**Санкт-Петербургский национальный исследовательский университет**

**информационных технологий, механики и оптики**

**Кафедра вычислительной техники**

# Курсовая работа

по дисциплине «Базы данных»

Часть 4

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**Ход работы:**

CREATE SCHEMA IF NOT EXISTS `mydb` DEFAULT CHARACTER SET utf8 ;

USE `mydb` ;

-- -----------------------------------------------------

-- Table `mydb`.`Subway\_Station`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Subway\_Station` (

`Station\_ID` INT NOT NULL,

`Name` VARCHAR(45) NOT NULL,

`Number\_of\_Entrances` INT NOT NULL,

`Number\_of\_Wayout` INT NOT NULL,

`Open\_Time` TIME NOT NULL,

`Close\_Time` TIME NOT NULL,

`Count\_Train` INT NOT NULL,

PRIMARY KEY (`Station\_ID`));

-- -----------------------------------------------------

-- Table `mydb`.`Train`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Train` (

`Train\_ID` INT NOT NULL,

`Model` VARCHAR(255) NOT NULL,

`Total\_Seat` INT NOT NULL,

`Subway\_Station\_Station\_ID` INT NOT NULL,

PRIMARY KEY (`Train\_ID`, `Subway\_Station\_Station\_ID`),

INDEX `fk\_Train\_Subway\_Station\_idx` (`Subway\_Station\_Station\_ID` ASC),

CONSTRAINT `fk\_Train\_Subway\_Station`

FOREIGN KEY (`Subway\_Station\_Station\_ID`)

REFERENCES `mydb`.`Subway\_Station` (`Station\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION);

-- -----------------------------------------------------

-- Table `mydb`.`Trip`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Trip` (

`Trip\_ID` INT NULL,

`Arriving\_Time` DATETIME NOT NULL,

`Departing\_Time` DATETIME NOT NULL,

`Distance` INT NOT NULL,

`Departing\_From` VARCHAR(45) NOT NULL,

`Arrive\_To` VARCHAR(45) NOT NULL,

`Total\_Seat` INT NOT NULL,

`Number\_of\_Station` INT NOT NULL,

`Train\_Train\_ID` INT NOT NULL,

`Train\_Subway\_Station\_Station\_ID` INT NOT NULL,

PRIMARY KEY (`Trip\_ID`, `Train\_Train\_ID`, `Train\_Subway\_Station\_Station\_ID`),

INDEX `fk\_Trip\_Train1\_idx` (`Train\_Train\_ID` ASC, `Train\_Subway\_Station\_Station\_ID` ASC),

CONSTRAINT `fk\_Trip\_Train1`

FOREIGN KEY (`Train\_Train\_ID` , `Train\_Subway\_Station\_Station\_ID`)

REFERENCES `mydb`.`Train` (`Train\_ID` , `Subway\_Station\_Station\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION);

-- -----------------------------------------------------

-- Table `mydb`.`Passenger`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Passenger` (

`Passenger\_ID` INT NOT NULL,

`Fname` VARCHAR(45) NOT NULL,

`Mname` VARCHAR(45) NOT NULL,

`Lname` VARCHAR(45) NOT NULL,

`Age` BIT NOT NULL,

`Contact` VARCHAR(45) NOT NULL,

`Genger` VARCHAR(1) NOT NULL,

PRIMARY KEY (`Passenger\_ID`));

-- -----------------------------------------------------

-- Table `mydb`.`Position`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Position` (

`Position\_ID` INT NOT NULL,

`Name` VARCHAR(255) NOT NULL,

`Requirement` VARCHAR(225) NULL,

`Salary` BIGINT NOT NULL,

`Number\_of\_Employees` INT NOT NULL,

PRIMARY KEY (`Position\_ID`));

-- -----------------------------------------------------

-- Table `mydb`.`Department`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Department` (

`Department\_Location` VARCHAR(225) NOT NULL,

`Station\_ID` INT NOT NULL,

`Name` VARCHAR(255) NOT NULL,

`Number\_of\_Employees` INT NOT NULL,

PRIMARY KEY (`Department\_Location`, `Station\_ID`),

INDEX `fk\_Department\_Subway\_Station1\_idx` (`Station\_ID` ASC),

CONSTRAINT `fk\_Department\_Subway\_Station1`

FOREIGN KEY (`Station\_ID`)

REFERENCES `mydb`.`Subway\_Station` (`Station\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION);

-- -----------------------------------------------------

-- Table `mydb`.`Manager`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Manager` (

`Manager\_ID` INT NOT NULL,

`Name` VARCHAR(255) NOT NULL,

`Position` VARCHAR(225) NULL,

PRIMARY KEY (`Manager\_ID`));

-- -----------------------------------------------------

-- Table `mydb`.`Employees`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Employees` (

`Employee\_ID` INT NOT NULL,

`Fname` VARCHAR(45) NOT NULL,

`Mname` VARCHAR(45) NOT NULL,

`Lname` VARCHAR(45) NOT NULL,

`Age` BIT NOT NULL,

`Gender` VARCHAR(1) NOT NULL,

`Position` VARCHAR(225) NOT NULL,

`Position\_ID` INT NOT NULL,

`Department\_Location` VARCHAR(225) NOT NULL,

`Manager\_ID` INT NOT NULL,

PRIMARY KEY (`Employee\_ID`, `Position\_ID`, `Department\_Location`, `Manager\_ID`),

INDEX `fk\_Employees\_Position1\_idx` (`Position\_ID` ASC),

INDEX `fk\_Employees\_Department1\_idx` (`Department\_Location` ASC),

INDEX `fk\_Employees\_Manager1\_idx` (`Manager\_ID` ASC),

CONSTRAINT `fk\_Employees\_Position1`

FOREIGN KEY (`Position\_ID`)

REFERENCES `mydb`.`Position` (`Position\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Employees\_Department1`

FOREIGN KEY (`Department\_Location`)

REFERENCES `mydb`.`Department` (`Department\_Location`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Employees\_Manager1`

FOREIGN KEY (`Manager\_ID`)

REFERENCES `mydb`.`Manager` (`Manager\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION);

-- -----------------------------------------------------

-- Table `mydb`.`Ticket`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Ticket` (

`Ticket\_id` INT NOT NULL,

`Type\_of\_Ticket` VARCHAR(255) NOT NULL,

`Price` INT NULL,

`Number\_of\_Trip` INT NULL,

`Time\_limit\_day` INT NULL,

PRIMARY KEY (`Ticket\_id`));

-- -----------------------------------------------------

-- Table `mydb`.`Payment`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Payment` (

`Payment\_ID` INT NOT NULL,

`Passenger\_ID` INT NOT NULL,

`Time` DATETIME NULL,

`Money` INT NULL,

`Type\_of\_Payment` VARCHAR(225) NULL,

`Ticket\_id` INT NOT NULL,

PRIMARY KEY (`Payment\_ID`, `Passenger\_ID`, `Ticket\_id`),

INDEX `fk\_Payment\_Passenger1\_idx` (`Passenger\_ID` ASC),

INDEX `fk\_Payment\_Ticket1\_idx` (`Ticket\_id` ASC),

CONSTRAINT `fk\_Payment\_Passenger1`

FOREIGN KEY (`Passenger\_ID`)

REFERENCES `mydb`.`Passenger` (`Passenger\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Payment\_Ticket1`

FOREIGN KEY (`Ticket\_id`)

REFERENCES `mydb`.`Ticket` (`Ticket\_id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION);

-- -----------------------------------------------------

-- Table `mydb`.`Trip\_has\_Passenger`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`Trip\_has\_Passenger` (

`Trip\_ID` INT NOT NULL,

`Train\_ID` INT NOT NULL,

`Station\_ID` INT NOT NULL,

`Passenger\_ID` INT NOT NULL,

PRIMARY KEY (`Trip\_ID`, `Train\_ID`, `Station\_ID`, `Passenger\_ID`),

INDEX `fk\_Trip\_has\_Passenger\_Passenger1\_idx` (`Passenger\_ID` ASC),

INDEX `fk\_Trip\_has\_Passenger\_Trip1\_idx` (`Trip\_ID` ASC, `Train\_ID` ASC, `Station\_ID` ASC),

CONSTRAINT `fk\_Trip\_has\_Passenger\_Trip1`

FOREIGN KEY (`Trip\_ID` , `Train\_ID` , `Station\_ID`)

REFERENCES `mydb`.`Trip` (`Trip\_ID` , `Train\_Train\_ID` , `Train\_Subway\_Station\_Station\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Trip\_has\_Passenger\_Passenger1`

FOREIGN KEY (`Passenger\_ID`)

REFERENCES `mydb`.`Passenger` (`Passenger\_ID`)

ON DELETE NO ACTION

ON UPDATE NO ACTION);