МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
ФГБОУ ВО АЛТАЙСКИЙ ГОСУДАСТВЕННЫЙ УНИВЕРСИТЕТ

Институт цифровых технологий, электроники и физики
Кафедра вычислительной техники и электроники

Работа с датой временем. Условия. Однотабличные запросы

(Отчёт по индивидуальному заданию по курсу «Базы Данных»)

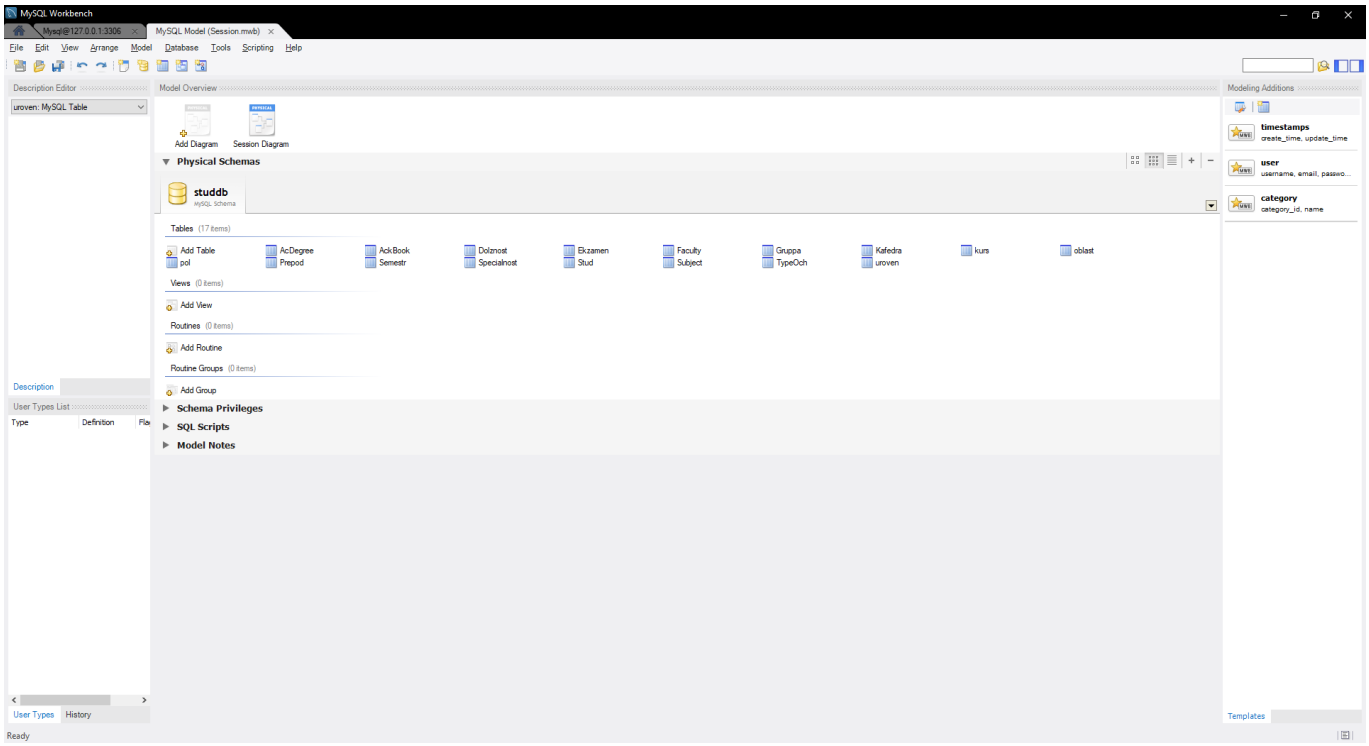
Выполнил ст. 3-го курса, 595 гр.:
_____ Д. В. Осипенко
Проверил: преп. каф. ВТиЭ
_____ Я. С. Сергеева
«___» _____ 2021 г.

Барнаул, 2021 г.

Содержание

1 Информация о создании БД

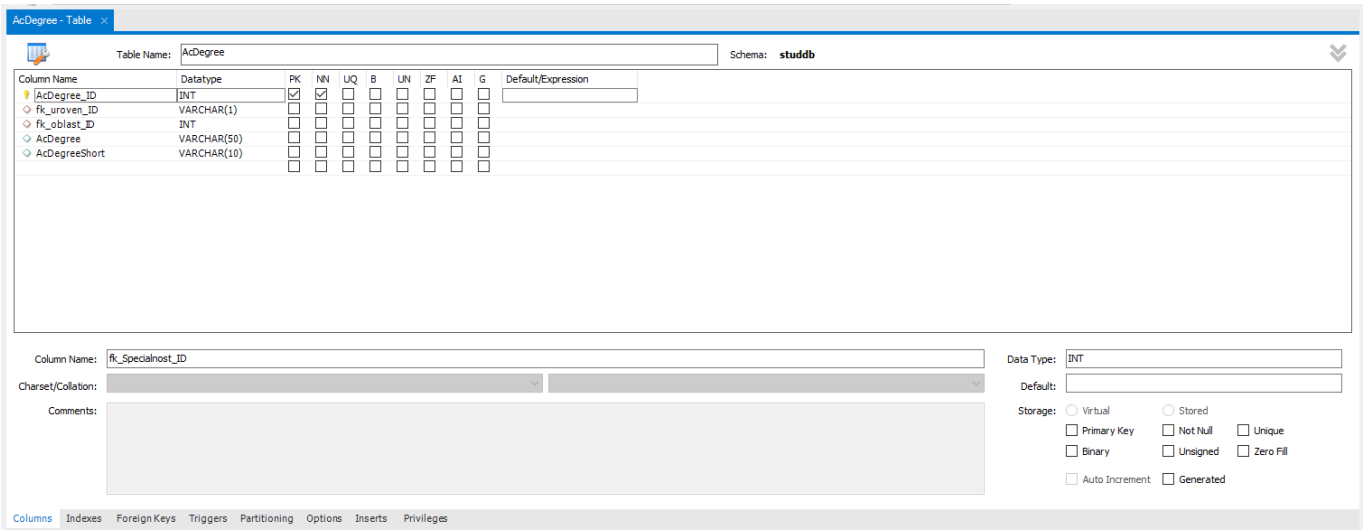
```
CREATE SCHEMA IF NOT EXISTS `studdb` DEFAULT CHARACTER SET utf8
```



2 Информация о создании таблиц

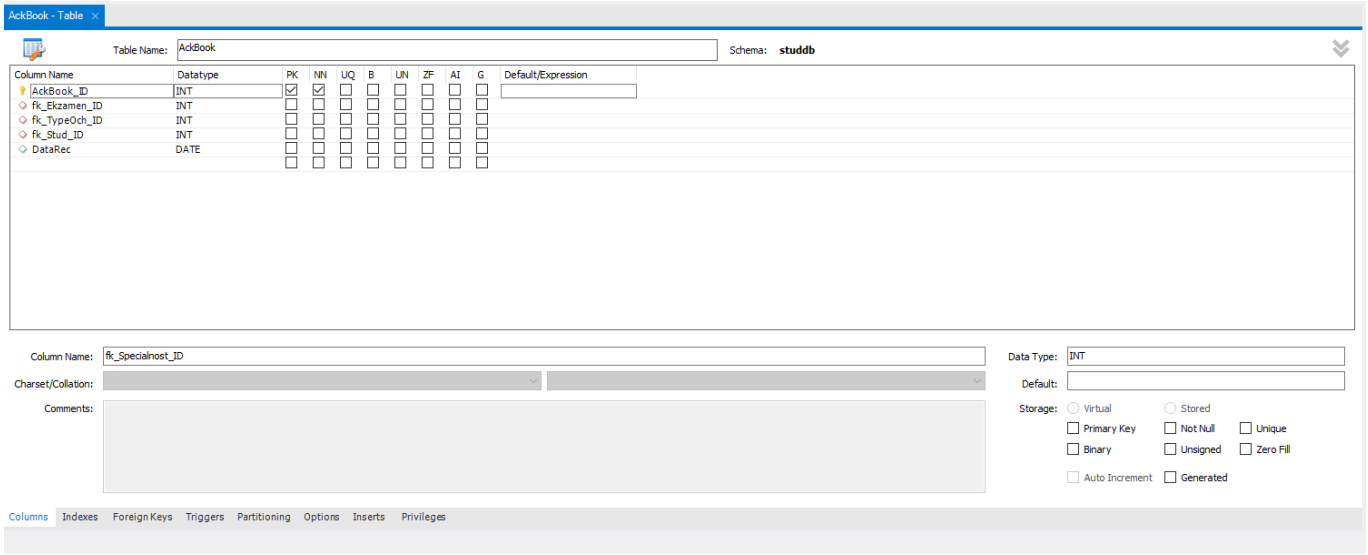
2.1 AcDegree

```
CREATE TABLE IF NOT EXISTS `studdb`.`AcDegree` (
  `AcDegree_ID` INT NOT NULL,
  `fk_uroven_ID` VARCHAR(1) NULL,
  `fk_oblast_ID` INT NULL,
  `AcDegree` VARCHAR(50) NULL,
  `AcDegreeShort` VARCHAR(10) NULL,
  PRIMARY KEY (`AcDegree_ID`),
  INDEX `fk_oblast_ID_idx` (`fk_oblast_ID` ASC) VISIBLE,
  INDEX `fk_uroven_ID_idx` (`fk_uroven_ID` ASC) VISIBLE,
  CONSTRAINT `fk_uroven_ID`
    FOREIGN KEY (`fk_uroven_ID`)
    REFERENCES `studdb`.`uroven` (`uroven_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_oblast_ID`
    FOREIGN KEY (`fk_oblast_ID`)
    REFERENCES `studdb`.`oblast` (`oblast_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB
```



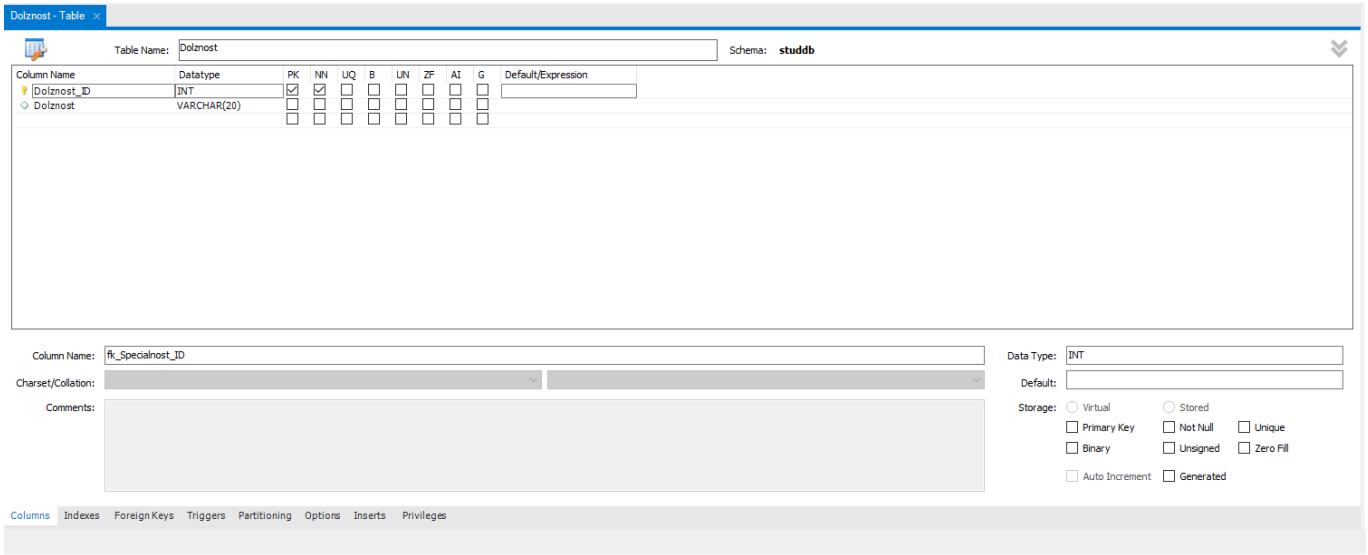
2.2 AckBook

```
CREATE TABLE IF NOT EXISTS `studdb`.`AckBook` (
  `AckBook_ID` INT NOT NULL,
  `fk_Ekzamen_ID` INT NULL,
  `fk_TypeOch_ID` INT NULL,
  `fk_Stud_ID` INT NULL,
  `DataRec` DATE NULL,
  PRIMARY KEY (`AckBook_ID`),
  INDEX `fk_Ekzamen_ID_idx` (`fk_Ekzamen_ID` ASC) VISIBLE,
  INDEX `fk_TypeOch_ID_idx` (`fk_TypeOch_ID` ASC) VISIBLE,
  INDEX `1_idx` (`fk_Stud_ID` ASC) VISIBLE,
  CONSTRAINT `fk_Ekzamen_ID`
    FOREIGN KEY (`fk_Ekzamen_ID`)
    REFERENCES `studdb`.`Ekzamen` (`Ekzamen_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_TypeOch_ID`
    FOREIGN KEY (`fk_TypeOch_ID`)
    REFERENCES `studdb`.`TypeOch` (`TypeOch_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Stud_ID`
    FOREIGN KEY (`fk_Stud_ID`)
    REFERENCES `studdb`.`Stud` (`Stud_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB
```



2.3 Dolznost

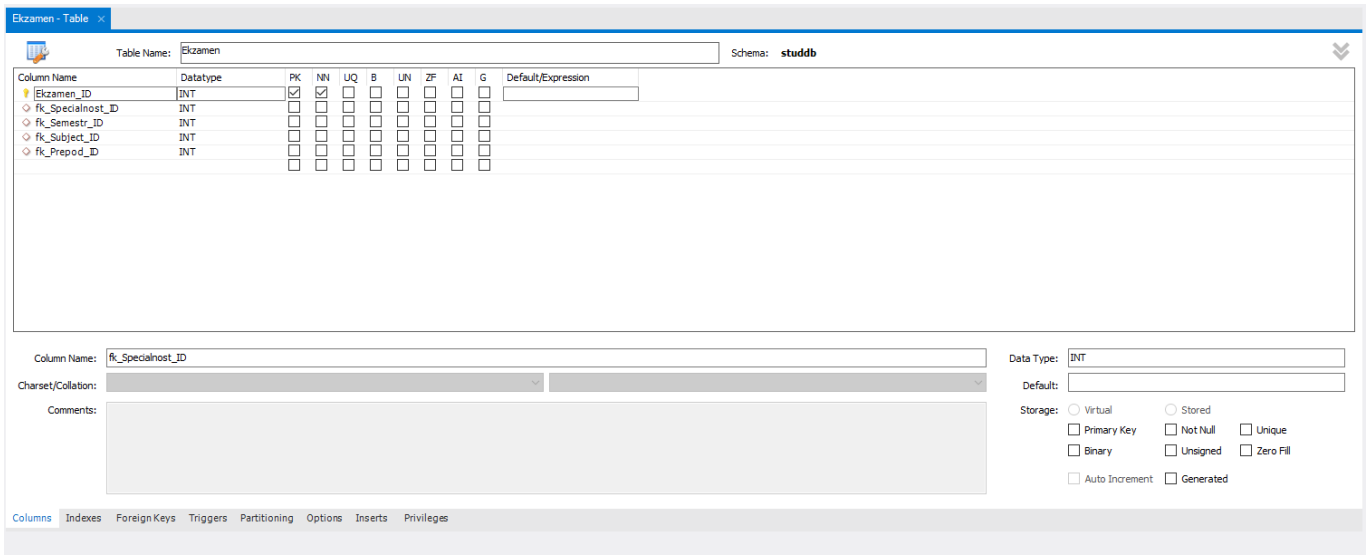
```
CREATE TABLE IF NOT EXISTS `studdb`.`Dolznost` (
  `Dolznost_ID` INT NOT NULL,
  `Dolznost` VARCHAR(20) NULL,
  PRIMARY KEY (`Dolznost_ID`))
ENGINE = InnoDB
```



2.4 Ekzamen

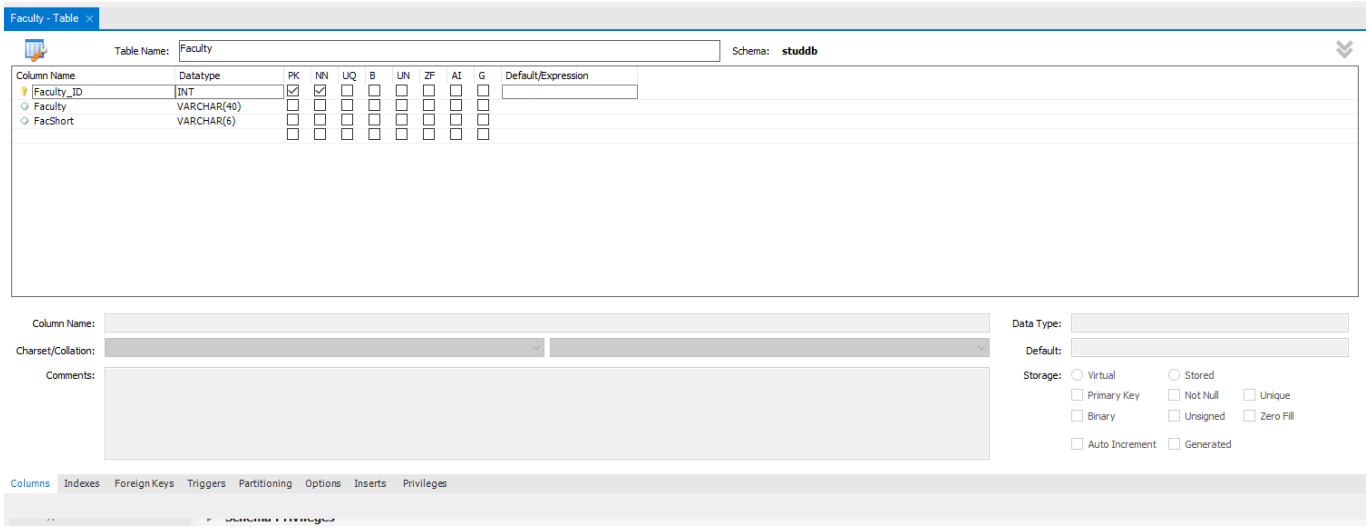
```
CREATE TABLE IF NOT EXISTS `studdb`.`Ekzamen` (
  `Ekzamen_ID` INT NOT NULL,
  `fk_Specialnost_ID` INT NULL,
  `fk_Semestr_ID` INT NULL,
  `fk_Subject_ID` INT NULL,
  `fk_Prepod_ID` INT NULL,
  PRIMARY KEY (`Ekzamen_ID`),
  INDEX `fk_Specialnost_ID_idx` (`fk_Specialnost_ID` ASC) VISIBLE,
  INDEX `fk_Semestr_ID_idx` (`fk_Semestr_ID` ASC) VISIBLE,
  INDEX `fk_Subject_ID_idx` (`fk_Subject_ID` ASC) VISIBLE,
  INDEX `fk_Prepod_ID_idx` (`fk_Prepod_ID` ASC) VISIBLE,
  CONSTRAINT `fk_Specialnost_ID`
```

```
    FOREIGN KEY (‘fk_Specialnost_ID‘)
    REFERENCES ‘studdb‘.‘Specialnost‘ (‘Specialnost_ID‘)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT ‘fk_Semestr_ID‘
    FOREIGN KEY (‘fk_Semestr_ID‘)
    REFERENCES ‘studdb‘.‘Semestr‘ (‘Semestr_ID‘)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT ‘fk_Subject_ID‘
    FOREIGN KEY (‘fk_Subject_ID‘)
    REFERENCES ‘studdb‘.‘Subject‘ (‘Subject_ID‘)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT ‘fk_Prepod_ID‘
    FOREIGN KEY (‘fk_Prepod_ID‘)
    REFERENCES ‘studdb‘.‘Prepod‘ (‘Prepod_ID‘)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB
```



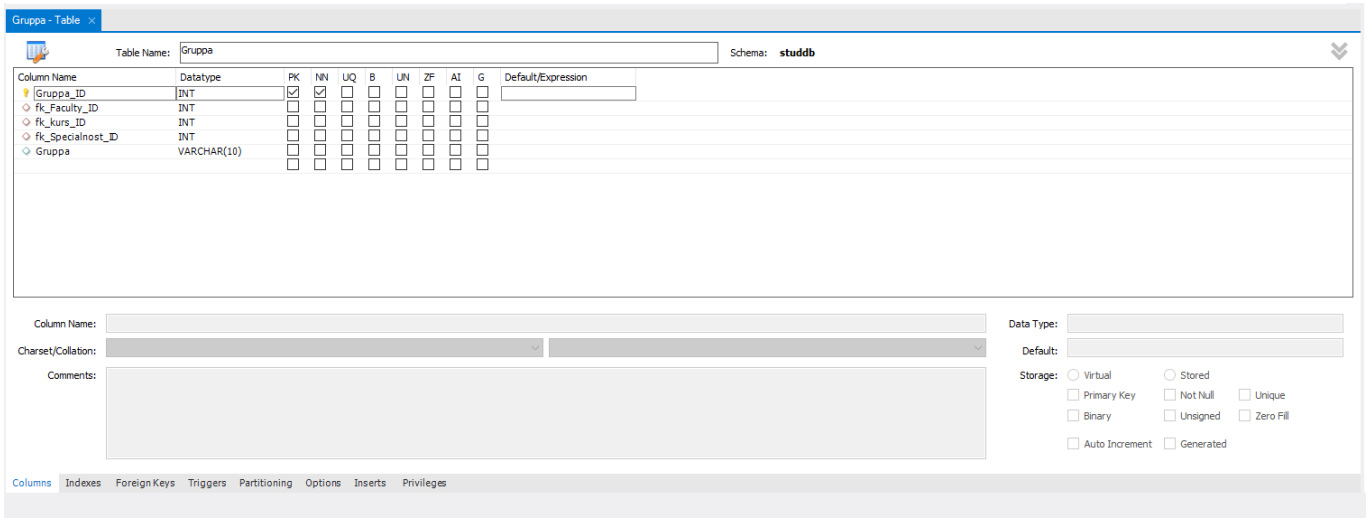
2.5 Faculty

```
 CREATE TABLE IF NOT EXISTS ‘studdb‘.‘Faculty‘ (
  ‘Faculty_ID‘ INT NOT NULL,
  ‘Faculty‘ VARCHAR(40) NULL,
  ‘FacShort‘ VARCHAR(6) NULL,
  PRIMARY KEY (‘Faculty_ID‘))
ENGINE = InnoDB
```



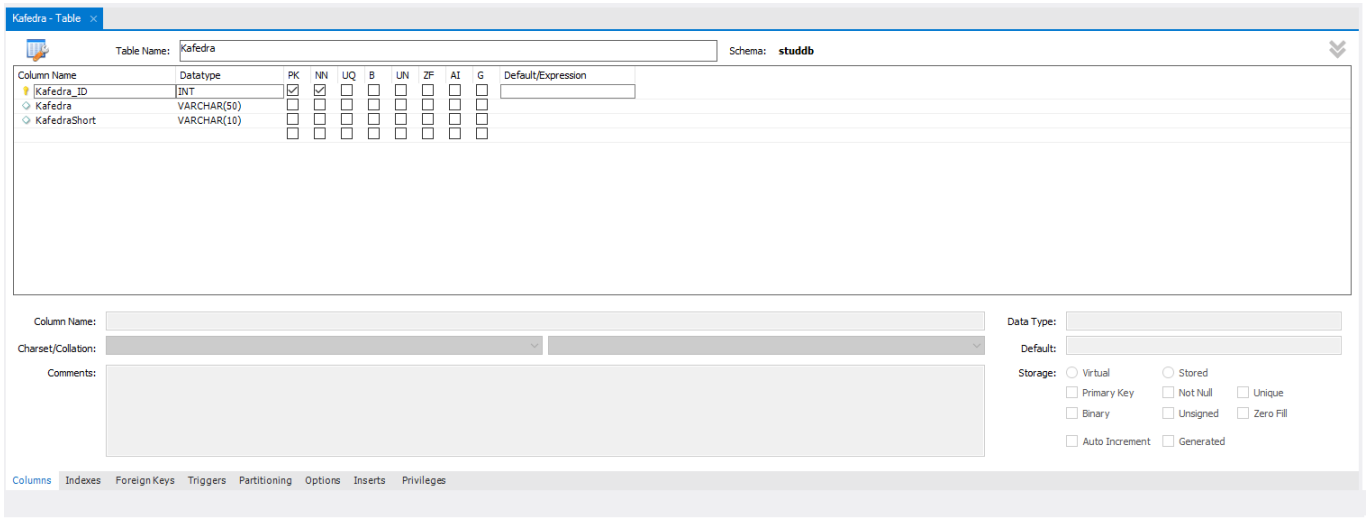
2.6 Gruppa

```
CREATE TABLE IF NOT EXISTS `studdb`.`Gruppa` (
  `Gruppa_ID` INT NOT NULL,
  `fk_Faculty_ID` INT NULL,
  `fk_kurs_ID` INT NULL,
  `fk_Specialnost_ID` INT NULL,
  `Gruppa` VARCHAR(10) NULL,
  PRIMARY KEY (`Gruppa_ID`),
  INDEX `fk_Faculty_ID_idx` (`fk_Faculty_ID` ASC) VISIBLE,
  INDEX `fk_kurs_ID_idx` (`fk_kurs_ID` ASC) VISIBLE,
  INDEX `fk_Specialnost_ID_idx` (`fk_Specialnost_ID` ASC) VISIBLE,
  CONSTRAINT `fk_Faculty_ID`
    FOREIGN KEY (`fk_Faculty_ID`)
    REFERENCES `studdb`.`Faculty` (`Faculty_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_kurs_ID`
    FOREIGN KEY (`fk_kurs_ID`)
    REFERENCES `studdb`.`kurs` (`kurs_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Specialnost_ID`
    FOREIGN KEY (`fk_Specialnost_ID`)
    REFERENCES `studdb`.`Specialnost` (`Specialnost_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB
```



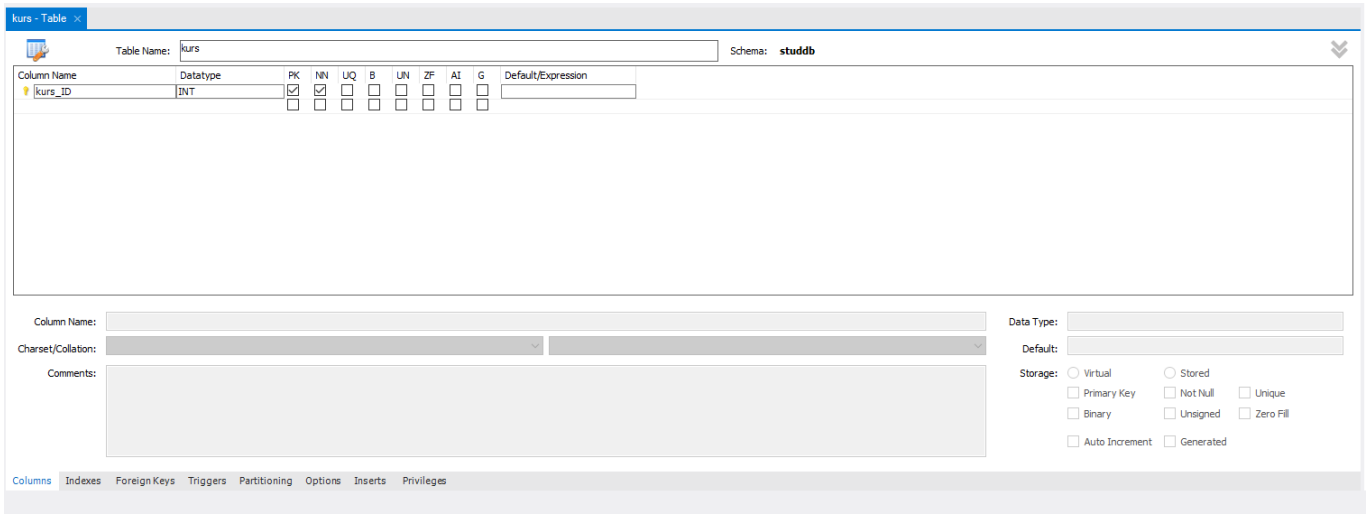
2.7 Kafedra

```
 CREATE TABLE IF NOT EXISTS `studdb`.`Kafedra` (
  `Kafedra_ID` INT NOT NULL,
  `Kafedra` VARCHAR(50) NULL,
  `KafedraShort` VARCHAR(10) NULL,
  PRIMARY KEY (`Kafedra_ID`))
ENGINE = InnoDB
```



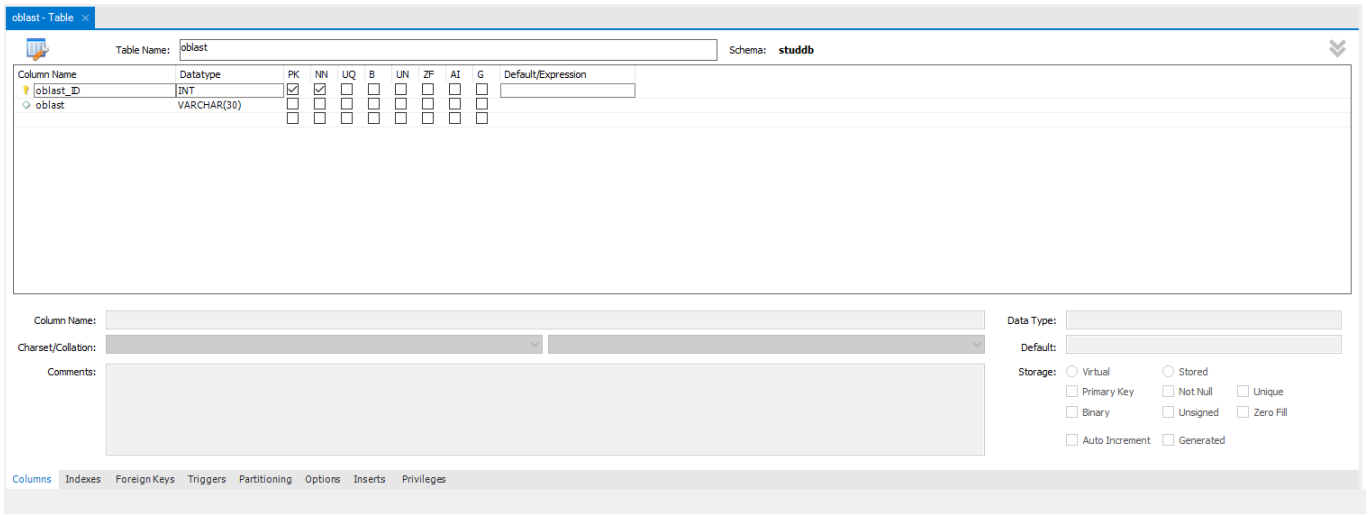
2.8 kurs

```
 CREATE TABLE IF NOT EXISTS `studdb`.`kurs` (
  `kurs_ID` INT NOT NULL,
  PRIMARY KEY (`kurs_ID`))
ENGINE = InnoDB
```



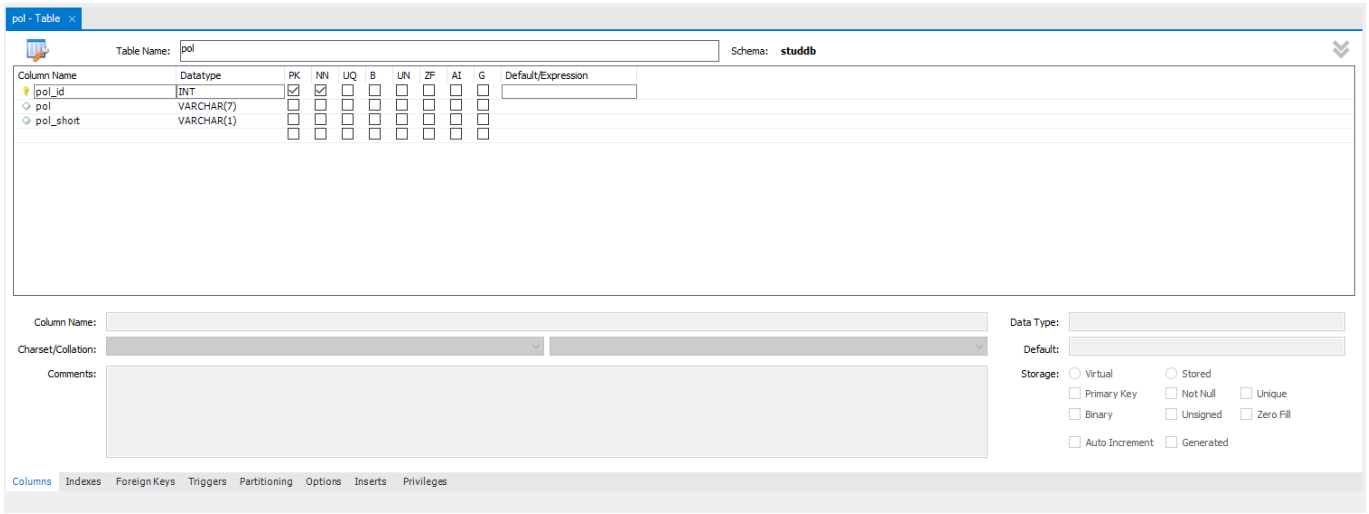
2.9 oblast

```
 CREATE TABLE IF NOT EXISTS `studdb`.`oblast` (
  `oblast_ID` INT NOT NULL,
  `oblast` VARCHAR(30) NULL,
  PRIMARY KEY (`oblast_ID`))
ENGINE = InnoDB
```



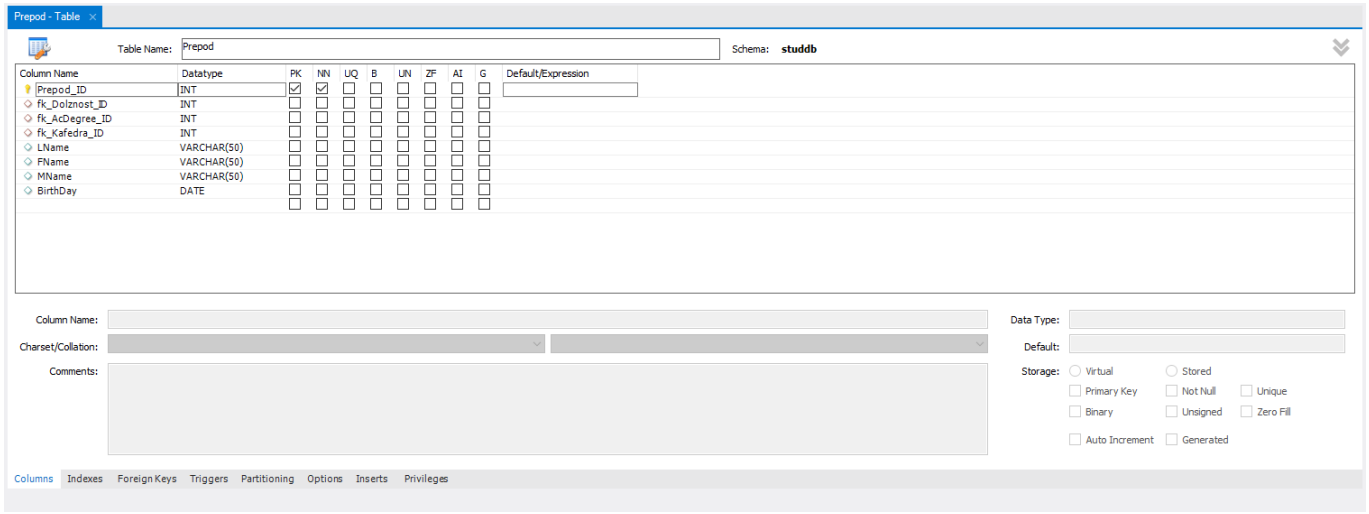
2.10 pol

```
 CREATE TABLE IF NOT EXISTS `studdb`.`pol` (
  `pol_id` INT NOT NULL,
  `pol` VARCHAR(7) NULL,
  `pol_short` VARCHAR(1) NULL,
  PRIMARY KEY (`pol_id`))
ENGINE = InnoDB
```



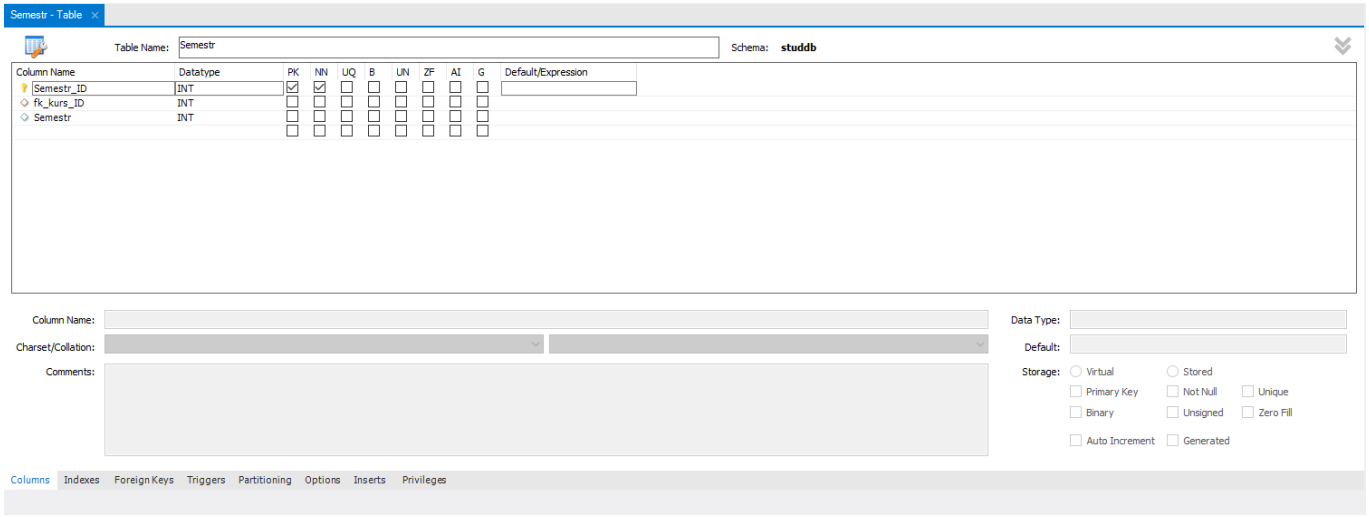
2.11 Prepod

```
CREATE TABLE IF NOT EXISTS `studdb`.`Prepod` (
  `Prepod_ID` INT NOT NULL,
  `fk_Dolznost_ID` INT NULL,
  `fk_AcDegree_ID` INT NULL,
  `fk_Kafedra_ID` INT NULL,
  `LName` VARCHAR(50) NULL,
  `FName` VARCHAR(50) NULL,
  `MName` VARCHAR(50) NULL,
  `BirthDay` DATE NULL,
  PRIMARY KEY (`Prepod_ID`),
  INDEX `fk_Dolznost_ID_idx` (`fk_Dolznost_ID` ASC) VISIBLE,
  INDEX `fk_AcDegree_ID_idx` (`fk_AcDegree_ID` ASC) VISIBLE,
  INDEX `fk_Kafedra_ID_idx` (`fk_Kafedra_ID` ASC) VISIBLE,
  CONSTRAINT `fk_Dolznost_ID`
    FOREIGN KEY (`fk_Dolznost_ID`)
    REFERENCES `studdb`.`Dolznost` (`Dolznost_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_AcDegree_ID`
    FOREIGN KEY (`fk_AcDegree_ID`)
    REFERENCES `studdb`.`AcDegree` (`AcDegree_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Kafedra_ID`
    FOREIGN KEY (`fk_Kafedra_ID`)
    REFERENCES `studdb`.`Kafedra` (`Kafedra_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB
```



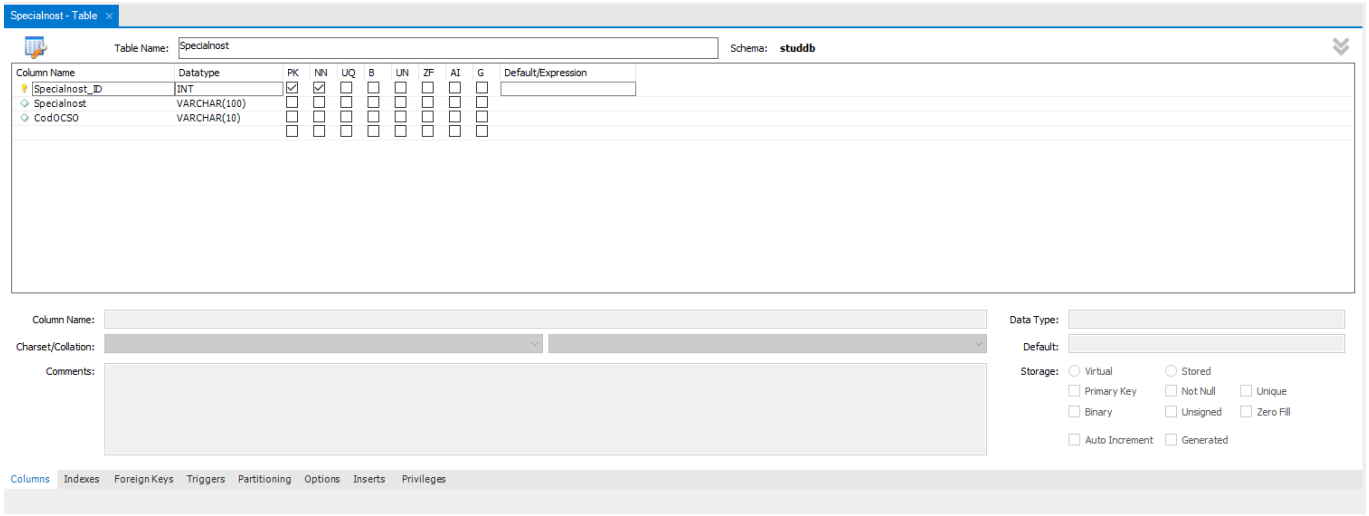
2.12 Semestr

```
CREATE TABLE IF NOT EXISTS `studdb`.`Semestr` (
  `Semestr_ID` INT NOT NULL,
  `fk_kurs_ID` INT NULL,
  `Semestr` INT NULL,
  PRIMARY KEY (`Semestr_ID`),
  INDEX `fk_kurs_ID_idx` (`fk_kurs_ID` ASC) VISIBLE,
  CONSTRAINT `fk_kurs_ID`
    FOREIGN KEY (`fk_kurs_ID`)
    REFERENCES `studdb`.`kurs` (`kurs_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB
```



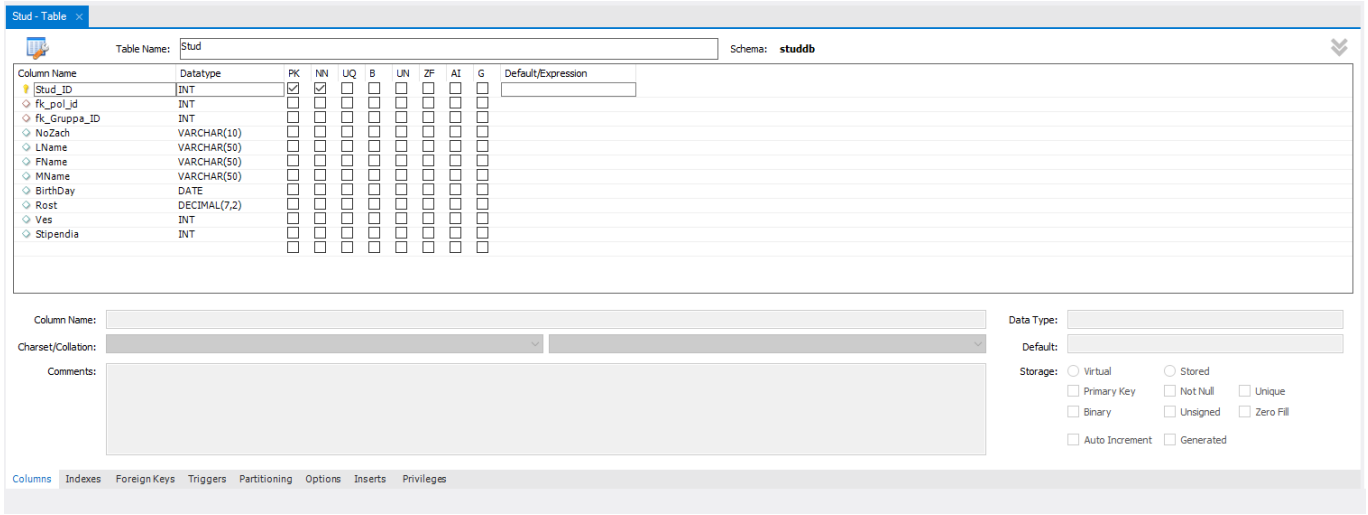
2.13 Specialnost

```
CREATE TABLE IF NOT EXISTS `studdb`.`Specialnost` (
  `Specialnost_ID` INT NOT NULL,
  `Specialnost` VARCHAR(100) NULL,
  `CodOCSO` VARCHAR(10) NULL,
  PRIMARY KEY (`Specialnost_ID`))
ENGINE = InnoDB
```



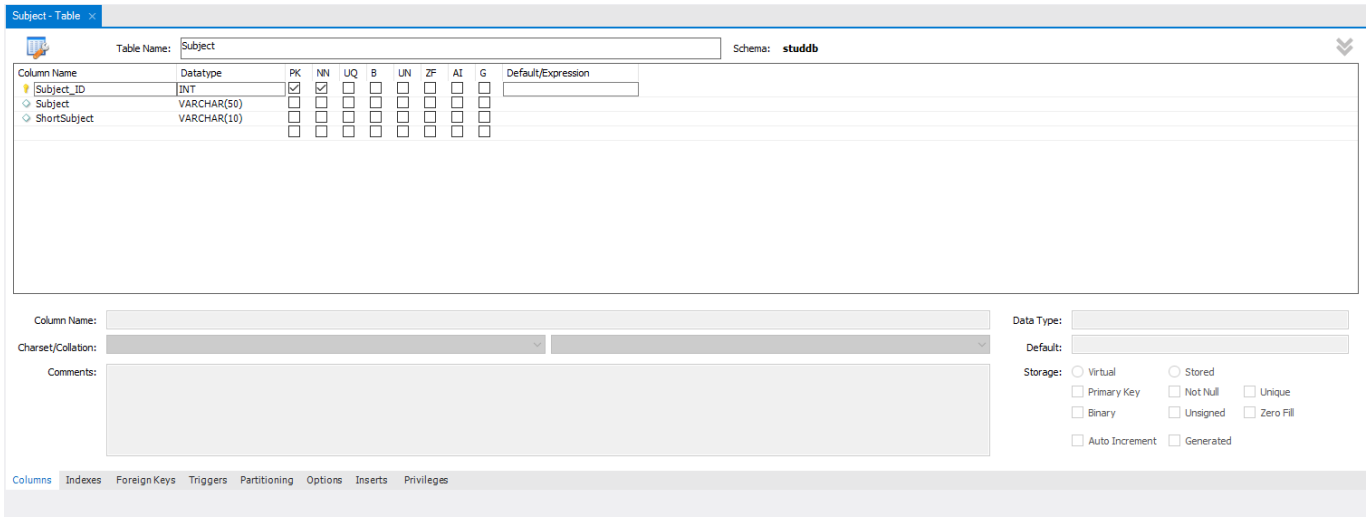
2.14 Stud

```
CREATE TABLE IF NOT EXISTS `studdb`.`Stud` (
  `Stud_ID` INT NOT NULL,
  `fk_pol_id` INT NULL,
  `fk_Gruppa_ID` INT NULL,
  `NoZach` VARCHAR(10) NULL,
  `LName` VARCHAR(50) NULL,
  `FName` VARCHAR(50) NULL,
  `MName` VARCHAR(50) NULL,
  `BirthDay` DATE NULL,
  `Rost` DECIMAL(7,2) NULL,
  `Ves` INT NULL,
  `Stipendia` INT NULL,
  PRIMARY KEY (`Stud_ID`),
  INDEX `fk_pol_id_idx` (`fk_pol_id` ASC) VISIBLE,
  INDEX `fk_Gruppa_ID_idx` (`fk_Gruppa_ID` ASC) VISIBLE,
  CONSTRAINT `fk_pol_id`
    FOREIGN KEY (`fk_pol_id`)
    REFERENCES `studdb`.`pol` (`pol_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Gruppa_ID`
    FOREIGN KEY (`fk_Gruppa_ID`)
    REFERENCES `studdb`.`Gruppa` (`Gruppa_ID`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB
```



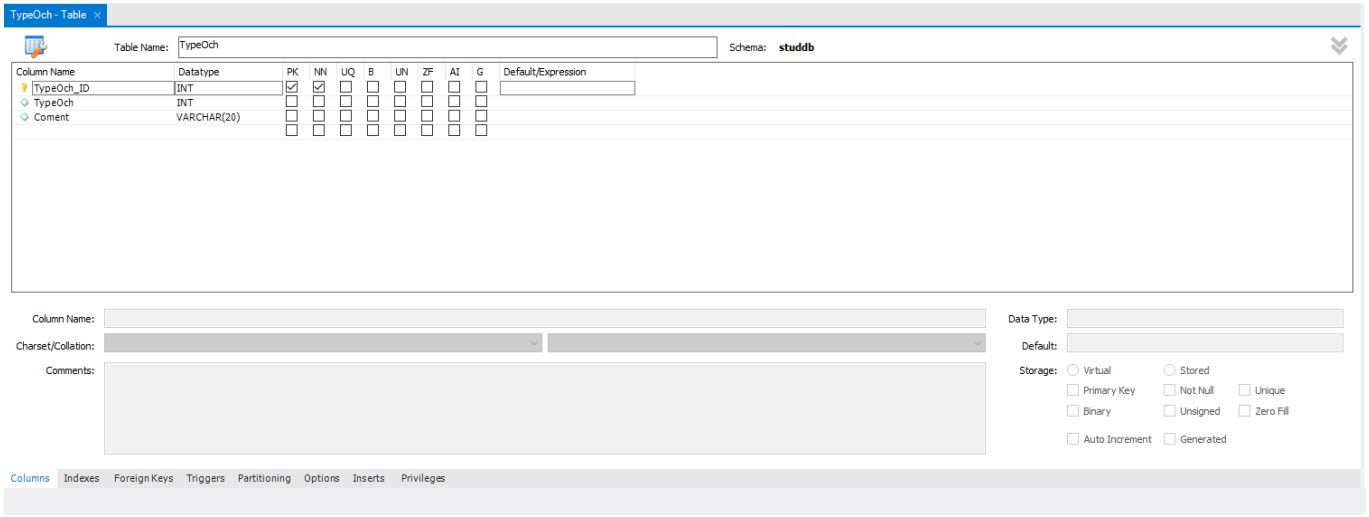
2.15 Subject

```
CREATE TABLE IF NOT EXISTS `studdb`.`Subject` (
  `Subject_ID` INT NOT NULL,
  `Subject` VARCHAR(50) NULL,
  `ShortSubject` VARCHAR(10) NULL,
  PRIMARY KEY (`Subject_ID`))
ENGINE = InnoDB
```



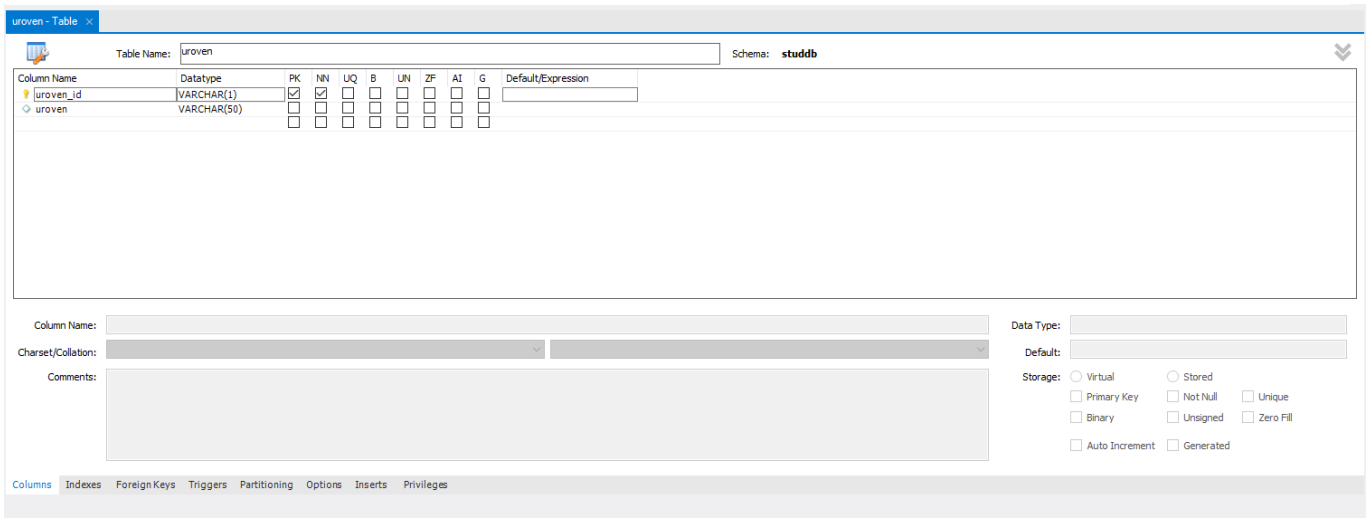
2.16 TypeOch

```
CREATE TABLE IF NOT EXISTS `studdb`.`TypeOch` (
  `TypeOch_ID` INT NOT NULL,
  `TypeOch` INT NULL,
  `Coment` VARCHAR(20) NULL,
  PRIMARY KEY (`TypeOch_ID`))
ENGINE = InnoDB
```

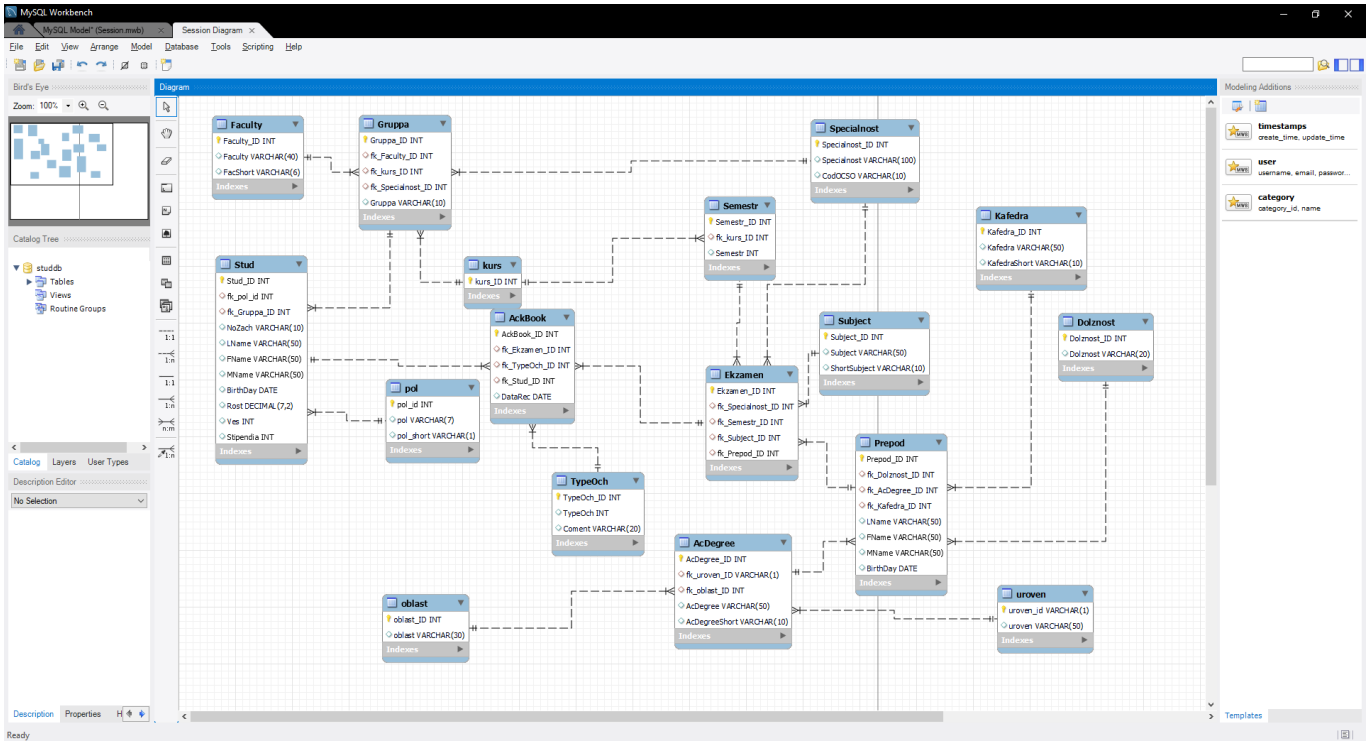


2.17 uroven

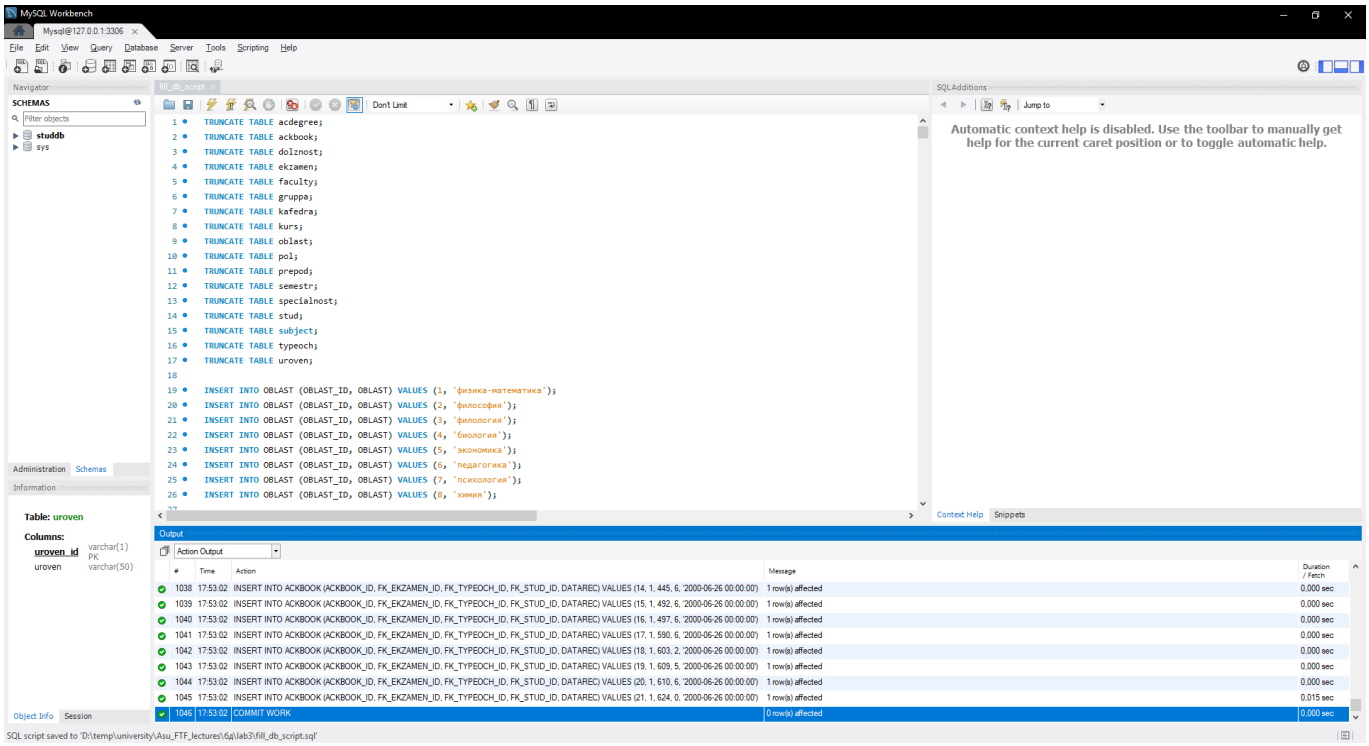
```
CREATE TABLE IF NOT EXISTS `studdb`.`uroven` (
  `uroven_id` VARCHAR(1) NOT NULL,
  `uroven` VARCHAR(50) NULL,
  PRIMARY KEY (`uroven_id`))
ENGINE = InnoDB
```



3 Информация о создании ER-диаграммы



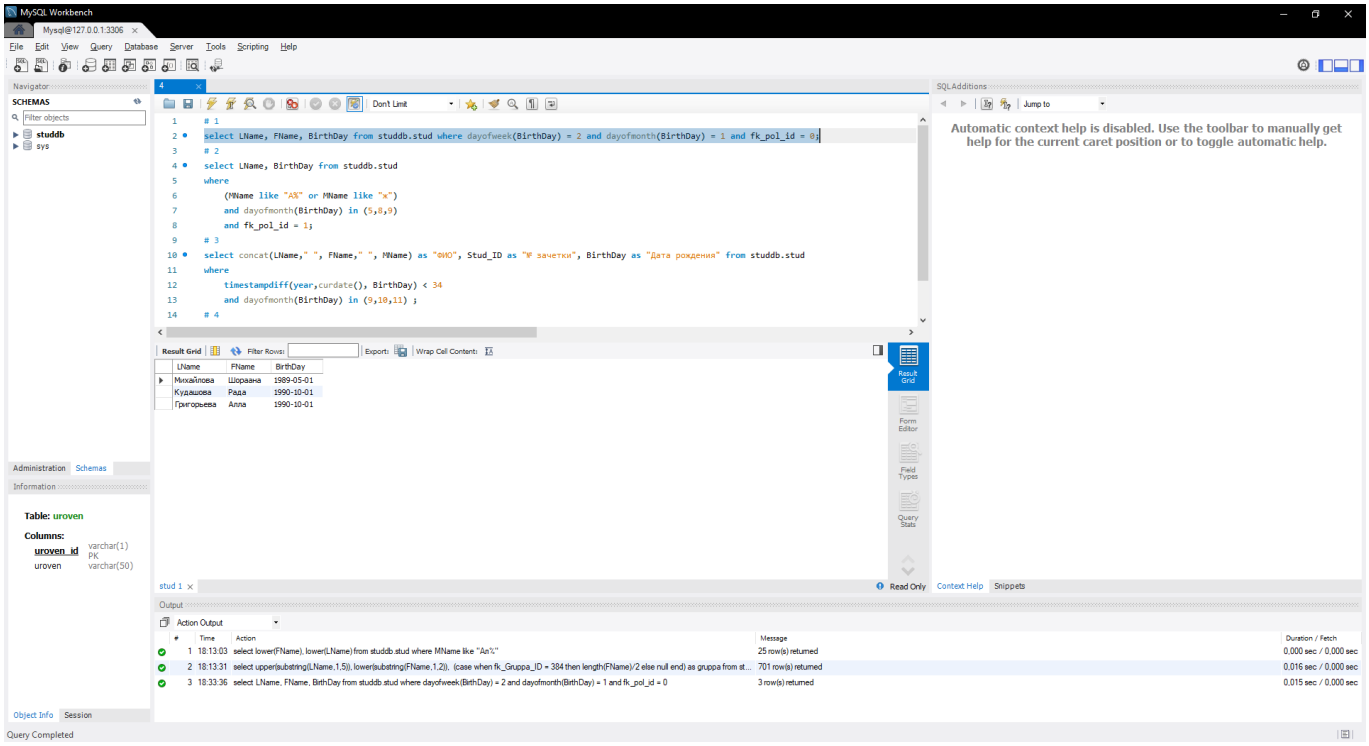
4 Информация о заполнении таблиц данными



5 Информация о результаты выполнения запросов

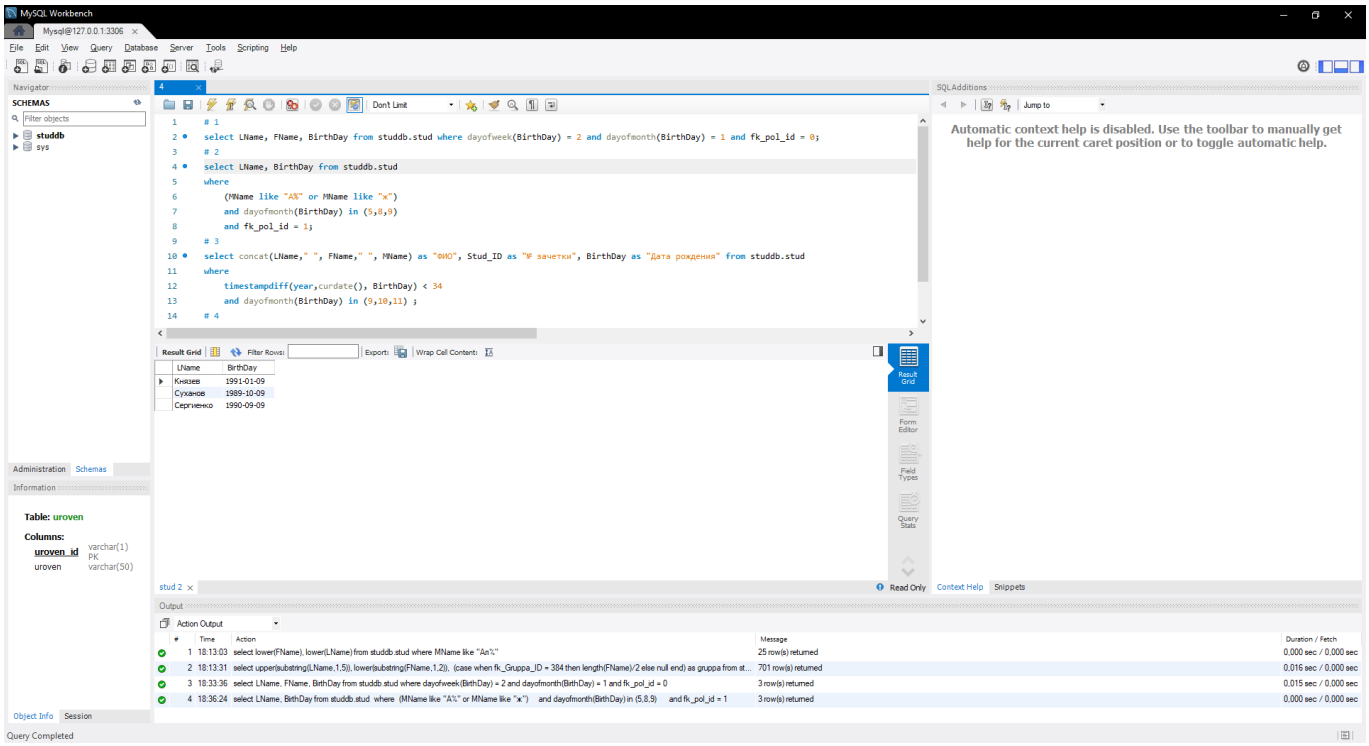
5.1 Вывести фамилии, имена и даты рождения всех девушек, родившихся в понедельник в январе.

```
select LName, FName, BirthDay from studdb.stud where dayofweek(BirthDay) = 2 and
    dayofmonth(BirthDay) = 1 and fk_pol_id = 0;
```



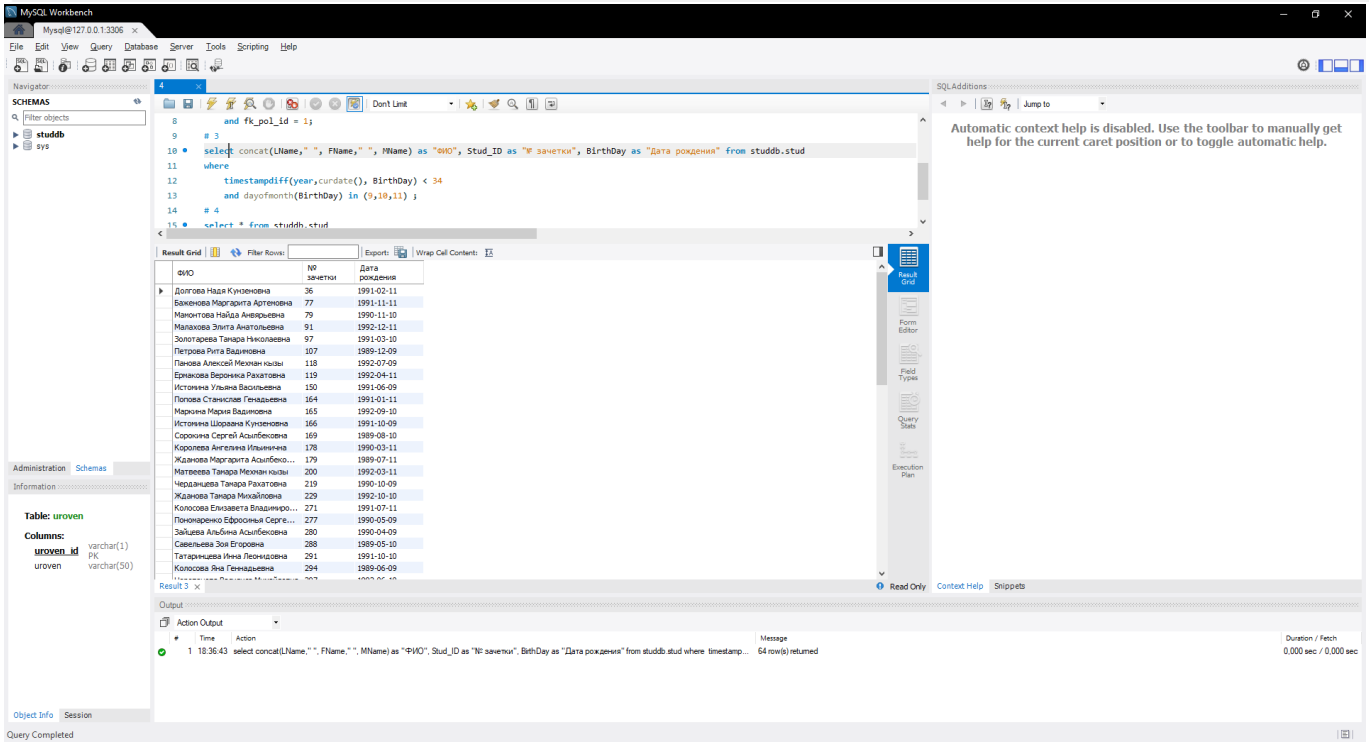
5.2 Вывести фамилии и даты рождения всех юношей, родившихся в мае, сентябре и августе, у которых либо фамилии начинаются на А, либо содержат букву ж.

```
# 2
select LName, BirthDay from studdb.stud
where
    (MName like "А%" or MName like "ж")
    and dayofmonth(BirthDay) in (5,8,9)
    and fk_pol_id = 1;
```



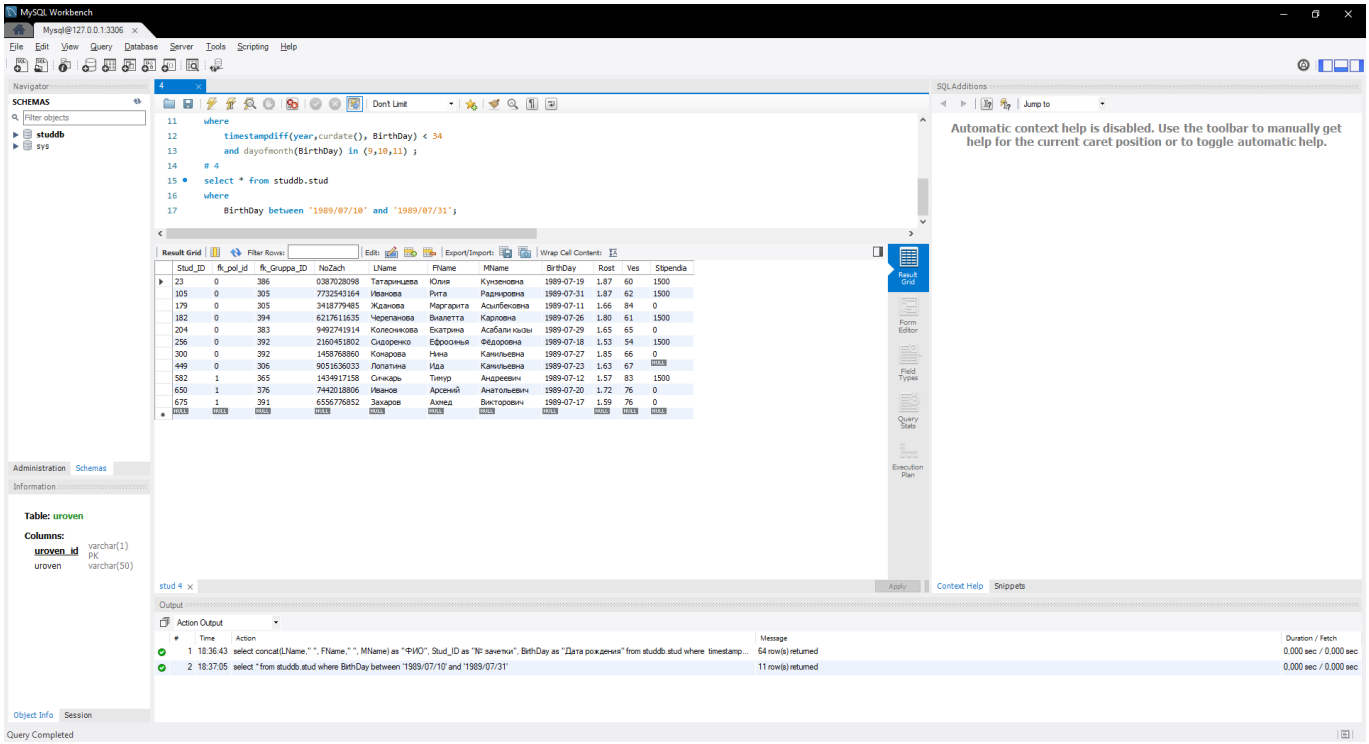
5.3 Вывести ФИО, номер зачетки и дату рождения студентов (в формате «ФИО, № зачетки, дата рождения». Пример: Иванов Иван Иванович, № 3256897855, 21.10.1991), которые родились осенью и младше 34 лет.

```
# 3
select concat(LName," ", FName," ", MName) as "ФИО", Stud_ID as "№ зачетки", BirthDay as "Дата рождения"
where
    timestampdiff(year,curdate(), BirthDay) < 34
    and dayofmonth(BirthDay) in (9,10,11) ;
```



5.4 Вывести все сведения о студентах, родившихся с 10 по 31 июля 1989 года

```
select * from studdb.stud
where
   BirthDay between '1989/07/10' and '1989/07/31';
```


MySQL Workbench
Mysql@127.0.0.1:3306
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
studdb
sys
4
Don't Limit
11 where
12 timestampdiff(year,curdate(), BirthDay) < 34
13 and dayofmonth(BirthDay) in (9,10,11) ;
14 # 4
15 select * from studdb.stud
16 where
17 BirthDay between '1989/07/10' and '1989/07/31';
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
Stud_ID fk_pol_id fk_Gruppa_ID NoZach LName FName MName BirthDay Rost Ves Stipendia
23 0 386 0387028098 Татаринцева Юлия Кузьминична 1989-07-19 1.87 60 1500
105 0 305 7732543164 Иванова Рита Радмировна 1989-07-31 1.87 62 1500
179 0 305 3418779485 Жданова Маргарита Асылбековна 1989-07-11 1.66 84 0
182 0 394 6217611635 Черепанова Виалетта Карловна 1989-07-26 1.80 61 1500
204 0 383 9492741914 Колесникова Екатрина Асабали кызы 1989-07-29 1.65 65 0
256 0 392 2160451802 Сидоренко Ефросинья Фёдоровна 1989-07-18 1.53 54 1500
300 0 392 1458768860 Комарова Нина Камильевна 1989-07-27 1.85 66 0
449 0 306 9051636033 Лопатина Ида Камильевна 1989-07-23 1.63 67 NULL
582 1 365 1434917158 Синкарь Тимур Андреевич 1989-07-12 1.57 83 1500
650 1 376 7442018806 Иванов Арсений Анатольевич 1989-07-20 1.72 76 0
675 1 391 6556776852 Захаров Ахмед Викторович 1989-07-17 1.59 76 0
Result Grid
Form Editor
Field Types
Query Stats
Execution Plan
stud 4
Apply
SQL Additions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help
Snippets
Administration
Schemas
Information
Table: uroven
Columns:
uroven_id varchar(1) PK
uroven varchar(50)
Object Info
Session
Output
Action Output
Time Action Message Duration / Fetch
1 18:36:43 select concat(LName," ", FName," ", MName) as "ФИО", Stud_ID as "№ зачетки", BirthDay as "Дата рождения" from studdb.stud where timestamp... 64 row(s) returned 0.000 sec / 0.000 sec
2 18:37:05 select * from studdb.stud where BirthDay between '1989/07/10' and '1989/07/31' 11 row(s) returned 0.000 sec / 0.000 sec
Query Completed

6 Вывод о проделанной работе

В ходе данной работы были изучены основы работы с типом данных Дата,Время, изучены базовые условия запросов.