laina	Heikkinen	Laina	26	0	0
2	Allen, Mr. William Henry	Allen	William Henry	35	0	0
3	McCarthy, Mr. Timothy J	McCarthy	Timothy J	54	0	0
4	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	Johnson	Oscar W (Elisabeth Vilhelmina Berg)	27	0	2
5	Bonnell, Miss. Elizabeth	Bonnell	Elizabeth	58	0	0
6	Saundercock, Mr. William Henry	Saundercock	William Henry	20	0	0
7	Hewlett, Mrs. (Mary D Kingcome)	Hewlett	(Mary D Kingcome)	55	0	0
8	Fynney, Mr. Joseph J	Fynney	Joseph J	35	0	0
9	Beesley, Mr. Lawrence	Beesley	Lawrence	34	0	0
10	Sloper, Mr. William Thompson	Sloper	William Thompson	28	0	0
11	Uruchurtu, Don. Manuel E	Uruchurtu	Manuel E	40	0	0

```
GO
create view TWELVE_C as select name as ORIGINAL_NAME, LEFT(name,CHARINDEX(',',name)-1) AS
LAST_NAME, RIGHT(name,(LEN(name)-LEN(LEFT(name,CHARINDEX('.',name))))) as FIRST_NAME,
AGE, SIBSP, PARCH FROM dbo.passengers WHERE AGE>=18 AND SIBSP = 0
GO
SELECT * FROM TWELVE_C
```

D) Write a query to display the parents who have SibSp.

```
SELECT * FROM TWELVE_D;
```

110 %

Результаты | Сообщения

	ORIGINAL_NAME	LAST_NAME	FIRST_NAME	AGE	SIBSP	PARCH
1	Braund, Mr. Owen Harris	Braund	Owen Harris	22	1	0
2	Cumings, Mrs. John Bradley (Florence Briggs Thayer)	Cumings	John Bradley (Florence Briggs Thayer)	38	1	0
3	Futrelle, Mrs. Jacques Heath (Lily May Peel)	Futrelle	Jacques Heath (Lily May Peel)	35	1	0
4	Andersson, Mr. Anders Johan	Andersson	Anders Johan	39	1	5
5	Vander Planke, Mrs. Julius (Emelia Maria Vandemo...	Vander Planke	Julius (Emelia Maria Vandemoortele)	31	1	0
6	Asplund, Mrs. Carl Oscar (Selma Augusta Emilia Jo...	Asplund	Carl Oscar (Selma Augusta Emilia Johansson)	38	1	5
7	Fortune, Mr. Charles Alexander	Fortune	Charles Alexander	19	3	2
8	Meyer, Mr. Edgar Joseph	Meyer	Edgar Joseph	28	1	0
9	Holverson, Mr. Alexander Oskar	Holverson	Alexander Oskar	42	1	0
10	Vander Planke, Miss. Augusta Maria	Vander Planke	Augusta Maria	18	2	0
11	Ahlin, Mrs. Johan (Johanna Persdotter Larsson)	Ahlin	Johan (Johanna Persdotter Larsson)	40	1	0

```
GO
create view TWELVE_D as select name as ORIGINAL_NAME, LEFT(name,CHARINDEX(',',name)-1) AS
LAST_NAME, RIGHT(name,(LEN(name)-LEN(LEFT(name,CHARINDEX('.',name))))) as FIRST_NAME,
AGE, SIBSP, PARCH FROM dbo.passengers WHERE AGE>=18 AND SIBSP > 0
GO
SELECT * FROM TWELVE_D
```

13

Finding passengers who has nicknames in ""

```
--13
select * from passengers
select name, SUBSTRING(name,charindex('"',name)+1,len(name)-charindex('"',name)-1) as nickname from passengers where charindex('"',name) > 0
```