Министерство образования Республики Беларусь Учреждение образования «Белорусский государственный университет информатики и радиоэлектроники»

ОТЧЕТ

Лабораторная работа №1

по теме: «Интернет магазин продажи компьютерной техники различных производителей»

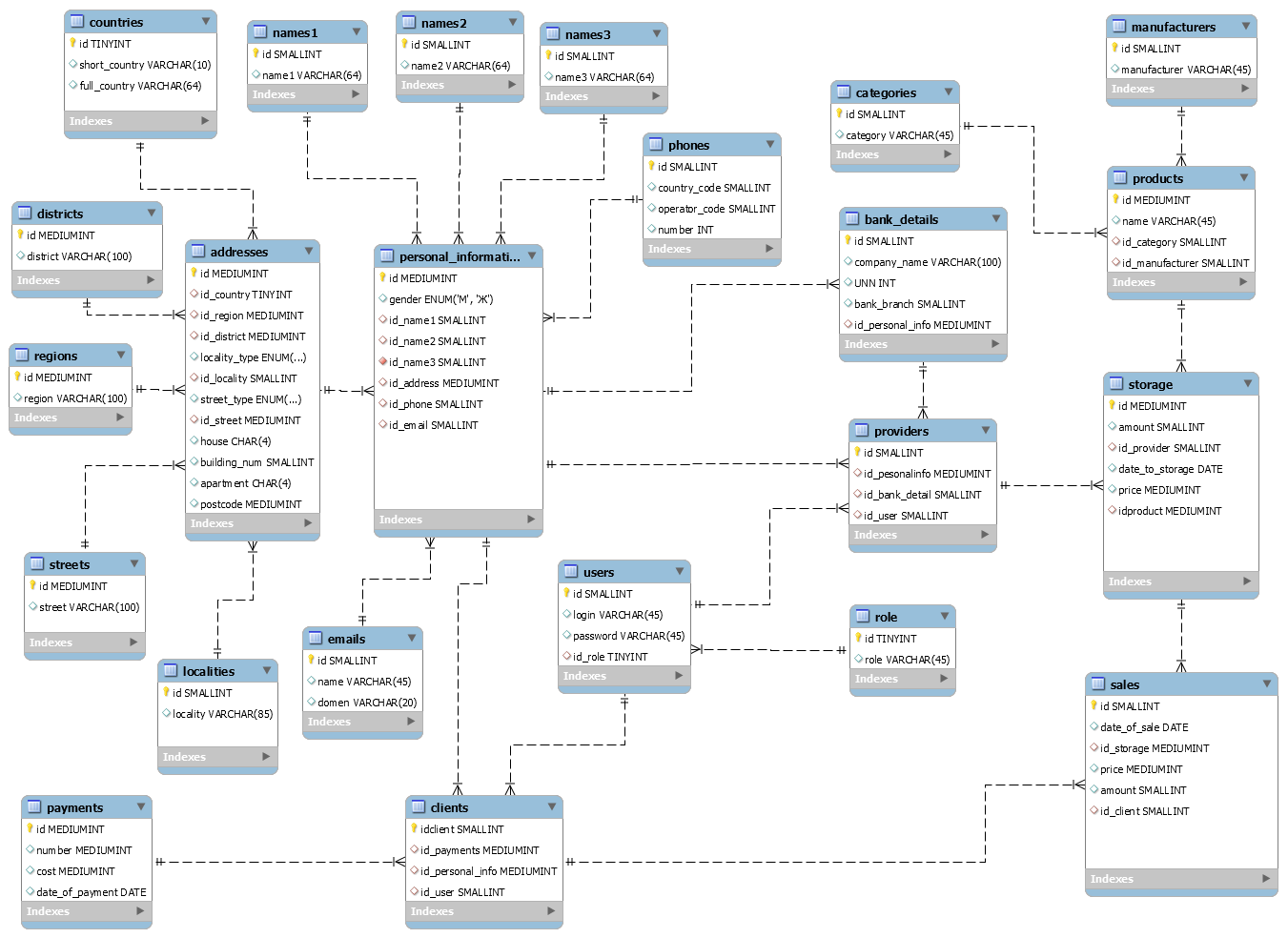
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Проверил: Алексеев И.Г.

Минск БГУИР 2020

Технические задания на систему

1. Авторизация пользователей по ролям (поставщик, заказчик, администрация)
2. Блокировка пользователя и блокировка на определенный период времени и автоматическое снятие блокировки по истечению времени блокировки
3. Создание и изменение ролей (администрация)
4. Добавление и редактирование информации о поставщиках (администрация)
5. Добавление и редактирование информации о категориях (поставщик, администрация)
6. Добавление и редактирование информации о товарах на складе (поставщик, администрация)
7. Изменение персональных данных (заказчик, поставщик, администрация)
8. Добавление и редактирование банковских реквизитов (заказчик, поставщик, администрация)
9. Просмотр пользователей и историй их заказов (поставщик, администрация)
10. Просмотр истории оформления заказов у поставщика (поставщик, администратор)
11. Просмотр истории оформления всех заказов за определенный период (администрация)
12. Просмотр товаров на складе у определённого поставщика (поставщик, администрация)
13. Поиск по наименованию товара (заказчик, поставщик, администрация)
14. Поиск товаров по категории (заказчик, администрация)
15. Поиск товаров по производителю (заказчик, администрация)
16. Сортировка по стоимости товаров (заказчик, администрация)
17. Сортировка и просмотр товаров по кол-ву покупок (заказчик, поставщик, администрация)
18. Сортировка и просмотр поставщиков по кол-ву продаж (поставщик, администрация)

Модель базы данных

SQL-запросы по созданию схемы данных в СУБД

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';

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

CREATE TABLE IF NOT EXISTS `db`.`personal\_informations` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO\_INCREMENT,

`gender` ENUM('М', 'Ж') NULL DEFAULT NULL,

`id\_name1` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`id\_name2` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`id\_name3` SMALLINT(5) UNSIGNED NOT NULL,

`id\_address` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`id\_phone` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`id\_email` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `toname1\_idx` (`id\_name1` ASC),

INDEX `toname2\_idx` (`id\_name2` ASC),

INDEX `tonam3\_idx` (`id\_name3` ASC),

INDEX `toaddress\_idx` (`id\_address` ASC),

INDEX `tophone\_idx` (`id\_phone` ASC),

INDEX `toemail\_idx` (`id\_email` ASC),

CONSTRAINT `toname1`

FOREIGN KEY (`id\_name1`)

REFERENCES `db`.`names1` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `toname2`

FOREIGN KEY (`id\_name2`)

REFERENCES `db`.`names2` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `toname3`

FOREIGN KEY (`id\_name3`)

REFERENCES `db`.`names3` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `toaddress`

FOREIGN KEY (`id\_address`)

REFERENCES `db`.`addresses` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `tophone`

FOREIGN KEY (`id\_phone`)

REFERENCES `db`.`phones` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `toemail`

FOREIGN KEY (`id\_email`)

REFERENCES `db`.`emails` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`names1` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`name1` VARCHAR(64) NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`names2` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`name2` VARCHAR(64) NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`names3` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`name3` VARCHAR(64) NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`addresses` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO\_INCREMENT,

`id\_country` TINYINT(3) UNSIGNED NULL DEFAULT NULL,

`id\_region` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`id\_district` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`locality\_type` ENUM('город', 'посёлок', 'городского типа', 'село') NULL DEFAULT NULL,

`id\_locality` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`street\_type` ENUM('Улица', 'Авеню', 'Бульвар', 'Магистраль', 'Проспект') NULL DEFAULT NULL,

`id\_street` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`house` CHAR(4) NULL DEFAULT NULL,

`building\_num` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`apartment` CHAR(4) NULL DEFAULT NULL,

`postcode` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `tostreet\_idx` (`id\_street` ASC),

INDEX `toregion\_idx` (`id\_region` ASC),

INDEX `tolocality\_idx` (`id\_locality` ASC),

INDEX `todisctict\_idx` (`id\_district` ASC),

INDEX `tocountry\_idx` (`id\_country` ASC),

CONSTRAINT `tolocality`

FOREIGN KEY (`id\_locality`)

REFERENCES `db`.`localities` (`id`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `toregion`

FOREIGN KEY (`id\_region`)

REFERENCES `db`.`regions` (`id`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `todisctict`

FOREIGN KEY (`id\_district`)

REFERENCES `db`.`districts` (`id`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `tostreet`

FOREIGN KEY (`id\_street`)

REFERENCES `db`.`streets` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `tocountry`

FOREIGN KEY (`id\_country`)

REFERENCES `db`.`countries` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`localities` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`locality` VARCHAR(85) NULL DEFAULT NULL,

PRIMARY KEY (`id`),

UNIQUE INDEX `locality\_UNIQUE` (`locality` ASC))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`streets` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO\_INCREMENT,

`street` VARCHAR(100) NULL DEFAULT NULL,

PRIMARY KEY (`id`),

UNIQUE INDEX `street\_UNIQUE` (`street` ASC))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`regions` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO\_INCREMENT,

`region` VARCHAR(100) NULL DEFAULT NULL,

PRIMARY KEY (`id`),

UNIQUE INDEX `region\_UNIQUE` (`region` ASC))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`districts` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO\_INCREMENT,

`district` VARCHAR(100) NULL DEFAULT NULL,

PRIMARY KEY (`id`),

UNIQUE INDEX `district\_UNIQUE` (`district` ASC))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`phones` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`country\_code` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`operator\_code` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`number` INT(10) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`emails` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL DEFAULT NULL,

`domen` VARCHAR(20) NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`sales` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`date\_of\_sale` DATE NULL DEFAULT NULL,

`id\_storage` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`price` MEDIUMINT(9) NULL DEFAULT NULL,

`amount` SMALLINT(6) NULL DEFAULT NULL,

`id\_client` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `tostorage\_idx` (`id\_storage` ASC),

INDEX `from\_client\_to\_sale\_idx` (`id\_client` ASC),

CONSTRAINT `tostorage`

FOREIGN KEY (`id\_storage`)

REFERENCES `db`.`storage` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `from\_client\_to\_sale`

FOREIGN KEY (`id\_client`)

REFERENCES `db`.`clients` (`idclient`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`products` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL DEFAULT NULL,

`id\_category` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`id\_manufacturer` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `tocategory\_idx` (`id\_category` ASC),

INDEX `tomanufacture\_idx` (`id\_manufacturer` ASC),

CONSTRAINT `tocategory`

FOREIGN KEY (`id\_category`)

REFERENCES `db`.`categories` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `tomanufacture`

FOREIGN KEY (`id\_manufacturer`)

REFERENCES `db`.`manufacturers` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`manufacturers` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`manufacturer` VARCHAR(45) NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`categories` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`category` VARCHAR(45) NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`storage` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO\_INCREMENT,

`amount` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`id\_provider` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`date\_to\_storage` DATE NULL DEFAULT NULL,

`price` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`idproduct` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `toprovider\_idx` (`id\_provider` ASC),

INDEX `toproduct\_idx` (`idproduct` ASC),

CONSTRAINT `toprovider`

FOREIGN KEY (`id\_provider`)

REFERENCES `db`.`providers` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `toproduct`

FOREIGN KEY (`idproduct`)

REFERENCES `db`.`products` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`providers` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`id\_pesonalinfo` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`id\_bank\_detail` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`id\_user` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `tobankdetail\_idx` (`id\_bank\_detail` ASC),

INDEX `topersonalinfo\_idx` (`id\_pesonalinfo` ASC),

INDEX `from\_user\_to\_role\_idx` (`id\_user` ASC),

CONSTRAINT `toproviderbankdetail`

FOREIGN KEY (`id\_bank\_detail`)

REFERENCES `db`.`bank\_details` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `toproviderpersonalinfo`

FOREIGN KEY (`id\_pesonalinfo`)

REFERENCES `db`.`personal\_informations` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `from\_user\_to\_role`

FOREIGN KEY (`id\_user`)

REFERENCES `db`.`users` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`bank\_details` (

`id` SMALLINT(5) UNSIGNED NOT NULL AUTO\_INCREMENT,

`company\_name` VARCHAR(100) NULL DEFAULT NULL,

`UNN` INT(10) UNSIGNED NULL DEFAULT NULL,

`bank\_branch` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

`id\_personal\_info` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `topersonalinfo\_idx` (`id\_personal\_info` ASC),

CONSTRAINT `tobankpersonalinfo`

FOREIGN KEY (`id\_personal\_info`)

REFERENCES `db`.`personal\_informations` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`countries` (

`id` TINYINT(3) UNSIGNED NOT NULL AUTO\_INCREMENT,

`short\_country` VARCHAR(10) NULL DEFAULT NULL,

`full\_country` VARCHAR(64) NULL DEFAULT NULL,

PRIMARY KEY (`id`),

UNIQUE INDEX `full\_country\_UNIQUE` (`full\_country` ASC),

UNIQUE INDEX `idcountry\_UNIQUE` (`id` ASC))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`payments` (

`id` MEDIUMINT(8) UNSIGNED NOT NULL,

`number` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`cost` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`date\_of\_payment` DATE NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`clients` (

`idclient` SMALLINT(5) UNSIGNED NOT NULL,

`id\_payments` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`id\_personal\_info` MEDIUMINT(8) UNSIGNED NULL DEFAULT NULL,

`id\_user` SMALLINT(5) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`idclient`),

INDEX `from\_perinfo\_to\_client\_idx` (`id\_personal\_info` ASC),

INDEX `from\_payment\_to\_client\_idx` (`id\_payments` ASC),

INDEX `from\_user\_to\_client\_idx` (`id\_user` ASC),

CONSTRAINT `from\_perinfo\_to\_client`

FOREIGN KEY (`id\_personal\_info`)

REFERENCES `db`.`personal\_informations` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `from\_payment\_to\_client`

FOREIGN KEY (`id\_payments`)

REFERENCES `db`.`payments` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `from\_user\_to\_client`

FOREIGN KEY (`id\_user`)

REFERENCES `db`.`users` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`users` (

`id` SMALLINT(5) UNSIGNED NOT NULL,

`login` VARCHAR(45) NULL DEFAULT NULL,

`password` VARCHAR(45) NULL DEFAULT NULL,

`id\_role` TINYINT(3) UNSIGNED NULL DEFAULT NULL,

PRIMARY KEY (`id`),

INDEX `from\_role\_to\_user\_idx` (`id\_role` ASC),

CONSTRAINT `from\_role\_to\_user`

FOREIGN KEY (`id\_role`)

REFERENCES `db`.`role` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

CREATE TABLE IF NOT EXISTS `db`.`role` (

`id` TINYINT(3) UNSIGNED NOT NULL,

`role` VARCHAR(45) NULL DEFAULT NULL,

PRIMARY KEY (`id`))

ENGINE = InnoDB

DEFAULT CHARACTER SET = utf8;

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

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

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