Министерство образования Республики Беларусь

Учреждение образования

БелорусскиЙ государственный университет

информатики и радиоэлектроники

Факультет компьютерных систем и сетей

Кафедра программного обеспечения информационных технологий

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# оТЧЕТ

по лабораторной работе №5

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|  |  |  |
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**Работа турагентства**

1. Настройка прав доступа

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Приложение | Гость | Пользователь | Администратор |
| tour | R | R | R | CRUD |
| tour\_type | R | R | R | CRUD |
| tour\_types\_tours | R | R | R | CRUD |
| FAQ | R | R | R | CRUD |
| tour\_day\_description | R | R | R | CRUD |
| photo | R | R | R | CRUD |
| feedback | R | R | CRUD | CRUD |
| tour\_date | R | R | R | CRUD |
| tours\_ localities | R | R | R | CRUD |
| locality | R | R | R | CRUD |
| booking\_group | R | - | CRUD | CRUD |
| country | R | R | R | CRUD |
| visa\_information | R | R | R | CRUD |
| address | R | - | CRUD | CRUD |
| user | CRUD | R | CRUD | CRUD |
| booking | R | - | CRUD | CRUD |
| critical\_contact | R | - | CRUD | CRUD |
| street | R | R | R | CRUD |
| service | R | R | R | CRUD |
| services\_tours | R | R | R | CRUD |

SQL-код настройки прав доступа выглядит следующим образом:

DROP USER 'admin'@'localhost';

CREATE USER 'admin'@'localhost' IDENTIFIED BY 'adminpassword';

GRANT ALL PRIVILEGES ON \* TO 'admin'@'localhost';

DROP USER 'guest'@'localhost';

CREATE USER 'guest'@'localhost' IDENTIFIED BY 'guestpassword';

GRANT SELECT ON `tour` TO 'guest'@'localhost';

GRANT SELECT ON `tour\_type` TO 'guest'@'localhost';

GRANT SELECT ON `tour\_types\_tours` TO 'guest'@'localhost';

GRANT SELECT ON `FAQ` TO 'guest'@'localhost';

GRANT SELECT ON `tour\_day\_description` TO 'guest'@'localhost';

GRANT SELECT ON `photo` TO 'guest'@'localhost';

GRANT SELECT ON `feedback` TO 'guest'@'localhost';

GRANT SELECT ON `tour\_date` TO 'guest'@'localhost';

GRANT SELECT ON `tours\_localities` TO 'guest'@'localhost';

GRANT SELECT ON `locality` TO 'guest'@'localhost';

GRANT SELECT ON `country` TO 'guest'@'localhost';

GRANT SELECT ON `visa\_information` TO 'guest'@'localhost';

GRANT SELECT ON `user` TO 'guest'@'localhost';

GRANT SELECT ON `street` TO 'guest'@'localhost';

GRANT SELECT ON `service` TO 'guest'@'localhost';

GRANT SELECT ON `services\_tours` TO 'guest'@'localhost';

DROP USER 'app'@'localhost';

CREATE USER 'app'@'localhost' IDENTIFIED BY 'apppassword';

GRANT SELECT ON `tour` TO 'app'@'localhost';

GRANT SELECT ON `tour\_type` TO 'app'@'localhost';

GRANT SELECT ON `tour\_types\_tours` TO 'app'@'localhost';

GRANT SELECT ON `FAQ` TO 'app'@'localhost';

GRANT SELECT ON `tour\_day\_description` TO 'app'@'localhost';

GRANT SELECT ON `photo` TO 'app'@'localhost';

GRANT SELECT ON `feedback` TO 'app'@'localhost';

GRANT SELECT ON `tour\_date` TO 'app'@'localhost';

GRANT SELECT ON `tours\_localities` TO 'app'@'localhost';

GRANT SELECT ON `locality` TO 'app'@'localhost';

GRANT SELECT ON `booking\_group` TO 'app'@'localhost';

GRANT SELECT ON `country` TO 'app'@'localhost';

GRANT SELECT ON `visa\_information` TO 'app'@'localhost';

GRANT SELECT ON `address` TO 'app'@'localhost';

GRANT INSERT, SELECT, UPDATE, DELETE ON `user` TO 'app'@'localhost';

GRANT SELECT ON `booking` TO 'app'@'localhost';

GRANT SELECT ON `critical\_contact` TO 'app'@'localhost';

GRANT SELECT ON `street` TO 'app'@'localhost';

GRANT SELECT ON `service` TO 'app'@'localhost';

GRANT SELECT ON `services\_tours` TO 'app'@'localhost';

DROP USER 'user'@'localhost';

CREATE USER 'user'@'localhost' IDENTIFIED BY 'userpassword';

GRANT SELECT ON `tour` TO 'user'@'localhost';

GRANT SELECT ON `tour\_type` TO 'user'@'localhost';

GRANT SELECT ON `tour\_types\_tours` TO 'user'@'localhost';

GRANT SELECT ON `FAQ` TO 'user'@'localhost';

GRANT SELECT ON `tour\_day\_description` TO 'user'@'localhost';

GRANT SELECT ON `photo` TO 'user'@'localhost';

GRANT INSERT, SELECT, UPDATE, DELETE ON `feedback` TO 'user'@'localhost';

GRANT SELECT ON `tour\_date` TO 'user'@'localhost';

GRANT SELECT ON `tours\_localities` TO 'user'@'localhost';

GRANT SELECT ON `locality` TO 'user'@'localhost';

GRANT INSERT, SELECT, UPDATE, DELETE ON `booking\_group` TO 'user'@'localhost';

GRANT SELECT ON `country` TO 'user'@'localhost';

GRANT SELECT ON `visa\_information` TO 'user'@'localhost';

GRANT INSERT, SELECT, UPDATE, DELETE ON `address` TO 'user'@'localhost';

GRANT INSERT, SELECT, UPDATE, DELETE ON `user` TO 'user'@'localhost';

GRANT INSERT, SELECT, UPDATE, DELETE ON `booking` TO 'user'@'localhost';

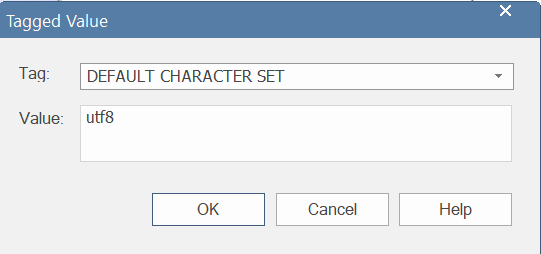
GRANT INSERT, SELECT, UPDATE, DELETE ON `critical\_contact` TO 'user'@'localhost';

GRANT SELECT ON `street` TO 'user'@'localhost';

GRANT SELECT ON `service` TO 'user'@'localhost';

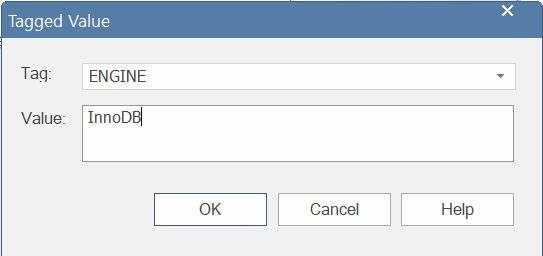
GRANT SELECT ON `services\_tours` TO 'user'@'localhost';

Настройка кодировки



В Sparx Enterprise Architect задать кодировку можно через tagged values таблицы.

1. Настройка метода доступа



InnoDB механизм хранения является в MySQL механизмом хранения по умолчанию. Если не будет сконфигурирован иной механизм хранения значения, [CREATE TABLE](http://www.rldp.ru/mysql/mysql80/sql.htm#create-table) без предложения ENGINE= создает таблицу InnoDB. Однако не стоит полагаться на настройки по умолчанию, лучше задать метод доступа явно. В Sparx Enterprise Architect это можно сделать через tagged values таблиц.

SQL-код таблицы с явно заданным методом доступа и кодировкой выглядит следующим образом:

CREATE TABLE `address`

(

`address\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`country\_id` TINYINT UNSIGNED NOT NULL,

`locality\_id` INT UNSIGNED NOT NULL,

`street\_id` BIGINT UNSIGNED NOT NULL,

`address\_building\_number` VARCHAR(4) NOT NULL,

`address\_apartment\_number` SMALLINT UNSIGNED NULL,

CONSTRAINT `PK\_addresses` PRIMARY KEY (`address\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

1. Добавление индексов

Помимо автоматически сгенерированных индексов были добавлены следующие:

1. IX\_tour\_name – для ускорения поиска по названию тура
2. IX\_tour\_cost – для ускорения поиска по цене тура
3. IX\_tour\_name\_tour\_cost – для ускорения поиска по названию и цене
4. IX\_FAQ\_question – для ускорения поиска по вопросу
5. IX\_tour\_date\_departure\_date – для ускорения поиска по дате отъезда
6. IX\_tour\_date\_tour\_id\_departure\_date – для ускорения поиска по идентификатору тура и дате отъезда
7. IX\_user\_last\_name\_first\_name\_email\_phone\_number – для ускорения поиска по фамилии, имени, почте, номеру телефона
8. IX\_user\_passport – для ускорения поиска по номеру паспорта

SQL-код создания индексов:

ALTER TABLE `tour`

ADD INDEX `IX\_tour\_cost` (`tour\_cost` ASC)

;

ALTER TABLE `tour`

ADD INDEX `IX\_tour\_name` (`tour\_name` ASC)

;

ALTER TABLE `tour`

ADD INDEX `IX\_tour\_name\_tour\_cost` (`tour\_name` ASC, `tour\_cost` ASC)

;

ALTER TABLE `FAQ`

ADD INDEX `IX\_FAQ\_question` (`FAQ\_question` ASC)

;

ALTER TABLE `tour\_date`

ADD INDEX `IX\_tour\_date\_departure\_date` (`tour\_date\_departure\_date` ASC)

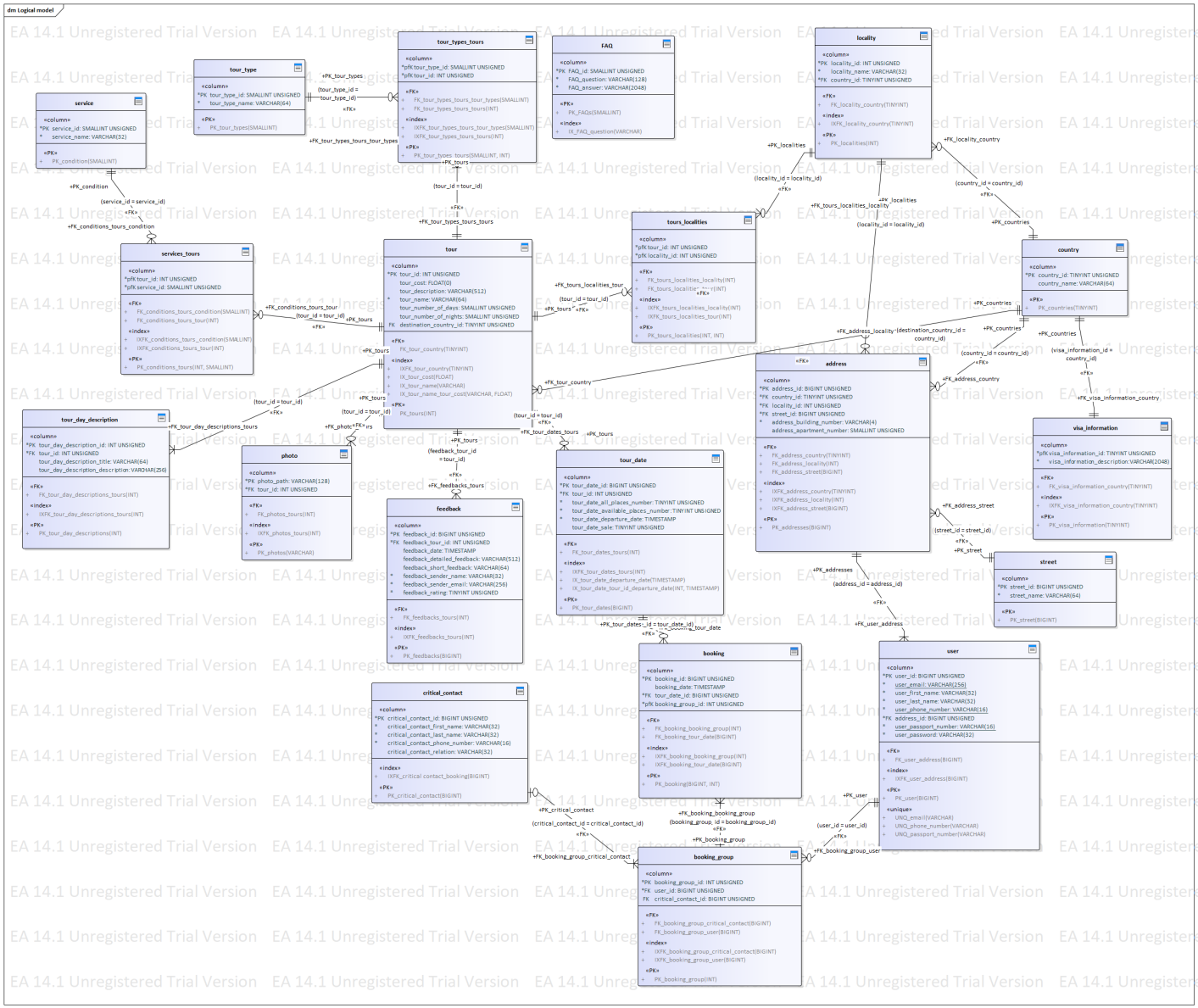
;

ALTER TABLE `tour\_date`

ADD INDEX `IX\_tour\_date\_tour\_id\_departure\_date` (`tour\_id` ASC, `tour\_date\_departure\_date` ASC)

;

Даталогическая схема созданной базы данных:



SQL-код создания таблиц:

SET FOREIGN\_KEY\_CHECKS=0

;

/\* Drop Tables \*/

DROP TABLE IF EXISTS `address` CASCADE

;

DROP TABLE IF EXISTS `booking` CASCADE

;

DROP TABLE IF EXISTS `booking\_group` CASCADE

;

DROP TABLE IF EXISTS `country` CASCADE

;

DROP TABLE IF EXISTS `critical\_contact` CASCADE

;

DROP TABLE IF EXISTS `FAQ` CASCADE

;

DROP TABLE IF EXISTS `feedback` CASCADE

;

DROP TABLE IF EXISTS `locality` CASCADE

;

DROP TABLE IF EXISTS `photo` CASCADE

;

DROP TABLE IF EXISTS `service` CASCADE

;

DROP TABLE IF EXISTS `services\_tours` CASCADE

;

DROP TABLE IF EXISTS `street` CASCADE

;

DROP TABLE IF EXISTS `tour` CASCADE

;

DROP TABLE IF EXISTS `tour\_date` CASCADE

;

DROP TABLE IF EXISTS `tour\_day\_description` CASCADE

;

DROP TABLE IF EXISTS `tour\_type` CASCADE

;

DROP TABLE IF EXISTS `tour\_types\_tours` CASCADE

;

DROP TABLE IF EXISTS `tours\_localities` CASCADE

;

DROP TABLE IF EXISTS `user` CASCADE

;

DROP TABLE IF EXISTS `visa\_information` CASCADE

;

/\* Create Tables \*/

CREATE TABLE `address`

(

`address\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`country\_id` TINYINT UNSIGNED NOT NULL,

`locality\_id` INT UNSIGNED NOT NULL,

`street\_id` BIGINT UNSIGNED NOT NULL,

`address\_building\_number` VARCHAR(4) NOT NULL,

`address\_apartment\_number` SMALLINT UNSIGNED NULL,

CONSTRAINT `PK\_addresses` PRIMARY KEY (`address\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `booking`

(

`booking\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`booking\_date` TIMESTAMP NULL,

`tour\_date\_id` BIGINT UNSIGNED NOT NULL,

`booking\_group\_id` INT UNSIGNED NOT NULL,

CONSTRAINT `PK\_booking` PRIMARY KEY (`booking\_id` ASC, `booking\_group\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `booking\_group`

(

`booking\_group\_id` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`user\_id` BIGINT UNSIGNED NOT NULL,

`critical\_contact\_id` BIGINT UNSIGNED NULL,

CONSTRAINT `PK\_booking\_group` PRIMARY KEY (`booking\_group\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `country`

(

`country\_id` TINYINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`country\_name` VARCHAR(64) NULL,

CONSTRAINT `PK\_countries` PRIMARY KEY (`country\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `critical\_contact`

(

`critical\_contact\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`critical\_contact\_first\_name` VARCHAR(32) NOT NULL,

`critical\_contact\_last\_name` VARCHAR(32) NOT NULL,

`critical\_contact\_phone\_number` VARCHAR(16) NOT NULL,

`critical\_contact\_relation` VARCHAR(32) NULL,

CONSTRAINT `PK\_critical\_contact` PRIMARY KEY (`critical\_contact\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `FAQ`

(

`FAQ\_id` SMALLINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`FAQ\_question` VARCHAR(128) NOT NULL,

`FAQ\_answer` VARCHAR(2048) NOT NULL,

CONSTRAINT `PK\_FAQs` PRIMARY KEY (`FAQ\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `feedback`

(

`feedback\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`feedback\_tour\_id` INT UNSIGNED NOT NULL,

`feedback\_date` TIMESTAMP NULL,

`feedback\_detailed\_feedback` VARCHAR(512) NULL,

`feedback\_short\_feedback` VARCHAR(64) NULL,

`feedback\_sender\_name` VARCHAR(32) NOT NULL,

`feedback\_sender\_email` VARCHAR(256) NOT NULL,

`feedback\_rating` TINYINT UNSIGNED NOT NULL,

CONSTRAINT `PK\_feedbacks` PRIMARY KEY (`feedback\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `locality`

(

`locality\_id` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`locality\_name` VARCHAR(32) NOT NULL,

`country\_id` TINYINT UNSIGNED NOT NULL,

CONSTRAINT `PK\_localities` PRIMARY KEY (`locality\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `photo`

(

`photo\_path` VARCHAR(128) NOT NULL,

`tour\_id` INT UNSIGNED NOT NULL,

CONSTRAINT `PK\_photos` PRIMARY KEY (`photo\_path` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `service`

(

`service\_id` SMALLINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`service\_name` VARCHAR(32) NOT NULL,

CONSTRAINT `PK\_condition` PRIMARY KEY (`service\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `services\_tours`

(

`tour\_id` INT UNSIGNED NOT NULL,

`service\_id` SMALLINT UNSIGNED NOT NULL,

CONSTRAINT `PK\_conditions\_tours` PRIMARY KEY (`tour\_id` ASC, `service\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `street`

(

`street\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`street\_name` VARCHAR(64) NOT NULL,

CONSTRAINT `PK\_street` PRIMARY KEY (`street\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `tour`

(

`tour\_id` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`tour\_cost` FLOAT(0,0) UNSIGNED NULL,

`tour\_description` VARCHAR(512) NULL,

`tour\_name` VARCHAR(64) NOT NULL,

`tour\_number\_of\_days` SMALLINT UNSIGNED NULL,

`tour\_number\_of\_nights` SMALLINT UNSIGNED NULL,

`destination\_country\_id` TINYINT UNSIGNED NULL,

CONSTRAINT `PK\_tours` PRIMARY KEY (`tour\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `tour\_date`

(

`tour\_date\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`tour\_id` INT UNSIGNED NOT NULL,

`tour\_date\_all\_places\_number` TINYINT UNSIGNED NOT NULL,

`tour\_date\_available\_places\_number` TINYINT UNSIGNED NOT NULL,

`tour\_date\_departure\_date` TIMESTAMP NOT NULL,

`tour\_date\_sale` TINYINT UNSIGNED NULL,

CONSTRAINT `PK\_tour\_dates` PRIMARY KEY (`tour\_date\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `tour\_day\_description`

(

`tour\_day\_description\_id` INT UNSIGNED NOT NULL AUTO\_INCREMENT,

`tour\_id` INT UNSIGNED NOT NULL,

`tour\_day\_description\_title` VARCHAR(64) NULL,

`tour\_day\_description\_description` VARCHAR(256) NULL,

CONSTRAINT `PK\_tour\_day\_descriptions` PRIMARY KEY (`tour\_day\_description\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `tour\_type`

(

`tour\_type\_id` SMALLINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`tour\_type\_name` VARCHAR(64) NOT NULL,

CONSTRAINT `PK\_tour\_types` PRIMARY KEY (`tour\_type\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `tour\_types\_tours`

(

`tour\_type\_id` SMALLINT UNSIGNED NOT NULL,

`tour\_id` INT UNSIGNED NOT NULL,

CONSTRAINT `PK\_tour\_types\_tours` PRIMARY KEY (`tour\_type\_id` ASC, `tour\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `tours\_localities`

(

`tour\_id` INT UNSIGNED NOT NULL,

`locality\_id` INT UNSIGNED NOT NULL,

CONSTRAINT `PK\_tours\_localities` PRIMARY KEY (`tour\_id` ASC, `locality\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `user`

(

`user\_id` BIGINT UNSIGNED NOT NULL AUTO\_INCREMENT,

`user\_email` VARCHAR(256) NOT NULL,

`user\_first\_name` VARCHAR(32) NOT NULL,

`user\_last\_name` VARCHAR(32) NOT NULL,

`user\_phone\_number` VARCHAR(16) NOT NULL,

`address\_id` BIGINT UNSIGNED NOT NULL,

`user\_passport\_number` VARCHAR(16) NOT NULL,

`user\_password` VARCHAR(32) NOT NULL,

CONSTRAINT `PK\_user` PRIMARY KEY (`user\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

CREATE TABLE `visa\_information`

(

`visa\_information\_id` TINYINT UNSIGNED NOT NULL,

`visa\_information\_description` VARCHAR(2048) NOT NULL,

CONSTRAINT `PK\_visa\_information` PRIMARY KEY (`visa\_information\_id` ASC)

)

ENGINE=InnoDB

DEFAULT CHARACTER SET = utf8

;

/\* Create Primary Keys, Indexes, Uniques, Checks \*/

ALTER TABLE `address`

ADD INDEX `IXFK\_address\_country` (`country\_id` ASC)

;

ALTER TABLE `address`

ADD INDEX `IXFK\_address\_locality` (`locality\_id` ASC)

;

ALTER TABLE `address`

ADD INDEX `IXFK\_address\_street` (`street\_id` ASC)

;

ALTER TABLE `booking`

ADD INDEX `IXFK\_booking\_booking\_group` (`booking\_group\_id` ASC)

;

ALTER TABLE `booking`

ADD INDEX `IXFK\_booking\_tour\_date` (`tour\_date\_id` ASC)

;

ALTER TABLE `booking\_group`

ADD INDEX `IXFK\_booking\_group\_critical\_contact` (`critical\_contact\_id` ASC)

;

ALTER TABLE `booking\_group`

ADD INDEX `IXFK\_booking\_group\_user` (`user\_id` ASC)

;

ALTER TABLE `critical\_contact`

ADD INDEX `IXFK\_critical contact\_booking` (`critical\_contact\_id` ASC)

;

ALTER TABLE `FAQ`

ADD INDEX `IX\_FAQ\_question` (`FAQ\_question` ASC)

;

ALTER TABLE `feedback`

ADD INDEX `IXFK\_feedbacks\_tours` (`feedback\_tour\_id` ASC)

;

ALTER TABLE `locality`

ADD INDEX `IXFK\_locality\_country` (`country\_id` ASC)

;

ALTER TABLE `photo`

ADD INDEX `IXFK\_photos\_tours` (`tour\_id` ASC)

;

ALTER TABLE `services\_tours`

ADD INDEX `IXFK\_conditions\_tours\_condition` (`service\_id` ASC)

;

ALTER TABLE `services\_tours`

ADD INDEX `IXFK\_conditions\_tours\_tour` (`tour\_id` ASC)

;

ALTER TABLE `tour`

ADD INDEX `IXFK\_tour\_country` (`destination\_country\_id` ASC)

;

ALTER TABLE `tour`

ADD INDEX `IX\_tour\_cost` (`tour\_cost` ASC)

;

ALTER TABLE `tour`

ADD INDEX `IX\_tour\_name` (`tour\_name` ASC)

;

ALTER TABLE `tour`

ADD INDEX `IX\_tour\_name\_tour\_cost` (`tour\_name` ASC, `tour\_cost` ASC)

;

ALTER TABLE `tour\_date`

ADD INDEX `IXFK\_tour\_dates\_tours` (`tour\_id` ASC)

;

ALTER TABLE `tour\_date`

ADD INDEX `IX\_tour\_date\_departure\_date` (`tour\_date\_departure\_date` ASC)

;

ALTER TABLE `tour\_date`

ADD INDEX `IX\_tour\_date\_tour\_id\_departure\_date` (`tour\_id` ASC, `tour\_date\_departure\_date` ASC)

;

ALTER TABLE `tour\_day\_description`

ADD INDEX `IXFK\_tour\_day\_descriptions\_tours` (`tour\_id` ASC)

;

ALTER TABLE `tour\_types\_tours`

ADD INDEX `IXFK\_tour\_types\_tours\_tour\_types` (`tour\_type\_id` ASC)

;

ALTER TABLE `tour\_types\_tours`

ADD INDEX `IXFK\_tour\_types\_tours\_tours` (`tour\_id` ASC)

;

ALTER TABLE `tours\_localities`

ADD INDEX `IXFK\_tours\_localities\_locality` (`locality\_id` ASC)

;

ALTER TABLE `tours\_localities`

ADD INDEX `IXFK\_tours\_localities\_tour` (`tour\_id` ASC)

;

ALTER TABLE `user`

ADD CONSTRAINT `UNQ\_email` UNIQUE (`user\_email` ASC)

;

ALTER TABLE `user`

ADD CONSTRAINT `UNQ\_phone\_number` UNIQUE (`user\_phone\_number` ASC)

;

ALTER TABLE `user`

ADD CONSTRAINT `UNQ\_passport\_number` UNIQUE (`user\_passport\_number` ASC)

;

ALTER TABLE `user`

ADD INDEX `IXFK\_user\_address` (`address\_id` ASC)

;

ALTER TABLE `visa\_information`

ADD INDEX `IXFK\_visa\_information\_country` (`visa\_information\_id` ASC)

;

/\* Create Foreign Key Constraints \*/

ALTER TABLE `address`

ADD CONSTRAINT `FK\_address\_country`

FOREIGN KEY (`country\_id`) REFERENCES `country` (`country\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `address`

ADD CONSTRAINT `FK\_address\_locality`

FOREIGN KEY (`locality\_id`) REFERENCES `locality` (`locality\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `address`

ADD CONSTRAINT `FK\_address\_street`

FOREIGN KEY (`street\_id`) REFERENCES `street` (`street\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `booking`

ADD CONSTRAINT `FK\_booking\_booking\_group`

FOREIGN KEY (`booking\_group\_id`) REFERENCES `booking\_group` (`booking\_group\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `booking`

ADD CONSTRAINT `FK\_booking\_tour\_date`

FOREIGN KEY (`tour\_date\_id`) REFERENCES `tour\_date` (`tour\_date\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `booking\_group`

ADD CONSTRAINT `FK\_booking\_group\_critical\_contact`

FOREIGN KEY (`critical\_contact\_id`) REFERENCES `critical\_contact` (`critical\_contact\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `booking\_group`

ADD CONSTRAINT `FK\_booking\_group\_user`

FOREIGN KEY (`user\_id`) REFERENCES `user` (`user\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `feedback`

ADD CONSTRAINT `FK\_feedbacks\_tours`

FOREIGN KEY (`feedback\_tour\_id`) REFERENCES `tour` (`tour\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `locality`

ADD CONSTRAINT `FK\_locality\_country`

FOREIGN KEY (`country\_id`) REFERENCES `country` (`country\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `photo`

ADD CONSTRAINT `FK\_photos\_tours`

FOREIGN KEY (`tour\_id`) REFERENCES `tour` (`tour\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `services\_tours`

ADD CONSTRAINT `FK\_conditions\_tours\_condition`

FOREIGN KEY (`service\_id`) REFERENCES `service` (`service\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `services\_tours`

ADD CONSTRAINT `FK\_conditions\_tours\_tour`

FOREIGN KEY (`tour\_id`) REFERENCES `tour` (`tour\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `tour`

ADD CONSTRAINT `FK\_tour\_country`

FOREIGN KEY (`destination\_country\_id`) REFERENCES `country` (`country\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `tour\_date`

ADD CONSTRAINT `FK\_tour\_dates\_tours`

FOREIGN KEY (`tour\_id`) REFERENCES `tour` (`tour\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `tour\_day\_description`

ADD CONSTRAINT `FK\_tour\_day\_descriptions\_tours`

FOREIGN KEY (`tour\_id`) REFERENCES `tour` (`tour\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `tour\_types\_tours`

ADD CONSTRAINT `FK\_tour\_types\_tours\_tour\_types`

FOREIGN KEY (`tour\_type\_id`) REFERENCES `tour\_type` (`tour\_type\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `tour\_types\_tours`

ADD CONSTRAINT `FK\_tour\_types\_tours\_tours`

FOREIGN KEY (`tour\_id`) REFERENCES `tour` (`tour\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `tours\_localities`

ADD CONSTRAINT `FK\_tours\_localities\_locality`

FOREIGN KEY (`locality\_id`) REFERENCES `locality` (`locality\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `tours\_localities`

ADD CONSTRAINT `FK\_tours\_localities\_tour`

FOREIGN KEY (`tour\_id`) REFERENCES `tour` (`tour\_id`) ON DELETE Cascade ON UPDATE Cascade

;

ALTER TABLE `user`

ADD CONSTRAINT `FK\_user\_address`

FOREIGN KEY (`address\_id`) REFERENCES `address` (`address\_id`) ON DELETE Restrict ON UPDATE Cascade

;

ALTER TABLE `visa\_information`

ADD CONSTRAINT `FK\_visa\_information\_country`

FOREIGN KEY (`visa\_information\_id`) REFERENCES `country` (`country\_id`) ON DELETE Cascade ON UPDATE Cascade

;

SET FOREIGN\_KEY\_CHECKS=1

;