

Министерство образования Республики
Беларусь Учреждение образования
БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ
ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ

КАФЕДРА ИНФОРМАТИКИ

Отчёт по лабораторной работе №1

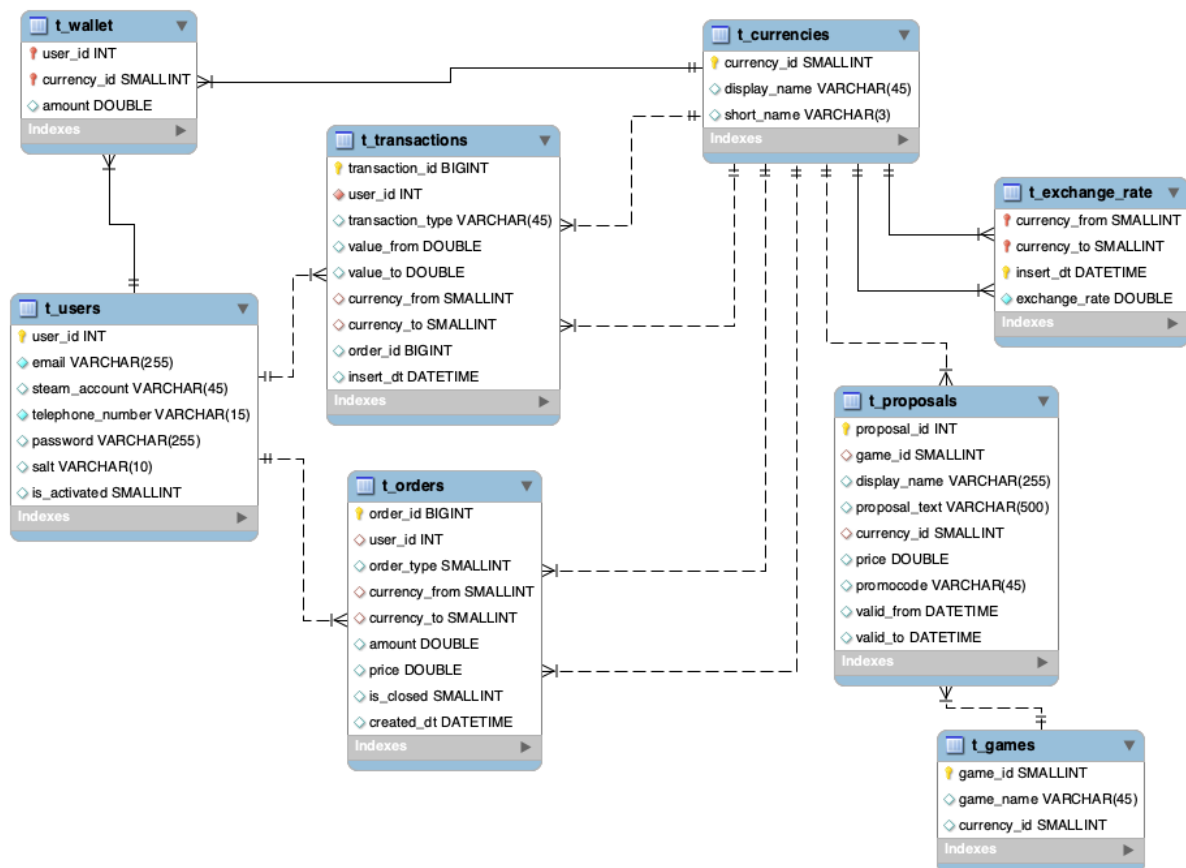
«Проектирование и создание БД»

Выполнил:
студент гр. 953501
Рисунова Е.В
Проверил:
Гриценко Н.Ю.

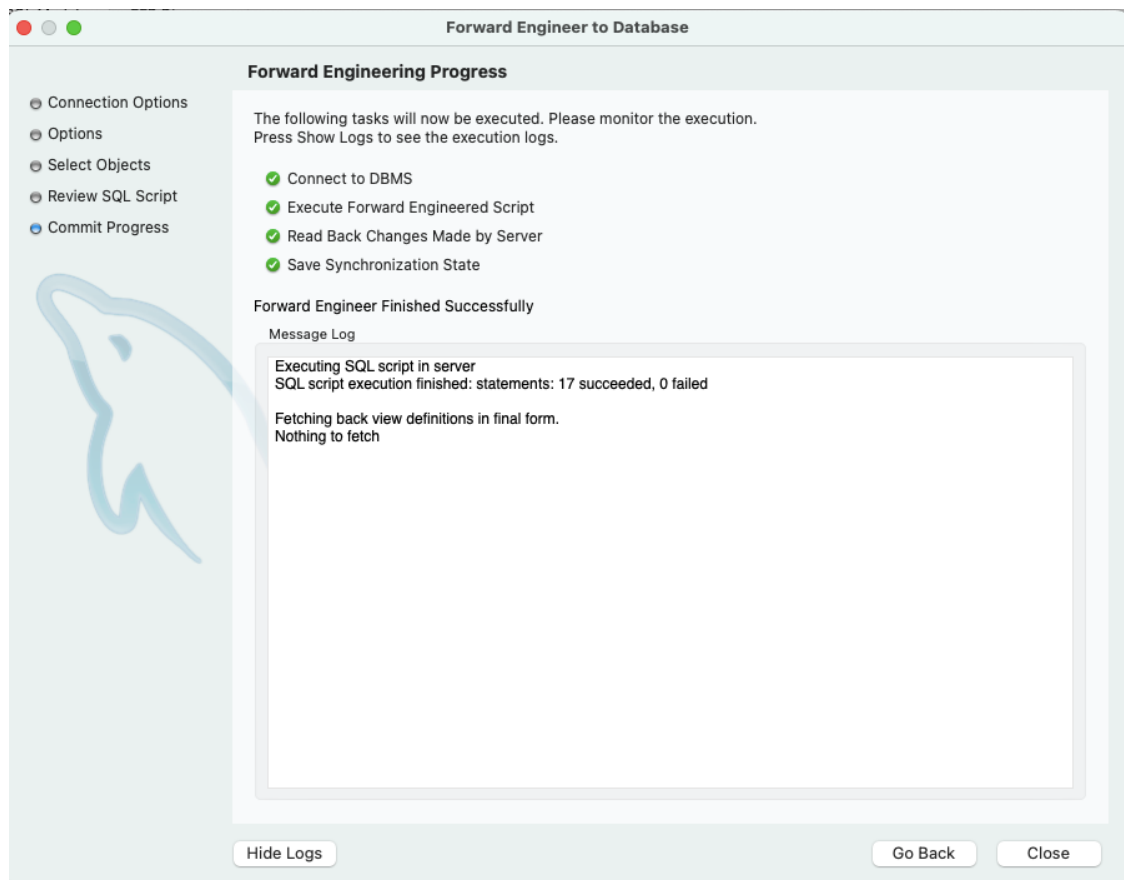
Минск 2022

Для данного проекта было решено использовать реляционную базу данных MySQL Server. Ее преимущества для данного небольшого проекта это простота развертываемости и поддержки, а также наличие встроенного в MySQL Workbench инструмента для создания моделей и EER диаграмм и последующего имплементирования в базу данных.

ЕЕR диаграмма схемы gamestock:



Сообщение об успешном создании всех таблиц и ключей.



Текст SQL скрипта на создании таблиц.

```
-- MySQL Script generated by MySQL Workbench
-- Tue Nov 1 15:58:44 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`.`t_users`

```
CREATE TABLE IF NOT EXISTS `mydb`.`t_users` (  
  `user_id` INT NOT NULL,  
  `email` VARCHAR(255) NOT NULL,  
  `steam_account` VARCHAR(45) NULL,  
  `telephone_number` VARCHAR(15) NOT NULL,  
  `password` VARCHAR(255) NULL,  
  `salt` VARCHAR(10) NULL,  
  `is_activated` SMALLINT NULL,  
  PRIMARY KEY (`user_id`),  
  UNIQUE INDEX `email_UNIQUE` (`email` ASC) VISIBLE,  
  UNIQUE INDEX `steam_account_UNIQUE` (`steam_account` ASC) VISIBLE,  
  UNIQUE INDEX `telephone_number_UNIQUE` (`telephone_number` ASC) VISIBLE)  
ENGINE = InnoDB;
```

-- Table `mydb`.`t_currencies`

```
CREATE TABLE IF NOT EXISTS `mydb`.`t_currencies` (  
  `currency_id` SMALLINT NOT NULL,  
  `display_name` VARCHAR(45) NULL,  
  `short_name` VARCHAR(3) NULL,  
  PRIMARY KEY (`currency_id`))  
ENGINE = InnoDB;
```

-- Table `mydb`.`t_transactions`

```
CREATE TABLE IF NOT EXISTS `mydb`.`t_transactions` (  
  `transaction_id` BIGINT NOT NULL,  
  `user_id` INT NOT NULL,  
  `transaction_type` VARCHAR(45) NULL,  
  `value_from` DOUBLE NULL,  
  `value_to` DOUBLE NULL,  
  `currency_from` SMALLINT NULL,  
  `currency_to` SMALLINT NULL,  
  `order_id` BIGINT NULL,  
  `insert_dt` DATETIME NULL,  
  PRIMARY KEY (`transaction_id`),  
  INDEX `fk_transaction_user_idx` (`user_id` ASC) VISIBLE,  
  INDEX `fk_transaction_currency_from_idx` (`currency_from` ASC) VISIBLE,  
  INDEX `fk_transaction_currency_to_idx` (`currency_to` ASC) VISIBLE,  
  CONSTRAINT `fk_transaction_user`  
    FOREIGN KEY (`user_id`)  
    REFERENCES `mydb`.`t_users` (`user_id`)  
    ON DELETE NO ACTION  
    ON UPDATE NO ACTION,  
  CONSTRAINT `fk_transaction_currency_from`  
    FOREIGN KEY (`currency_from`)  
    REFERENCES `mydb`.`t_currencies` (`currency_id`)
```

```

        ON DELETE NO ACTION
        ON UPDATE NO ACTION,
CONSTRAINT `fk_transaction_currency_to`
    FOREIGN KEY (`currency_to`)
    REFERENCES `mydb`.`t_currencies` (`currency_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

```

```

-----
-- Table `mydb`.`t_wallet`
-----

```

```

CREATE TABLE IF NOT EXISTS `mydb`.`t_wallet` (
  `user_id` INT NOT NULL,
  `currency_id` SMALLINT NOT NULL,
  `amount` DOUBLE NULL,
  PRIMARY KEY (`user_id`, `currency_id`),
  INDEX `fk_wallet_currency_idx` (`currency_id` ASC) VISIBLE,
  CONSTRAINT `fk_wallet_user`
    FOREIGN KEY (`user_id`)
    REFERENCES `mydb`.`t_users` (`user_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_wallet_currency`
    FOREIGN KEY (`currency_id`)
    REFERENCES `mydb`.`t_currencies` (`currency_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

```

```

-----
-- Table `mydb`.`t_exchange_rate`
-----

```

```

CREATE TABLE IF NOT EXISTS `mydb`.`t_exchange_rate` (
  `currency_from` SMALLINT NOT NULL,
  `currency_to` SMALLINT NOT NULL,
  `insert_dt` DATETIME NOT NULL,
  `exchange_rate` DOUBLE NOT NULL,
  PRIMARY KEY (`currency_from`, `currency_to`, `insert_dt`),
  INDEX `fk_exchange_rate_currency_to_idx` (`currency_to` ASC) VISIBLE,
  CONSTRAINT `fk_exchange_rate_currency_from`
    FOREIGN KEY (`currency_from`)
    REFERENCES `mydb`.`t_currencies` (`currency_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_exchange_rate_currency_to`
    FOREIGN KEY (`currency_to`)
    REFERENCES `mydb`.`t_currencies` (`currency_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

```

-- Table `mydb`.`t_orders`

```
CREATE TABLE IF NOT EXISTS `mydb`.`t_orders` (  
  `order_id` BIGINT NOT NULL,  
  `user_id` INT NULL,  
  `order_type` SMALLINT NULL,  
  `currency_from` SMALLINT NULL,  
  `currency_to` SMALLINT NULL,  
  `amount` DOUBLE NULL,  
  `price` DOUBLE NULL,  
  `is_closed` SMALLINT NULL,  
  `created_dt` DATETIME NULL,  
  PRIMARY KEY (`order_id`),  
  INDEX `fk_orders_user_idx` (`user_id` ASC) VISIBLE,  
  INDEX `fk_orders_currency_idx` (`currency_from` ASC) VISIBLE,  
  INDEX `fk_orders_currency_to_idx` (`currency_to` ASC) VISIBLE,  
  CONSTRAINT `fk_orders_user`  
    FOREIGN KEY (`user_id`)  
      REFERENCES `mydb`.`t_users` (`user_id`)  
      ON DELETE NO ACTION  
      ON UPDATE NO ACTION,  
  CONSTRAINT `fk_orders_currency_from`  
    FOREIGN KEY (`currency_from`)  
      REFERENCES `mydb`.`t_currencies` (`currency_id`)  
      ON DELETE NO ACTION  
      ON UPDATE NO ACTION,  
  CONSTRAINT `fk_orders_currency_to`  
    FOREIGN KEY (`currency_to`)  
      REFERENCES `mydb`.`t_currencies` (`currency_id`)  
      ON DELETE NO ACTION  
      ON UPDATE NO ACTION)  
ENGINE = InnoDB;
```

-- Table `mydb`.`t_games`

```
CREATE TABLE IF NOT EXISTS `mydb`.`t_games` (  
  `game_id` SMALLINT NOT NULL,  
  `game_name` VARCHAR(45) NULL,  
  `currency_id` SMALLINT NULL,  
  PRIMARY KEY (`game_id`))  
ENGINE = InnoDB;
```

-- Table `mydb`.`t_proposals`

```
CREATE TABLE IF NOT EXISTS `mydb`.`t_proposals` (  
  `proposal_id` INT NOT NULL,  
  `game_id` SMALLINT NULL,  
  `display_name` VARCHAR(255) NULL,  
  `proposal_text` VARCHAR(500) NULL,  
  `currency_id` SMALLINT NULL,
```

```

`price` DOUBLE NULL,
`promocode` VARCHAR(45) NULL,
`valid_from` DATETIME NULL,
`valid_to` DATETIME NULL,
PRIMARY KEY (`proposal_id`),
INDEX `fk_proposals_game_idx` (`game_id` ASC) VISIBLE,
INDEX `fk_proposals_currency_idx` (`currency_id` ASC) VISIBLE,
CONSTRAINT `fk_proposals_game`
  FOREIGN KEY (`game_id`)
    REFERENCES `mydb`.`t_games` (`game_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
CONSTRAINT `fk_proposals_currency`
  FOREIGN KEY (`currency_id`)
    REFERENCES `mydb`.`t_currencies` (`currency_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;

```

```

-----
-- Table `mydb`.`t_currencies_has_t_currencies`
-----

```

```

CREATE TABLE IF NOT EXISTS `mydb`.`t_currencies_has_t_currencies` (
  `t_currencies_currency_id` SMALLINT NOT NULL,
  `t_currencies_currency_id1` SMALLINT NOT NULL,
  PRIMARY KEY (`t_currencies_currency_id`,`t_currencies_currency_id1`),
  INDEX `fk_t_currencies_has_t_currencies_t_currencies2_idx` (`t_currencies_currency_id1` ASC)
  VISIBLE,
  INDEX `fk_t_currencies_has_t_currencies_t_currencies1_idx` (`t_currencies_currency_id` ASC)
  VISIBLE,
  CONSTRAINT `fk_t_currencies_has_t_currencies_t_currencies1`
    FOREIGN KEY (`t_currencies_currency_id`)
      REFERENCES `mydb`.`t_currencies` (`currency_id`)
      ON DELETE NO ACTION
      ON UPDATE NO ACTION,
  CONSTRAINT `fk_t_currencies_has_t_currencies_t_currencies2`
    FOREIGN KEY (`t_currencies_currency_id1`)
      REFERENCES `mydb`.`t_currencies` (`currency_id`)
      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;

```