Лабораторная работа №6 Индексы	Ф.И.О.	Курляк Д.В.
	Группа	ПрИн - 367
	Преподаватель	Соколов А. А.
	Дата сдачи	08.12.2020

Индексы:

1. SELECT

demo_cup.cities.Name, demo_cup.stadions.Name

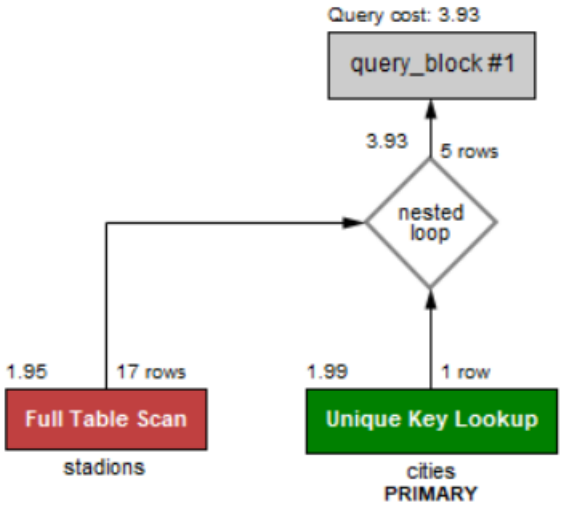
FROM

demo_cup.cities

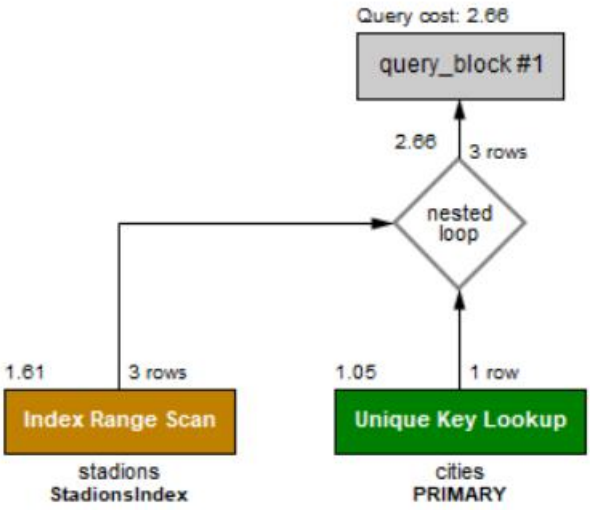
JOIN

demo_cup.stadions on demo_cup.stadions.CityId = demo_cup.cities.id

where stadions.Capacity < 45000;



Create index stadionCapacityIndex on stadions (Capacity);



2. SELECT

FIO, DateTimeFrom, DataTimeTo

FROM

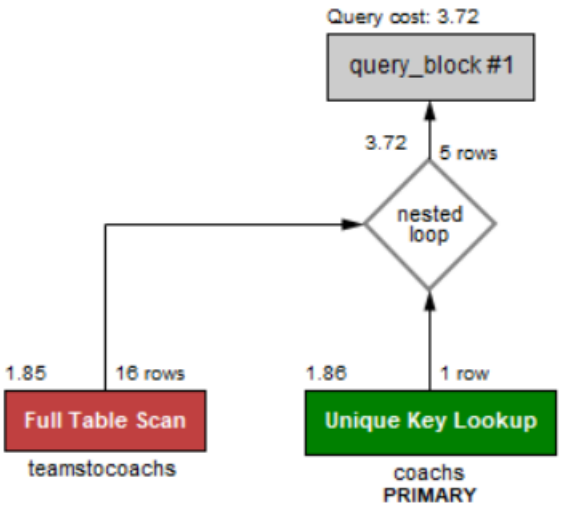
coachs

JOIN

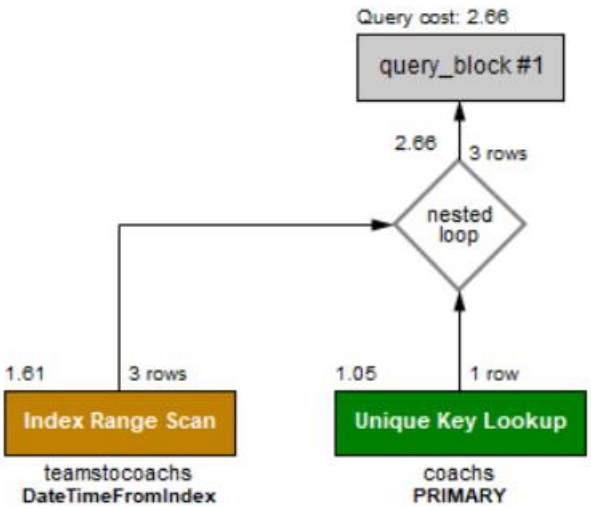
teamstocoachs ON teamstocoachs.CoachId = coachs.id

WHERE

teamstocoachs.DateTimeFrom > '2018-01-01';

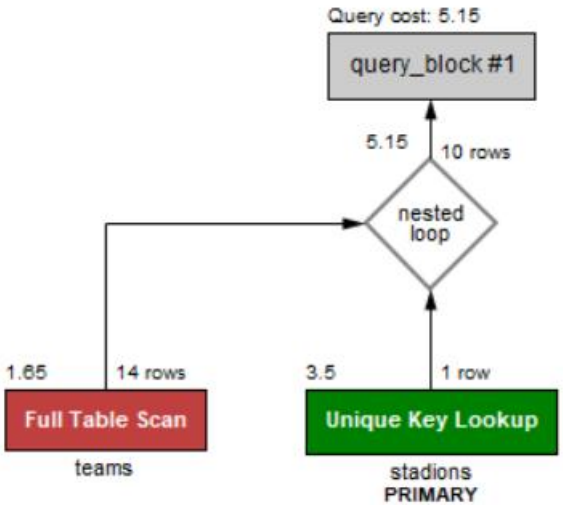


Create index DateTimeFromIndex on teamstocoachs (DateTimeFrom);

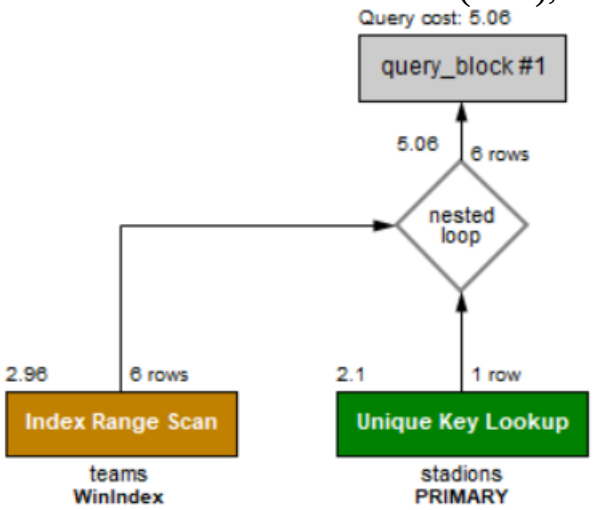


3.

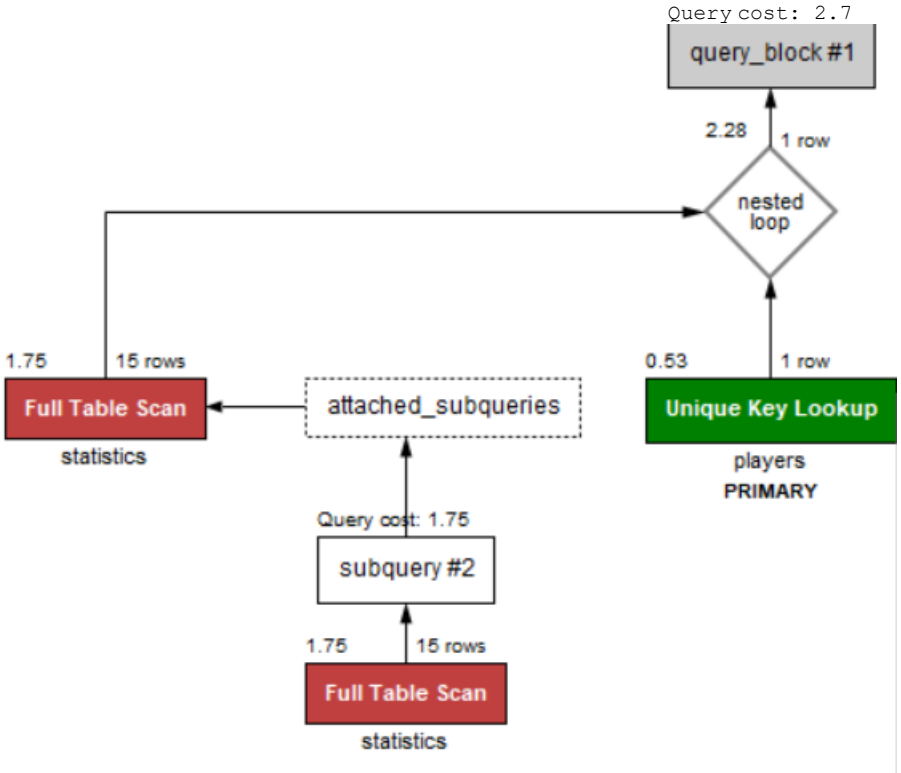
```
SELECT
   COUNT(*) AS 'Количество стадионов Москвы', teams.Name
FROM
   stadions
JOIN
   teams
   on teams.StadionId = stadions.id
WHERE
   Win between 2 and 5;
```



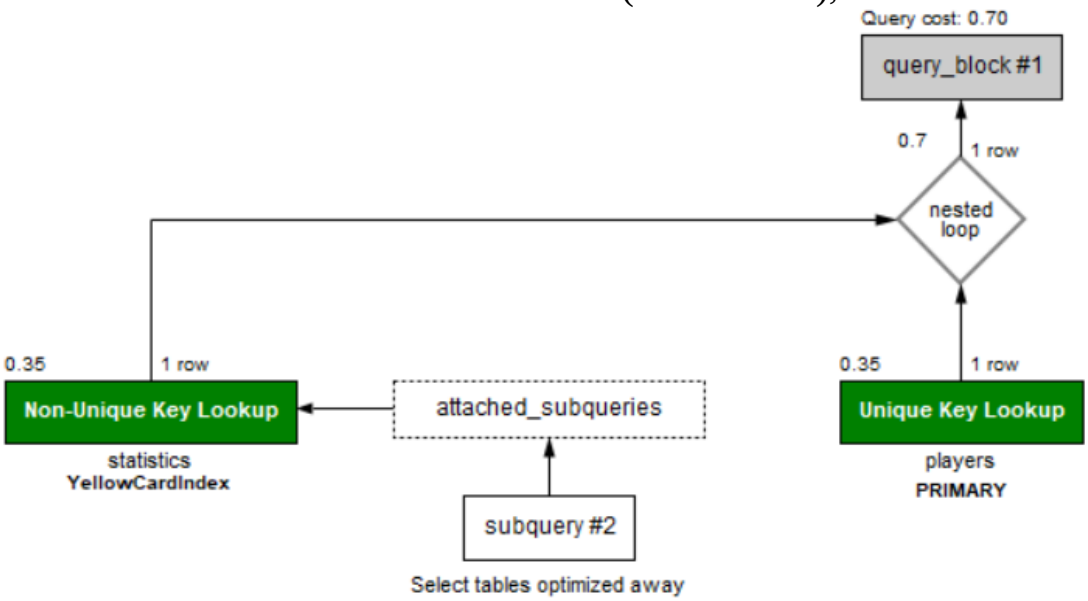
Create index WinIndex on teams (Win);



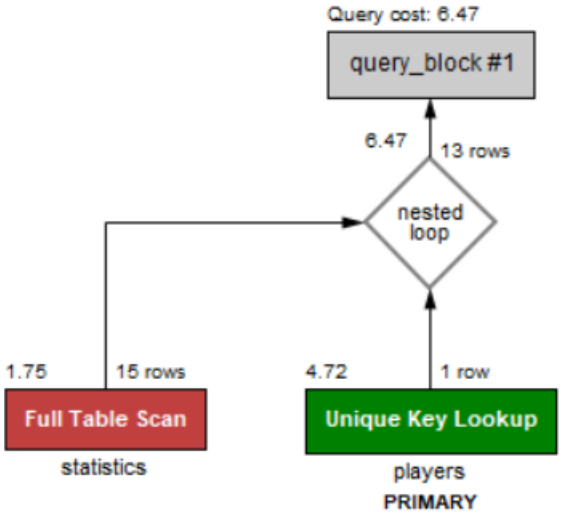
4. SELECT
   FIO, MAX(YellowCard) as "Максимальное количество количество карточек"
   FROM
   players
   JOIN
   statistics ON statistics.PlayerId = players.id
   where YellowCard = (select MAX(YellowCard) from statistics)



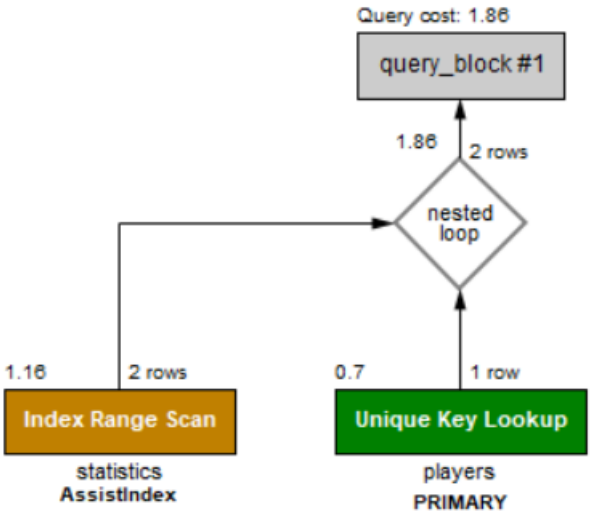
Create index YellowCardIndex on statistics (YellowCard);



5. SELECT
   *
   FROM
   statistics
   RIGHT JOIN
   players ON statistics.PlayerId = players.id
   where assist > 3;



Create index AssistIndex on statistics (assist);



Процедуры

1. **Показать игрока с максимальным количество карточек**

```
DELIMITER $$
CREATE PROCEDURE ShowPlayerWithMaxCountOfCards()
BEGIN
SELECT
   FIO, MAX(YellowCard + RedCard) as "Количество карточек", YellowCard, RedCard
FROM
   players
      JOIN
   statistics ON statistics.PlayerId = players.id
      where YellowCard + RedCard = (select MAX(YellowCard + RedCard) from statistics);
      END$$
DELIMITER ;
```

```
1    call ShowPlayerWithMaxCountOfCards();
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FIO	Количество карточек	YellowCard	RedCard
Андрей Прокопенко	45	44	1

2. **Показать результат встречи с данным id**

```
DELIMITER $$
CREATE PROCEDURE ShowResultOfTheMatch(game_id int)
BEGIN
SELECT
        stadions.Name AS 'Стадион',
    referees.Name AS 'Судья',
    TourNumberId,
    team1.name,
    team2.name,
    DateOfMatch,
    statistics.goals,
    teamstoplayers.TeamId,
    players.FIO
FROM
    gamesbetweentwoteams
      JOIN
    statistics
```

```
    JOIN
  teamstoplayers on statistics.PlayerId = teamstoplayers.PlayerId
    JOIN
  players on players.id = statistics.PlayerId
            JOIN
  referees ON referees.id = gamesbetweentwoteams.RefereeId
    JOIN
  stadions ON stadions.id = gamesbetweentwoteams.StadionId
            JOIN
     teams as team1 on team1.id = Team1Id
            JOIN
     teams as team2 on team2.id = Team2Id
WHERE
  statistics.GameId = game_id
    AND gamesbetweentwoteams.id = game_id;
    END$$
DELIMITER ;
```

```
36 •   call ShowResultOfTheMatch(1);
37
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Стадион	Судья	TourNumberId	name	name	DateOfMatch	goals	TeamId	FIO
Волгоград-Арена	Николаев Алексей Валерьевич	1	Ротор	ЦСКА	2020-09-01	1	1	Криштиану Роналду
Волгоград-Арена	Николаев Алексей Валерьевич	1	Ротор	ЦСКА	2020-09-01	3	2	Андрей Прокопенко
Волгоград-Арена	Николаев Алексей Валерьевич	1	Ротор	ЦСКА	2020-09-01	2	1	Леонель Месси

3. Показать состав команды с заданным id

```
DELIMITER $$
CREATE PROCEDURE ShowsPlayersTeams(idOfTeam int)
BEGIN
SELECT
  demo_cup.players.FIO, demo_cup.teamstoplayers.TeamId
```

```
FROM
   demo_cup.players
      JOIN
   demo_cup.teamstoplayers on demo_cup.players.id =
demo_cup.teamstoplayers.PlayerId
   WHERE
   demo_cup.teamstoplayers.TeamId = idOfTeam;
            END$$
DELIMITER ;
```

```
15 •   call ShowsPlayersTeams(2);
```

Result Grid | Filter Rows: | Export:

FIO	TeamId
Андрей Прокопенко	2
Курляк Дмитрий Владимирович	2
Низок Сергей Григорьевич	2

Функции

1. DELIMITER $$

```
CREATE FUNCTION CountOfCard (yellow int, red int)
Returns int DETERMINISTIC
BEGIN
        return yellow + red;
END;
$$
DELIMITER ;
```

```
SELECT
    players.FIO, CountOfCard(statistics.YellowCard , statistics.RedCard) as 'Количетство карточек'
FROM
    statistics
        JOIN
    players ON players.id = statistics.PlayerId;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FIO	Количетство карточек
Криштиану Роналду	3
Леонель Месси	2
Андрей Прокопенко	45
Леонель Месси	0
Криштиану Роналду	4
Иванов Дмитрий Иванович	1
Супер Игрок Игроков	1
Абрамович Иван Абрамов	1
Низок Сергей Григорьевич	1
Мостовой Сергей Григорьевич	1

2. DELIMITER $$

```
CREATE FUNCTION PlayersWithTeam (TeamId int)
Returns boolean DETERMINISTIC
BEGIN
        declare a boolean;
        if TeamId is null then
                set a = false;
        else
                set a = true;
       END IF;
        return (a);
END;
$$
DELIMITER ;
```

```
16 •  SELECT
17        players.FIO, PLAYERSWITHTEAM(teamstoplayers.TeamId) as "Есть команда"
18    FROM
19        teamstoplayers
20            JOIN
21        players ON players.id = teamstoplayers.PlayerId;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FIO	Есть команда
Криштиану Роналду	1
Леонель Месси	1
Андрей Прокопенко	1
Курляк Дмитрий Владимирович	1
Иванов Дмитрий Иванович	0
Абрамович Иван Абрамов	1
Абрамович Иван Абрамов	1
Низок Сергей Григорьевич	1
Мостовой Сергей Григорьевич	1
Адамов Роман Станиславович	1

3.

```
DELIMITER $$
CREATE FUNCTION TourView (Number int)
  RETURNS varchar(45)
  DETERMINISTIC
BEGIN
        declare a varchar(45);
        case
                when Number = 1 then set a = "Первый тур 04/09/2020 - 07/09/2020";
       when Number = 2 then set a = "Второй тур 11/09/2020 - 14/09/2020";
       when Number = 3 then set a = "Третий тур 17/09/2020 - 20/09/2020";
       when Number = 4 then set a = "Четвертый тур 24/09/2020 - 27/09/2020";
        end case;
   return (a);
END;
$$
```

```
SELECT
    COUNT(gamesbetweentwoteams.TourNumberId),
    TOURVIEW(tournumbers.Number)
FROM
    tournumbers
        JOIN
    gamesbetweentwoteams ON gamesbetweentwoteams.TourNumberId = tournumbers.Number
WHERE
    gamesbetweentwoteams.TourNumberId = 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Count(gamesbetweentwoteams.TourNumberId)	TourView(tournumbers.Number)
4	Первый тур 04/09/2020 - 07/09/2020

Представления

1.

```
CREATE VIEW PlayerStatistics AS
    SELECT
        FIO, Goals, YellowCard, RedCard, Assist
    FROM
        players
            JOIN
        statistics ON statistics.PlayerId = players.id;

Select * from PlayerStatistics;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FIO	Goals	YellowCard	RedCard	Assist
Криштиану Роналду	1	3	0	5
Леонель Месси	3	2	0	17
Андрей Прокопенко	3	44	1	2
Леонель Месси	2	0	0	0
Криштиану Роналду	2	1	3	2
Иванов Дмитрий Иванович	1	0	1	1
Супер Игрок Игроков	1	0	1	1
Абрамович Иван Абрамов	1	0	1	1
Низок Сергей Григорьевич	1	0	1	1
Мостовой Сергей Григорьевич	1	0	1	1

2.

```
CREATE VIEW CitiesStadions AS
    SELECT
    cities.Name as 'Название города', stadions.Name
FROM
    cities
        JOIN
    stadions on cities.id = stadions.CityId;
Select * from CitiesStadions;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Название города	Name
Волгоград	Волгоград-Арена
Москва	Лужники
Москва	Амкал
Санкт-Петербург	Газпром-Арена
Сочи	Фишт
Казань	Казань Арена
Самара	Самара Арена
Нижний-Новгород	Нижний Новгород
Ростов	Ростов Арена
Мордовия	Мордовия Арена