SQLQuery1_1.sql

In [22]:
```
use TestDB1;

go
create view PR1
as
select
        name,
        capital,
        square,
        population,
        continent
from
        Countries
where
        population < 5000000
        and
        square > 100000
go
select
        name,
        capital,
        square,
        population,
        continent
from
        PR1
```

Commands completed successfully.

Commands completed successfully.

(1 row affected)

Total execution time: 00:00:00.029

Out[22]:

name	capital	square	population	continent
Ботсвана	Габороне	600370	2209208	Африка

SQLQuery1_2.sql

In [23]:
```
use TestDB1;

go
create view PR2
(
        continent,
        square,
        population
)
as
select
        continent,
        Sum(square),
        Sum(population)
from
```

```
        Countries
group by
        continent
go
select

        continent,
        square,
        population
from
        PR2
```

Commands completed successfully.

Commands completed successfully.

(5 rows affected)

Total execution time: 00:00:00.028

Out[23]:

continent	square	population
Азия	1270235	294810990
Африка	4615630	98055327
Европа	799489	114682216
Северная Америка	22966	377968
Южная Америка	13289485	291942128

SQLQuery1_3.sql

In [24]:

```
use Lab8;

go
create view PR3
(
        Surname,
        Job,
        Title,
        Degree,
        Workplace,
        Salary
)
as select
        Fio,
        Dolgn,
        Zvanie,
        Stepen,
        NKaf,
        Zarplata
from
        Sotrudnik C
        inner join Prepodavatel P on C.TabNom = P.TabNom_pr
        inner join Kafedra K on C.ShifrKaf_Sotr = k.ShifrKaf
go
select
        Surname,
        Job,
        Title,
```

```
        Degree,
        Workplace,
        Salary
from
        PR3
```

Commands completed successfully.

Commands completed successfully.

(14 rows affected)

Total execution time: 00:00:00.023

Out[24]:

Surname	Job	Title	Degree	Workplace	Salary
Прохоров	зав.кафедрой	профессор	д.т.н	Прикладная Математика	3500.00
Семенов	преподаватель	доцент	к.ф.-м.н	Прикладная Математика	2500.00
Петров	преподаватель	доцент	к.т.н	Прикладная Математика	2500.00
Андреев	зав.кафедрой	профессор	д.ф.-м.н	Информационные Системы	3500.00
Борисов	преподаватель	доцент	к.ф.-м.н	Информационные Системы	2500.00
Басов	зав.кафедрой	профессор	д.т.н	Математическое Моделирование	3500.00
Сергеева	преподаватель	доцент	к.т.н	Математическое Моделирование	2500.00
Волков	зав.кафедрой	профессор	д.т.н	Общая Физика	3500.00
Зайцев	преподаватель	доцент	к.т.н	Общая Физика	2500.00
Смирнов	преподаватель	ассистент	NULL	Общая Физика	1500.00
Кузнецов	зав.кафедрой	профессор	д.ф.-м.н	Высшая Математика	3500.00
Романцев	преподаватель	профессор	д.ф.-м.н	Высшая Математика	2500.00
Соловьев	преподаватель	доцент	к.ф.-м.н	Высшая Математика	2500.00
Зверев	зав.кафедрой	профессор	д.ф.-м.н	Экспериментальная Физика	3500.00

SQLQuery1_4.sql

In [25]:

```
declare @PR4 TABLE
(
   [WeekNumber] int,
   [DateStart] date,
   [DateEnd] date
)
declare @T as date, @N int=1
set @T=cast(year(getdate()) as char(4))+'0101'
while DATEPART(weekday,@T)>1
   set @T=Dateadd(Day,-1,@T)
print DATEPART(week,@T)
while year(@T)<year(dateadd(year,1,getdate()))
```

```
begin
    insert
    @PR4
        values
          (@N,@T,dateadd(day,6,@T))
          set @T=dateadd(day,7,@T)
          set @N=@N+1
end
select
        [WeekNumber],
    [DateStart],
    [DateEnd]
from @PR4
GO
```

1

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(53 rows affected)
Total execution time: 00:00:00.021

Out[25]:

WeekNumber	DateStart	DateEnd
1	2023-01-01	2023-01-07
2	2023-01-08	2023-01-14
3	2023-01-15	2023-01-21
4	2023-01-22	2023-01-28
5	2023-01-29	2023-02-04
6	2023-02-05	2023-02-11
7	2023-02-12	2023-02-18
8	2023-02-19	2023-02-25
9	2023-02-26	2023-03-04
10	2023-03-05	2023-03-11
11	2023-03-12	2023-03-18
12	2023-03-19	2023-03-25
13	2023-03-26	2023-04-01
14	2023-04-02	2023-04-08
15	2023-04-09	2023-04-15
16	2023-04-16	2023-04-22
17	2023-04-23	2023-04-29
18	2023-04-30	2023-05-06
19	2023-05-07	2023-05-13
20	2023-05-14	2023-05-20
21	2023-05-21	2023-05-27
22	2023-05-28	2023-06-03
23	2023-06-04	2023-06-10
24	2023-06-11	2023-06-17
25	2023-06-18	2023-06-24
26	2023-06-25	2023-07-01
27	2023-07-02	2023-07-08
28	2023-07-09	2023-07-15
29	2023-07-16	2023-07-22
30	2023-07-23	2023-07-29
31	2023-07-30	2023-08-05
32	2023-08-06	2023-08-12
33	2023-08-13	2023-08-19
34	2023-08-20	2023-08-26
35	2023-08-27	2023-09-02

36	2023-09-03	2023-09-09
37	2023-09-10	2023-09-16
38	2023-09-17	2023-09-23
39	2023-09-24	2023-09-30
40	2023-10-01	2023-10-07
41	2023-10-08	2023-10-14
42	2023-10-15	2023-10-21
43	2023-10-22	2023-10-28
44	2023-10-29	2023-11-04
45	2023-11-05	2023-11-11
46	2023-11-12	2023-11-18
47	2023-11-19	2023-11-25
48	2023-11-26	2023-12-02
49	2023-12-03	2023-12-09
50	2023-12-10	2023-12-16
51	2023-12-17	2023-12-23
52	2023-12-24	2023-12-30
53	2023-12-31	2024-01-06

SQLQuery1_5.sql

In [26]:
```
use TestDB1;

declare @PR5 Table
(
   Name nvarchar(30),
   Capital nvarchar(30),
   Square float,
   Population bigint,
   Continent nvarchar(30)
)
insert into @PR5
select
    name,
        capital,
        square,
        population,
        continent
from Countries
where square<(select avg(square) / 1000 from Countries)
select
        Name,
    Capital,
    Square,
    Population,
    Continent
```

```
from @PR5
GO
```

(1 row affected)

(1 row affected)

Total execution time: 00:00:00.018

Out[26]:

Name	Capital	Square	Population	Continent
Бахрейн	Манама	701	1397000	Азия

SQLQuery1_6.sql

In [2]:
```
use Lab8;

select
DATENAME(month, data) as [Month Name],
count(distinct Kod) as [Exams Number],
count(distinct RegNom) as [Students Number] into
  #PR6
from Ozenka
group by
  DATENAME(month, data)
select * from #PR6
GO
```

Total execution time: 00:00:00.013

SQLQuery1_7.sql

In [20]:
```
use TestDB1;

create table ##PR7
(
   Name nvarchar(50),
   Density float
)
insert into ##PR7
(
   Name,
   Density
)
select
        name,
        round(population/square,0)as Density
from
        Countries
select*from ##PR7
```

(24 rows affected)

(24 rows affected)

Total execution time: 00:00:00.009

Out[20]:

Name	Density
Австрия	104
Азербайджан	112
Албания	99
Алжир	16
Ангола	20
Аргентина	15
Афганистан	46
Бангладеш	1112
Бахрейн	1992
Белиз	16
Белоруссия	45
Бельгия	368
Бенин	99
Болгария	64
Боливия	9
Ботсвана	3
Бразилия	24
Буркина-Фасо	69
Бутан	16
Великобритания	266
Венгрия	105
Венесуэла	34
Восточный Тимор	78
Вьетнам	278

SQLQuery1_8.sql

In [21]:

```
use Lab8;

with AverageCafedraSalary as
(
select
    K.NKaf as Workplace,
        K.ShifrKaf,
        avg(Zarplata) as [Average salary]
        from Sotrudnik C
        inner join Kafedra K on C.ShifrKaf_Sotr=K.ShifrKaf
        group by
        K.NKaf,K.ShifrKaf
)
select
```

```
   C.FIO,
   C.Zarplata,
   ACS.Workplace,
   ACS.[Average salary]
from
   Sotrudnik C
   inner join AverageCafedraSalary ACS on C.ShifrKaf_Sotr=ACS.ShifrKaf wh
   C.Zarplata<ACS.[Average salary]
```

(10 rows affected)

Total execution time: 00:00:00.008

Out[21]:

FIO	Zarplata	Workplace	Average salary
Сидоров	1500.00	Прикладная Математика	2500.00
Глухов	2000.00	Информационные Системы	2375.00
Чернов	1500.00	Информационные Системы	2375.00
Сергеева	2500.00	Математическое Моделирование	3000.00
Смирнов	1500.00	Общая Физика	2375.00
Лисик	2000.00	Общая Физика	2375.00
Романцев	2500.00	Высшая Математика	2833.3333
Соловьев	2500.00	Высшая Математика	2833.3333
Сорокина	2500.00	Экспериментальная Физика	2666.6666
Григорьев	2000.00	Экспериментальная Физика	2666.6666

SQLQuery2_1.sql

In [3]:
```
use TestDB1;

go
create view PR10
as
select
    name,
        capital,
        square,
        population,
        continent
from Countries
where
        population>10000000
        and
        square>500000
        and
        continent=N'Африка'
go
select
        *
from PR10
```

Commands completed successfully.

Commands completed successfully.

(2 rows affected)

Total execution time: 00:00:00.026

Out[3]:

name	capital	square	population	continent
Алжир	Алжир	2381740	39813722	Африка
Ангола	Луанда	1246700	25831000	Африка

SQLQuery2_2.sql

In [4]:
```
use TestDB1;

go
create view PR20
(
   Kontinent,
        Sr_PL,
        Sr_KolNas
)
as
select
    continent,
    avg(square) as Sr_PL,
        round(avg(cast(population as float) / square), 0) as Sr_KolNas
from Countries
group by
   continent
```

```
go
select
   *
from PR20
```

Commands completed successfully.

Commands completed successfully.

(5 rows affected)

Total execution time: 00:00:00.031

Out[4]:

Kontinent	Sr_PL	Sr_KolNas
Азия	181462	520
Африка	923126	42
Европа	114212	151
Северная Америка	22966	16
Южная Америка	3322371	21

SQLQuery2_3.sql

In [5]:

```
use Lab8;

go
create view PR30
(
   Surname,
   Job,
   Title,
   Degree,
   Workplace,
   [Exams Number]
 )
 as select
    FIO,
  Dolgn,
  Zvanie,
  Stepen,
  ShifrKaf_Sotr,
  (select count(distinct o.kod) from ozenka o where O.Tab_Nom = C.TabNom)
  From
  Sotrudnik C
  inner join Prepodavatel P on C.TabNom=P.TabNom_Pr
  inner join Kafedra K on C.ShifrKaf_Sotr=K.ShifrKaf
go
select
   *
   from PR30
```

Commands completed successfully.

Commands completed successfully.

(14 rows affected)

Total execution time: 00:00:00.042

Out[5]:

Surname	Job	Title	Degree	Workplace	Exams Number
Прохоров	зав.кафедрой	профессор	д.т.н	пи	1
Семенов	преподаватель	доцент	к.ф.-м.н	пи	1
Петров	преподаватель	доцент	к.т.н	пи	1
Андреев	зав.кафедрой	профессор	д.ф.-м.н	ис	0
Борисов	преподаватель	доцент	к.ф.-м.н	ис	1
Басов	зав.кафедрой	профессор	д.т.н	мм	1
Сергеева	преподаватель	доцент	к.т.н	мм	1
Волков	зав.кафедрой	профессор	д.т.н	оф	0
Зайцев	преподаватель	доцент	к.т.н	оф	2
Смирнов	преподаватель	ассистент	NULL	оф	0
Кузнецов	зав.кафедрой	профессор	д.ф.-м.н	вм	1
Романцев	преподаватель	профессор	д.ф.-м.н	вм	1
Соловьев	преподаватель	доцент	к.ф.-м.н	вм	1
Зверев	зав.кафедрой	профессор	д.ф.-м.н	эф	1

SQLQuery2_4.sql

In [6]:

```
DECLARE @MonthTable TABLE (
    MonthNumber INT,
    MonthName VARCHAR(20),
    DaysInMonth INT
);

DECLARE @year INT = YEAR(GETDATE());
DECLARE @month INT = 1;
WHILE @month <= 12
BEGIN
    INSERT INTO @MonthTable (MonthNumber, MonthName, DaysInMonth)
    VALUES (
        @month,
        DATENAME(MONTH, DATEFROMPARTS(@year, @month, 1)),
        DAY(EOMONTH(DATEFROMPARTS(@year, @month, 1)))
    );
    SET @month = @month + 1;
END

SELECT * FROM @MonthTable;
GO
```

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(1 row affected)
(1 row affected)
(1 row affected)
(12 rows affected)
Total execution time: 00:00:00.022

Out[6]:

MonthNumber	MonthName	DaysInMonth
1	January	31
2	February	28
3	March	31
4	April	30
5	May	31
6	June	30
7	July	31
8	August	31
9	September	30
10	October	31
11	November	30
12	December	31

SQLQuery2_5.sql

In [7]:

```
use TestDB1;

declare @PR50 Table
(
   Name varchar(50),
   Capital varchar(50),
   Square float,
   Population bigint,
   Continent varchar(50)
)
insert into @PR50
  select
    name,
    capital,
    population,
    square,
    continent
  from Countries A
where square*100 < (select avg(square) from Countries B where A.continent
select
   Name,
   Capital,
   Square,
   Population,
```

```
   Continent
 from @PR50
 GO
```

(1 row affected)

(1 row affected)

Total execution time: 00:00:00.021

Out[7]:

Name	Capital	Square	Population	Continent
???????	??????	1397000	701	????

SQLQuery2_6.sql

In [8]:

```
use Lab8;

select
DATENAME(week, data) as [Week Name],
count(distinct Kod) as [Exams Number],
count(distinct RegNom) as [Students Number] into
  #PR60
from Ozenka
group by
  DATENAME(week, data)
select * from #PR60
```

(2 rows affected)

(2 rows affected)

Total execution time: 00:00:00.013

Out[8]:

Week Name	Exams Number	Students Number
24	6	8
25	3	5

SQLQuery2_7.sql

In [9]:

```
use TestDB1;

create table ##PR70
(
   Name varchar(50),
   MaxSquare int,
   MinSquare int
)
insert into
   ##PR70
   (Name, MaxSquare,MinSquare)
select
continent,
max(square)as MaxSquare,
min(square)as MinSquare
from
  Countries
group by
```

```
  continent
select*from ##PR70
```

(5 rows affected)

(5 rows affected)

Total execution time: 00:00:00.008

Out[9]:

Name	MaxSquare	MinSquare
????	647500	701
??????	2381740	112620
??????	244820	28748
???????? ???????	22966	22966
????? ???????	8511965	912050

SQLQuery2_8.sql

In [10]:

```
use Lab8;

with AverageFacultySalary as
(
select
    F.NFak as Faculty,
        F.ABFak,
        avg(Zarplata) as [Average salary]
from Sotrudnik C
        inner join Kafedra K on C.ShifrKaf_Sotr=K.ShifrKaf
        inner join Fakultet F on F.ABFak = K.AbFak_Kaf
group by
        F.NFak, F.ABFak
)
select
   C.FIO,
   C.Zarplata,
   AFS.Faculty,
   AFS.[Average salary]
from
   Sotrudnik C
   inner join Kafedra K on C.ShifrKaf_Sotr = K.ShifrKaf
   inner join AverageFacultySalary AFS on AFS.ABFak = K.AbFak_Kaf
where
   C.Zarplata<AFS.[Average salary]
```

(11 rows affected)

Total execution time: 00:00:00.013

Out[10]:

FIO	Zarplata	Faculty	Average salary
Зайцев	2500.00	Естественные Науки	2571.4285
Смирнов	1500.00	Естественные Науки	2571.4285
Лисик	2000.00	Естественные Науки	2571.4285
Романцев	2500.00	Естественные Науки	2571.4285
Соловьев	2500.00	Естественные Науки	2571.4285
Сидоров	1500.00	Информационные Науки	2437.50
Глухов	2000.00	Информационные Науки	2437.50
Чернов	1500.00	Информационные Науки	2437.50
Сергеева	2500.00	Физико Математический	2800.00
Сорокина	2500.00	Физико Математический	2800.00
Григорьев	2000.00	Физико Математический	2800.00

SQLQuery2_9.sql

In [11]:

```
USE TestDB1;

IF OBJECT_ID('dbo.PR1', 'V') IS NOT NULL
    DROP VIEW dbo.PR1;

IF OBJECT_ID('dbo.PR10', 'V') IS NOT NULL
    DROP VIEW dbo.PR10;

IF OBJECT_ID('dbo.PR2', 'V') IS NOT NULL
    DROP VIEW dbo.PR2;

IF OBJECT_ID('dbo.PR20', 'V') IS NOT NULL
    DROP VIEW dbo.PR20;

IF OBJECT_ID('tempdb..##PR7', 'U') IS NOT NULL
    DROP TABLE ##PR7;

IF OBJECT_ID('tempdb..##PR70', 'U') IS NOT NULL
    DROP TABLE ##PR70;

USE Lab8;

IF OBJECT_ID('dbo.PR3', 'V') IS NOT NULL
    DROP VIEW dbo.PR3;

IF OBJECT_ID('dbo.PR30', 'V') IS NOT NULL
    DROP VIEW dbo.PR30;

IF OBJECT_ID('tempdb..#PR6', 'U') IS NOT NULL
    DROP TABLE #PR6;

IF OBJECT_ID('tempdb..#PR60', 'U') IS NOT NULL
    DROP TABLE #PR60;

GO
```

Commands completed successfully.
Total execution time: 00:00:00.035