Министерство образования Республики Беларусь

Учреждение образования

БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ

Факультет компьютерных систем и сетей

Кафедра программного обеспечения информационных технологий

Дисциплина: Базы данных

ОТЧЕТ

по лабораторной работе №3

Выполнил

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# Есть ли отношения с возможной, но ненужной дальнейшей нормализацией? Составьте список.

В данных моделях отсутствуют ненужные дальнейшии нормализации.

# Можно ли добиться некоторого повышения производительности за счёт денормализации схемы?

В данной схеме денормализация не повысит ппроизводительность.

# Можно ли добиться некоторого повышения производительности, добавив в схему кэширующие отношения?

Да, можно добиться некоторого повышения производительности за счёт добавления в схему кэширующих отношений.

# СГЕНЕРИРОВАННЫЙ SQL-КОД

-- MySQL Script generated by MySQL Workbench

-- Wed Mar 9 20:54:13 2022

-- Model: New Model Version: 1.0

-- MySQL Workbench Forward Engineering

SET @OLD\_UNIQUE\_CHECKS=@@UNIQUE\_CHECKS, UNIQUE\_CHECKS=0;

SET @OLD\_FOREIGN\_KEY\_CHECKS=@@FOREIGN\_KEY\_CHECKS, FOREIGN\_KEY\_CHECKS=0;

SET @OLD\_SQL\_MODE=@@SQL\_MODE, SQL\_MODE='ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_ZERO\_IN\_DATE,NO\_ZERO\_DATE,ERROR\_FOR\_DIVISION\_BY\_ZERO,NO\_ENGINE\_SUBSTITUTION';

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

-- Schema mydb

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

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

-- Schema mydb

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

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

USE `mydb` ;

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

-- Table `mydb`.`AccountStatus`

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

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

`idAccountStatus` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`AccountStatusTypeDescription` VARCHAR(15) NULL,

PRIMARY KEY (`idAccountStatus`),

UNIQUE INDEX `idAccountStatusType\_UNIQUE` (`idAccountStatus` ASC) VISIBLE)

ENGINE = InnoDB;

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

-- Table `mydb`.`AccountTypes`

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

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

`idAccountTypes` TINYINT(1) UNSIGNED NOT NULL,

`AccountTypesDescription` VARCHAR(15) NULL,

PRIMARY KEY (`idAccountTypes`),

UNIQUE INDEX `idAccountTypes\_UNIQUE` (`idAccountTypes` ASC) VISIBLE)

ENGINE = InnoDB;

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

-- Table `mydb`.`TransactionType`

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

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

`idTransactionType` TINYINT(1) UNSIGNED NOT NULL,

`TransactionTypeDescription` VARCHAR(15) NULL,

PRIMARY KEY (`idTransactionType`))

ENGINE = InnoDB;

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

-- Table `mydb`.`Address`

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

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

`idAddress` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`City` VARCHAR(255) NOT NULL,

`PostCode` VARCHAR(20) NOT NULL,

`Country` VARCHAR(50) NOT NULL,

`StateOrProvince` VARCHAR(50) NULL,

`OtherDetails` VARCHAR(255) NOT NULL,

PRIMARY KEY (`idAddress`))

ENGINE = InnoDB;

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

-- Table `mydb`.`Office`

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

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

`idOffice` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`idAddress` INT UNSIGNED NOT NULL,

`Amount` DECIMAL(25,2) NULL,

PRIMARY KEY (`idOffice`),

INDEX `fk\_Office\_Address1\_idx` (`idAddress` ASC) VISIBLE,

CONSTRAINT `fk\_Office\_Address1`

FOREIGN KEY (`idAddress`)

REFERENCES `mydb`.`Address` (`idAddress`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

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

-- Table `mydb`.`Customer`

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

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

`idCustomer` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`idOffice` INT UNSIGNED NOT NULL,

`idAddress` INT UNSIGNED NOT NULL,

PRIMARY KEY (`idCustomer`),

INDEX `fk\_Customer\_Office1\_idx` (`idOffice` ASC) VISIBLE,

INDEX `fk\_Customer\_Address1\_idx` (`idAddress` ASC) VISIBLE,

CONSTRAINT `fk\_Customer\_Office1`

FOREIGN KEY (`idOffice`)

REFERENCES `mydb`.`Office` (`idOffice`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Customer\_Address1`

FOREIGN KEY (`idAddress`)

REFERENCES `mydb`.`Address` (`idAddress`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

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

-- Table `mydb`.`Account`

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

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

`idAccount` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`idAccountStatus` TINYINT(1) UNSIGNED NOT NULL,

`idAccountTypes` TINYINT(1) UNSIGNED NOT NULL,

`idCustomer` INT UNSIGNED NOT NULL,

`AccountCreate` DATETIME NULL,

`Ac\_IBAN` VARCHAR(38) NOT NULL,

PRIMARY KEY (`idAccount`),

INDEX `fk\_Account\_AccountStatus1\_idx` (`idAccountStatus` ASC) VISIBLE,

INDEX `fk\_Account\_AccountTypes1\_idx` (`idAccountTypes` ASC) VISIBLE,

INDEX `fk\_Account\_Customer1\_idx` (`idCustomer` ASC) VISIBLE,

UNIQUE INDEX `Ac\_IBAN\_UNIQUE` (`Ac\_IBAN` ASC) VISIBLE,

CONSTRAINT `fk\_Account\_AccountStatus1`

FOREIGN KEY (`idAccountStatus`)

REFERENCES `mydb`.`AccountStatus` (`idAccountStatus`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Account\_AccountTypes1`

FOREIGN KEY (`idAccountTypes`)

REFERENCES `mydb`.`AccountTypes` (`idAccountTypes`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Account\_Customer1`

FOREIGN KEY (`idCustomer`)

REFERENCES `mydb`.`Customer` (`idCustomer`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

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

-- Table `mydb`.`Transaction`

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

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

`idTransaction` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`Ammount` DECIMAL(20,2) NOT NULL,

`idTransactionType` TINYINT(1) UNSIGNED NOT NULL,

`SourceAccount` INT UNSIGNED NULL,

`TransactionTime` DATETIME NOT NULL,

`Tr\_D\_Account` INT UNSIGNED NULL,

`Tr\_S\_IBAN` VARCHAR(38) NOT NULL,

`Tr\_D\_IBAN` VARCHAR(38) NOT NULL,

PRIMARY KEY (`idTransaction`),

INDEX `fk\_Transaction\_TransactionType1\_idx` (`idTransactionType` ASC) VISIBLE,

INDEX `fk\_Transaction\_Account1\_idx` (`SourceAccount` ASC) VISIBLE,

INDEX `fk\_Transaction\_Account2\_idx` (`Tr\_D\_Account` ASC) VISIBLE,

CONSTRAINT `fk\_Transaction\_TransactionType1`

FOREIGN KEY (`idTransactionType`)

REFERENCES `mydb`.`TransactionType` (`idTransactionType`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Transaction\_Account1`

FOREIGN KEY (`SourceAccount`)

REFERENCES `mydb`.`Account` (`idAccount`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_Transaction\_Account2`

FOREIGN KEY (`Tr\_D\_Account`)

REFERENCES `mydb`.`Account` (`idAccount`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

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

-- Table `mydb`.`TransactionArchive`

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

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

`idTransactionArchive` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`TransactionTime` DATETIME NOT NULL,

`idTransactionType` TINYINT(1) UNSIGNED NOT NULL,

`DestinationAccount` INT UNSIGNED NULL,

`SourceAccount` INT UNSIGNED NULL,

`Tr\_A\_Ammount` DECIMAL(20,2) UNSIGNED NOT NULL,

`Tr\_A\_S\_IBAN` VARCHAR(38) NOT NULL,

`Tr\_A\_D\_IBAN` VARCHAR(38) NOT NULL,

PRIMARY KEY (`idTransactionArchive`),

INDEX `fk\_TransactionArchive\_TransactionType1\_idx` (`idTransactionType` ASC) VISIBLE,

INDEX `fk\_TransactionArchive\_Account1\_idx` (`DestinationAccount` ASC) VISIBLE,

INDEX `fk\_TransactionArchive\_Account2\_idx` (`SourceAccount` ASC) VISIBLE,

CONSTRAINT `fk\_TransactionArchive\_TransactionType1`

FOREIGN KEY (`idTransactionType`)

REFERENCES `mydb`.`TransactionType` (`idTransactionType`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_TransactionArchive\_Account1`

FOREIGN KEY (`DestinationAccount`)

REFERENCES `mydb`.`Account` (`idAccount`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk\_TransactionArchive\_Account2`

FOREIGN KEY (`SourceAccount`)

REFERENCES `mydb`.`Account` (`idAccount`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

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

-- Table `mydb`.`AccountOwner`

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

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

`idAccountOwner` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`FirstName` VARCHAR(50) NOT NULL,

`SecondName` VARCHAR(50) NOT NULL,

`PhoneNumber` VARCHAR(20) NOT NULL,

`Email` VARCHAR(256) NULL,

`idCustomer` INT UNSIGNED NOT NULL,

`PasportData` VARCHAR(60) NOT NULL,

PRIMARY KEY (`idAccountOwner`),

INDEX `fk\_AccountOwner\_Customer1\_idx` (`idCustomer` ASC) VISIBLE,

CONSTRAINT `fk\_AccountOwner\_Customer1`

FOREIGN KEY (`idCustomer`)

REFERENCES `mydb`.`Customer` (`idCustomer`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

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

-- Table `mydb`.`SitePages`

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

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

`idSitePages` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`SitePagesName` VARCHAR(100) NOT NULL,

`SitePagesParent` INT UNSIGNED NULL,

PRIMARY KEY (`idSitePages`),

INDEX `fk\_SitePages\_SitePages1\_idx` (`SitePagesParent` ASC) VISIBLE,

CONSTRAINT `fk\_SitePages\_SitePages1`

FOREIGN KEY (`SitePagesParent`)

REFERENCES `mydb`.`SitePages` (`idSitePages`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

SET SQL\_MODE=@OLD\_SQL\_MODE;

SET FOREIGN\_KEY\_CHECKS=@OLD\_FOREIGN\_KEY\_CHECKS;

SET UNIQUE\_CHECKS=@OLD\_UNIQUE\_CHECKS;