Mohammad Mushfequr Rahman

100438290, University of Derby, 27/10/2017

Abstract

From Design to Fully Implemented, Optimized and Secured Database

Database for historical site

Design and Implementation

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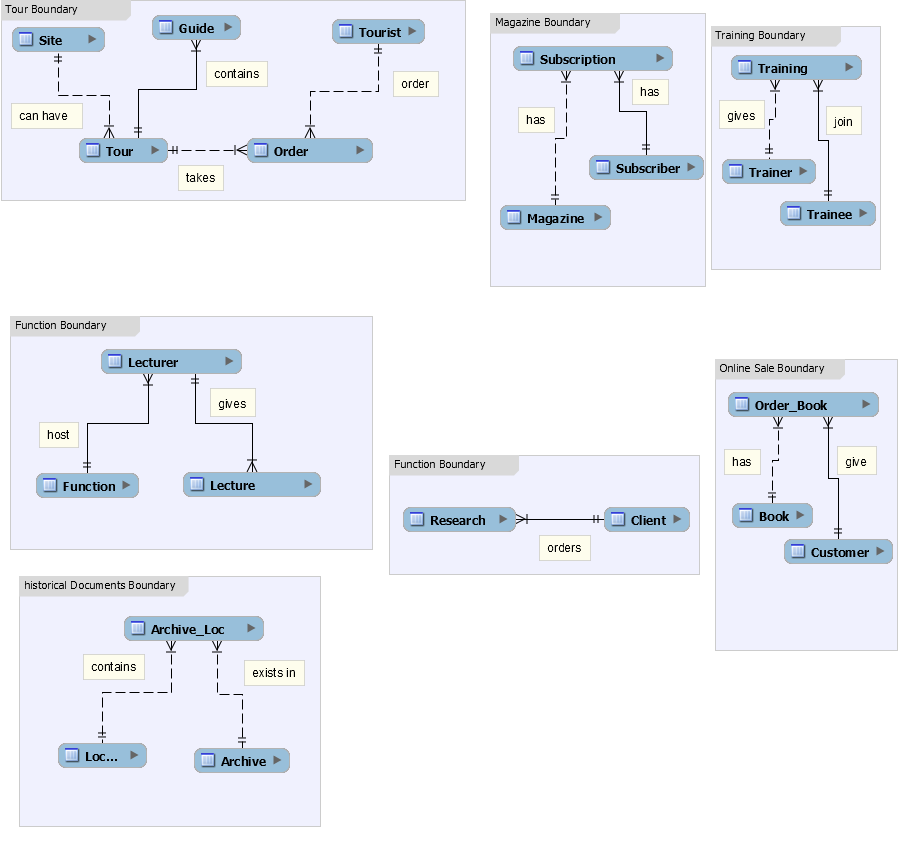
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# ERM



## Entities

Guide: (id, name, email, {address}, telephone)

Reason for data capture: Tour needs guides

Tour: (id, name location description comment {type}, price)

Reason for data capture: It’s a tour of historical sites

Site: (id {location} history condition type)

Reason for data capture: Site contains building, battlefield and archeology

Tourist: (id name email phone {address})

Reason for data capture: Tour has tourists.

Order\_tour: (invoice date guide tour tourist)

Reason for data capture: Tourists order/book tour. There will be other PK

Lecture: (id topic duration date, function)

Reason for data capture: There will be lecture on.

Lecturer: (id name email phone {address} expertise, function)

Reason for data capture: Who will give lectures?

Function: (id name email {address})

Reason for data capture: Lecture takes place in function

Research: (id details deadline)

Reason for data capture: Research on genealogy

Client: (id name email {address})

Reason for data capture: Who will order research?

Archive: (id name age fragility detail)

Location: (id postcode area city country)

Archive\_Loc: (id\_arch id\_loc date\_placed date\_shift)

Book: (isbn title author date edition pages genre cost)

Reason for data capture: Online book sale

Author: (id name)

Reason for data capture: Written by who?

Order\_book: (invoice book\_id cust\_id book date\_order price {dispatch\_addr})

Customer: (id name email phone {address})

Subscriber: (id name email phone {address})

Reason for data capture: Subscriber information

Magazine: (id issue date genre pages issue\_type)

Reason for data capture: magazines available for subscription

Subscription: (id subscriber magazine date\_start date\_end cost)

Reason for data capture: The subscription. There will be other PK for this

Trainer: (id name phone email {address} expertise status)

Trainee: (id name phone email {address})

Training: (id trainer trainee type location start\_time end\_time)

## Constraints

* Site must be areas, buildings and battlefields
* A historical document can have more than one copies hence multiple locations
* Lecturer titles: Dr. Mr. Miss. Prof.
* Archive fragility: Low, Critical and Moderate.

## Assumptions

* This company does not need database for email/phone messages as this company is not an email service company or a phone service company. Company employees can just refer to their relevant company emails which user can find in relevant company website.

# Normalization

## 1NF

All attributes with in {} are repeating and/or duplicate so we make new tables for them in order of occurrence.

Addr\_guide: (id street postcode city country)

Loc\_site: (id street postcode city country)

Addr\_tourist: (id street postcode city country)

Loc\_func: (id street postcode city country)

Addr\_client: (id street postcode city country)

Addr\_cust: (id street postcode city country)

Addr\_subs: (id street postcode city country)

Dispatch\_addr: (id street postcode city country)

## 2NF

No partial dependency/Atomic PK/No non-primary key attributes

***Tour***: (id, name description comment {type})

We have type and location as non-primary key attribute so remove it

***Order\_tour***: (invoice date guide tour tourist)

We have guide, tour and tourist as non-primary key attributes so remove them

***Order\_book***: (invoice book\_id cust\_id book date\_order price)

We have book\_id, cust\_id, price and book as non-primary key attribute and PD so we remove them

***Lecture***: : (id topic duration date, function)

We have function as non-primary key attribute so we remove them

***Lecturer***: (id name email phone, expertise, function)

We have function as non-primary key attribute so we remove them

***Subscription***: (id subscriber magazine date\_start date\_end cost)

We have subscriber, magazine and cost as non-primary key so we remove them

***Training***: (id trainer trainee type location start\_time end\_time)

We have trainer, trainee as non-primary primary key attribute and type as PD so we remove them

Finally we have

***Tour***: (id, name description comment)

***Order\_tour***: (invoice date)

***Order\_book***: (invoice date\_order )

***Function***: (id name email)

***Subscription***: (id date\_start date\_end )

***Training***: (id location start\_time end\_time)

## 3NF & BCNF

Training: (id trainer trainee type location start\_time end\_time)

Table is already in 3NF/BCNF as there are no transitive dependency and every candidate key is a determinant. So we have

* + Guide: (id, name, email, telephone)
  + Site: (id history condition type)
  + Tourist: (id name email phone)
  + Lecture: (id topic duration date)
  + Lecturer: (id name email phone, expertise)
  + Function: (id name email)
  + Research: (id details deadline)
  + Client: (id name email {address})
  + Archive: (id name age fragility detail)
  + Location: (id postcode area city country)
  + Archive\_Loc: (id\_arch id\_loc date\_placed date\_shift)
  + Book: (isbn title author date edition pages genre cost)
  + Author: (id name)
  + Customer: (id name email phone)
  + Subscriber: (id name email phone)
  + Magazine: (id issue date genre pages issue\_type cost)
  + Trainer: (id name phone email expertise status)
  + Trainee: (id name phone email)
  + Tour: (id, name description comment)
  + Order\_tour: (invoice date)
  + Order\_book: (invoice date\_order )
  + Subscription: (id date\_start date\_end )
  + Training: (id type location start\_time end\_time)
  + Addr\_guide: (id street postcode city country)
  + Loc\_site: (id street postcode city country)
  + Addr\_tourist: (id street postcode city country)
  + Loc\_func: (id street postcode city country)
  + Addr\_client: (id street postcode city country)
  + Addr\_cust: (id street postcode city country)
  + Addr\_subs: (id street postcode city country)
  + Dispatch\_addr: (id street postcode city country)

# Implementation

## Command

/\*Created by Mohammad Rahman 100438290

Completed 10/27/2017 for UDOL DB\*/

-- Determines whether InnoDB performs duplicate key checks

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

-- Determines whether the server should check that a referenced table exists when defining a foreign key.

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

-- causing the server to operate in a more restrictive mode,

SET @OLD\_SQL\_MODE=@@SQL\_MODE, SQL\_MODE='TRADITIONAL,ALLOW\_INVALID\_DATES';

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

-- Schema history

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

CREATE SCHEMA IF NOT EXISTS `history` ;

USE `history` ;

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

-- Table `history`.`loc\_site`

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

CREATE TABLE IF NOT EXISTS `history`.`loc\_site` (

`idloc\_site` INT NOT NULL AUTO\_INCREMENT,

`street` VARCHAR(45) NULL,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idloc\_site`))

ENGINE = InnoDB;

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

-- Table `history`.`site`

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

CREATE TABLE IF NOT EXISTS `history`.`site` (

`idSite` INT NOT NULL AUTO\_INCREMENT,

`history` VARCHAR(1000) NULL,

`condition` VARCHAR(45) NULL,

`type` VARCHAR(45) NULL,

`idloc\_site` INT NOT NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idSite`),

CONSTRAINT `fk\_Site\_loc\_site1`

FOREIGN KEY (`idloc\_site`)

REFERENCES `history`.`loc\_site` (`idloc\_site`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Site\_loc\_site1\_idx` ON `history`.`site` (`idloc\_site` ASC);

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

-- Table `history`.`tour`

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

CREATE TABLE IF NOT EXISTS `history`.`tour` (

`idTour` INT NOT NULL AUTO\_INCREMENT,

`idSite` INT NOT NULL,

`name` VARCHAR(45) NULL,

`description` VARCHAR(200) NULL,

`comment` VARCHAR(400) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idTour`),

CONSTRAINT `fk\_Tour\_Site1`

FOREIGN KEY (`idSite`)

REFERENCES `history`.`site` (`idSite`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Tour\_Site1\_idx` ON `history`.`tour` (`idSite` ASC);

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

-- Table `history`.`addr\_guide`

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

CREATE TABLE IF NOT EXISTS `history`.`addr\_guide` (

`idaddr\_guide` INT NOT NULL AUTO\_INCREMENT,

`street` VARCHAR(45) NULL,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idaddr\_guide`))

ENGINE = InnoDB;

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

-- Table `history`.`guide`

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

CREATE TABLE IF NOT EXISTS `history`.`guide` (

`idGuide` INT NOT NULL AUTO\_INCREMENT,

`idTour` INT NOT NULL,

`name` VARCHAR(45) NULL,

`email` VARCHAR(40) NULL,

`telephone` INT NULL,

`idaddr\_guide` INT NOT NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idGuide`),

CONSTRAINT `fk\_Guide\_Tour`

FOREIGN KEY (`idTour`)

REFERENCES `history`.`tour` (`idTour`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_guide\_addr\_guide1`

FOREIGN KEY (`idaddr\_guide`)

REFERENCES `history`.`addr\_guide` (`idaddr\_guide`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Guide\_Tour\_idx` ON `history`.`guide` (`idTour` ASC);

CREATE INDEX `fk\_guide\_addr\_guide1\_idx` ON `history`.`guide` (`idaddr\_guide` ASC);

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

-- Table `history`.`tourist`

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

CREATE TABLE IF NOT EXISTS `history`.`tourist` (

`idTourist` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL,

`email` VARCHAR(45) NULL,

`phone` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idTourist`))

ENGINE = InnoDB;

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

-- Table `history`.`client`

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

CREATE TABLE IF NOT EXISTS `history`.`client` (

`idClient` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL,

`email` VARCHAR(45) NULL,

`phone` INT NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idClient`))

ENGINE = InnoDB;

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

-- Table `history`.`research`

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

CREATE TABLE IF NOT EXISTS `history`.`research` (

`idResearch` INT NOT NULL AUTO\_INCREMENT,

`idClient` INT NOT NULL,

`details` VARCHAR(500) NULL,

`deadline` DATE NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idResearch`),

CONSTRAINT `fk\_Research\_Client1`

FOREIGN KEY (`idClient`)

REFERENCES `history`.`client` (`idClient`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Research\_Client1\_idx` ON `history`.`research` (`idClient` ASC);

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

-- Table `history`.`order`

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

CREATE TABLE IF NOT EXISTS `history`.`order` (

`invoice` INT NOT NULL AUTO\_INCREMENT,

`idTourist` INT NOT NULL,

`idTour` INT NOT NULL,

`date` DATE NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`invoice`),

CONSTRAINT `fk\_Order\_Tourist1`

FOREIGN KEY (`idTourist`)

REFERENCES `history`.`tourist` (`idTourist`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_Order\_Tour1`

FOREIGN KEY (`idTour`)

REFERENCES `history`.`tour` (`idTour`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Order\_Tourist1\_idx` ON `history`.`order` (`idTourist` ASC);

CREATE INDEX `fk\_Order\_Tour1\_idx` ON `history`.`order` (`idTour` ASC);

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

-- Table `history`.`function`

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

CREATE TABLE IF NOT EXISTS `history`.`function` (

`idFunction` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL,

`email` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idFunction`))

ENGINE = InnoDB;

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

-- Table `history`.`lecturer`

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

CREATE TABLE IF NOT EXISTS `history`.`lecturer` (

`idLecturer` INT NOT NULL AUTO\_INCREMENT,

`idFunction` INT NOT NULL,

`name` VARCHAR(45) NULL,

`email` VARCHAR(45) NULL,

`phone` INT NULL,

`expertise` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idLecturer`),

CONSTRAINT `fk\_Lecturer\_Function1`

FOREIGN KEY (`idFunction`)

REFERENCES `history`.`function` (`idFunction`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Lecturer\_Function1\_idx` ON `history`.`lecturer` (`idFunction` ASC);

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

-- Table `history`.`lecture`

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

CREATE TABLE IF NOT EXISTS `history`.`lecture` (

`idLecture` INT NOT NULL AUTO\_INCREMENT,

`idLecturer` INT NOT NULL,

`topic` VARCHAR(45) NULL,

`duration` FLOAT NULL,

`date` DATE NULL,

`idFunction` INT NOT NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idLecture`),

CONSTRAINT `fk\_Lecture\_Lecturer1`

FOREIGN KEY (`idLecturer`)

REFERENCES `history`.`lecturer` (`idLecturer`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_Lecture\_Function1`

FOREIGN KEY (`idFunction`)

REFERENCES `history`.`function` (`idFunction`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Lecture\_Lecturer1\_idx` ON `history`.`lecture` (`idLecturer` ASC);

CREATE INDEX `fk\_Lecture\_Function1\_idx` ON `history`.`lecture` (`idFunction` ASC);

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

-- Table `history`.`customer`

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

CREATE TABLE IF NOT EXISTS `history`.`customer` (

`idCustomer` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL,

`email` VARCHAR(45) NULL,

`phone` INT NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idCustomer`))

ENGINE = InnoDB;

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

-- Table `history`.`book`

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

CREATE TABLE IF NOT EXISTS `history`.`book` (

`isbn` INT NOT NULL AUTO\_INCREMENT,

`title` VARCHAR(45) NULL,

`author` VARCHAR(45) NULL,

`date` DATE NULL,

`edition` INT NULL,

`pages` INT NULL,

`genre` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`isbn`))

ENGINE = InnoDB;

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

-- Table `history`.`dispatch\_addr`

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

CREATE TABLE IF NOT EXISTS `history`.`dispatch\_addr` (

`iddispatch\_addr` INT NOT NULL,

`street` VARCHAR(45) NULL,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`iddispatch\_addr`))

ENGINE = InnoDB;

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

-- Table `history`.`order\_book`

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

CREATE TABLE IF NOT EXISTS `history`.`order\_book` (

`idCustomer` INT NOT NULL,

`isbn` INT NOT NULL,

`iddispatch\_addr` INT NOT NULL,

`invoice` INT NOT NULL,

`date` DATE NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`invoice`),

CONSTRAINT `fk\_Order\_Book\_Customer1`

FOREIGN KEY (`idCustomer`)

REFERENCES `history`.`customer` (`idCustomer`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_Order\_Book\_Book1`

FOREIGN KEY (`isbn`)

REFERENCES `history`.`book` (`isbn`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_Order\_Book\_dispatch\_addr1`

FOREIGN KEY (`iddispatch\_addr`)

REFERENCES `history`.`dispatch\_addr` (`iddispatch\_addr`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Order\_Book\_Book1\_idx` ON `history`.`order\_book` (`isbn` ASC);

CREATE INDEX `fk\_Order\_Book\_dispatch\_addr1\_idx` ON `history`.`order\_book` (`iddispatch\_addr` ASC);

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

-- Table `history`.`addr\_subscr`

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

CREATE TABLE IF NOT EXISTS `history`.`addr\_subscr` (

`idaddr\_subscr` INT NOT NULL AUTO\_INCREMENT,

`street` VARCHAR(45) NULL,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idaddr\_subscr`))

ENGINE = InnoDB;

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

-- Table `history`.`subscriber`

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

CREATE TABLE IF NOT EXISTS `history`.`subscriber` (

`idSubscriber` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(40) NOT NULL,

`email` VARCHAR(45) NULL,

`phone` INT NULL,

`address` INT NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idSubscriber`),

CONSTRAINT `fk\_Subscriber\_addr\_subscr1`

FOREIGN KEY (`address`)

REFERENCES `history`.`addr\_subscr` (`idaddr\_subscr`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Subscriber\_addr\_subscr1\_idx` ON `history`.`subscriber` (`address` ASC);

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

-- Table `history`.`magazine`

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

CREATE TABLE IF NOT EXISTS `history`.`magazine` (

`idMagazine` INT NOT NULL AUTO\_INCREMENT,

`issue` VARCHAR(45) NULL,

`date` DATE NULL,

`genre` VARCHAR(45) NULL,

`pages` VARCHAR(45) NULL,

`issue\_type` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idMagazine`))

ENGINE = InnoDB;

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

-- Table `history`.`subscription`

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

CREATE TABLE IF NOT EXISTS `history`.`subscription` (

`Magazine\_idMagazine` INT NOT NULL,

`subsciption` INT NOT NULL AUTO\_INCREMENT,

`idSubscriber` INT NOT NULL,

`date\_start` DATE NULL,

`date\_end` DATE NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`subsciption`),

CONSTRAINT `fk\_Subscription\_Magazine1`

FOREIGN KEY (`Magazine\_idMagazine`)

REFERENCES `history`.`magazine` (`idMagazine`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_Subscription\_Subscriber1`

FOREIGN KEY (`idSubscriber`)

REFERENCES `history`.`subscriber` (`idSubscriber`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Subscription\_Magazine1\_idx` ON `history`.`subscription` (`Magazine\_idMagazine` ASC);

CREATE INDEX `fk\_Subscription\_Subscriber1\_idx` ON `history`.`subscription` (`idSubscriber` ASC);

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

-- Table `history`.`trainee`

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

CREATE TABLE IF NOT EXISTS `history`.`trainee` (

`idTrainee` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL,

`phone` INT NULL,

`email` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idTrainee`))

ENGINE = InnoDB;

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

-- Table `history`.`trainer`

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

CREATE TABLE IF NOT EXISTS `history`.`trainer` (

`idTrainer` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL,

`phone` INT NULL,

`email` VARCHAR(45) NULL,

`expertise` VARCHAR(45) NULL,

`status` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idTrainer`))

ENGINE = InnoDB;

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

-- Table `history`.`training`

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

CREATE TABLE IF NOT EXISTS `history`.`training` (

`idTrainee` INT NOT NULL,

`idTrainer` INT NOT NULL,

`id\_training` INT NOT NULL AUTO\_INCREMENT,

`start\_time` DATETIME NULL,

`end\_time` DATETIME NULL,

`location` VARCHAR(145) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`id\_training`),

CONSTRAINT `fk\_Training\_Trainee1`

FOREIGN KEY (`idTrainee`)

REFERENCES `history`.`trainee` (`idTrainee`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_Training\_Trainer1`

FOREIGN KEY (`idTrainer`)

REFERENCES `history`.`trainer` (`idTrainer`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Training\_Trainer1\_idx` ON `history`.`training` (`idTrainer` ASC);

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

-- Table `history`.`archive`

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

CREATE TABLE IF NOT EXISTS `history`.`archive` (

`idArchive` INT NOT NULL AUTO\_INCREMENT,

`name` VARCHAR(45) NULL,

`age` FLOAT NULL,

`fragility` VARCHAR(45) NULL,

`detail` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idArchive`))

ENGINE = InnoDB;

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

-- Table `history`.`location`

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

CREATE TABLE IF NOT EXISTS `history`.`location` (

`idLocation` INT NOT NULL AUTO\_INCREMENT,

`postcode` VARCHAR(45) NULL,

`area` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idLocation`))

ENGINE = InnoDB;

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

-- Table `history`.`archive\_Loc`

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

CREATE TABLE IF NOT EXISTS `history`.`archive\_Loc` (

`idLocation` INT NOT NULL AUTO\_INCREMENT,

`idArchive` INT NOT NULL,

`date\_placed` DATE NULL,

`date\_shift` DATE NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idLocation`, `idArchive`),

CONSTRAINT `fk\_Archive\_Loc\_Location1`

FOREIGN KEY (`idLocation`)

REFERENCES `history`.`location` (`idLocation`)

ON DELETE CASCADE

ON UPDATE CASCADE,

CONSTRAINT `fk\_Archive\_Loc\_Archive1`

FOREIGN KEY (`idArchive`)

REFERENCES `history`.`archive` (`idArchive`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_Archive\_Loc\_Location1\_idx` ON `history`.`archive\_Loc` (`idLocation` ASC);

CREATE INDEX `fk\_Archive\_Loc\_Archive1\_idx` ON `history`.`archive\_Loc` (`idArchive` ASC);

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

-- Table `history`.`addr\_tourist`

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

CREATE TABLE IF NOT EXISTS `history`.`addr\_tourist` (

`idaddr\_tourist` INT NOT NULL AUTO\_INCREMENT,

`street` VARCHAR(45) NULL,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`idTourist` INT NOT NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idaddr\_tourist`),

CONSTRAINT `fk\_addr\_tourist\_tourist1`

FOREIGN KEY (`idTourist`)

REFERENCES `history`.`tourist` (`idTourist`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_addr\_tourist\_tourist1\_idx` ON `history`.`addr\_tourist` (`idTourist` ASC);

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

-- Table `history`.`addr\_cust`

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

CREATE TABLE IF NOT EXISTS `history`.`addr\_cust` (

`street` VARCHAR(45) NULL,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`idCustomer` INT NOT NULL AUTO\_INCREMENT,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idCustomer`),

CONSTRAINT `fk\_addr\_cust\_customer1`

FOREIGN KEY (`idCustomer`)

REFERENCES `history`.`customer` (`idCustomer`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_addr\_cust\_customer1\_idx` ON `history`.`addr\_cust` (`idCustomer` ASC);

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

-- Table `history`.`func\_loc`

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

CREATE TABLE IF NOT EXISTS `history`.`func\_loc` (

`idFunction` INT NOT NULL AUTO\_INCREMENT,

`street` VARCHAR(45) NULL,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idFunction`),

CONSTRAINT `fk\_func\_loc\_Function1`

FOREIGN KEY (`idFunction`)

REFERENCES `history`.`function` (`idFunction`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_func\_loc\_Function1\_idx` ON `history`.`func\_loc` (`idFunction` ASC);

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

-- Table `history`.`client\_addr`

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

CREATE TABLE IF NOT EXISTS `history`.`client\_addr` (

`idClient` INT NOT NULL AUTO\_INCREMENT,

`postcode` VARCHAR(45) NULL,

`city` VARCHAR(45) NULL,

`country` VARCHAR(45) NULL,

`street` VARCHAR(45) NULL,

`Mohammad\_Rahman\_100438290` VARCHAR(45) NULL,

PRIMARY KEY (`idClient`),

CONSTRAINT `fk\_client\_addr\_Client1`

FOREIGN KEY (`idClient`)

REFERENCES `history`.`client` (`idClient`)

ON DELETE CASCADE

ON UPDATE CASCADE)

ENGINE = InnoDB;

CREATE INDEX `fk\_client\_addr\_Client1\_idx` ON `history`.`client\_addr` (`idClient` ASC);

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

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

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

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

-- Data for table `history`.`loc\_site`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`loc\_site` (`idloc\_site`, `street`, `postcode`, `city`, `country`) VALUES (1, 'hamad street', '9928829', 'Cairo', 'Egypt');

INSERT INTO `history`.`loc\_site` (`idloc\_site`, `street`, `postcode`, `city`, `country`) VALUES (2, 'cambridge', '8827738', 'Cambridge', 'UK');

INSERT INTO `history`.`loc\_site` (`idloc\_site`, `street`, `postcode`, `city`, `country`) VALUES (3, 'the sahara', NULL, 'Kimbuktu', 'Sudan');

COMMIT;

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

-- Data for table `history`.`site`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`site` (`idSite`, `history`, `condition`, `type`, `idloc\_site`) VALUES (1, 'the great castle of john pillow was built in 1245...', 'good', 'castle', 1);

INSERT INTO `history`.`site` (`idSite`, `history`, `condition`, `type`, `idloc\_site`) VALUES (2, 'the marsh of golem', 'good', 'field', 2);

INSERT INTO `history`.`site` (`idSite`, `history`, `condition`, `type`, `idloc\_site`) VALUES (3, 'the spynx', 'critical', 'desert', 3);

COMMIT;

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

-- Data for table `history`.`tour`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`tour` (`idTour`, `idSite`, `name`, `description`, `comment`) VALUES (1, 1, 'the castle life', 'how life in castle existed?', 'make sure tourists wear gloves');

INSERT INTO `history`.`tour` (`idTour`, `idSite`, `name`, `description`, `comment`) VALUES (2, 2, 'the marsh', 'the deep marsh', 'make sure tourists stay out of marsh');

COMMIT;

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

-- Data for table `history`.`addr\_guide`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`addr\_guide` (`idaddr\_guide`, `street`, `postcode`, `city`, `country`) VALUES (1, '22 martin', '00292', 'Lahore', 'Pakistan');

INSERT INTO `history`.`addr\_guide` (`idaddr\_guide`, `street`, `postcode`, `city`, `country`) VALUES (2, 'hemington road', '8817', 'Chelsea', 'UK');

COMMIT;

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

-- Data for table `history`.`guide`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`guide` (`idGuide`, `idTour`, `name`, `email`, `telephone`, `idaddr\_guide`) VALUES (8000, 1, 'andrew frow', 'guide1@tour.com', 3343553, 1);

INSERT INTO `history`.`guide` (`idGuide`, `idTour`, `name`, `email`, `telephone`, `idaddr\_guide`) VALUES (8001, 1, 'john burgundy', 'guide2@tour.com', 3443553, 2);

COMMIT;

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

-- Data for table `history`.`tourist`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`tourist` (`idTourist`, `name`, `email`, `phone`) VALUES (9999, 'Hollande', 'hol@gmail.com', '9918292');

INSERT INTO `history`.`tourist` (`idTourist`, `name`, `email`, `phone`) VALUES (10000, 'Frankie', 'fr@inmail.com', '9928823');

COMMIT;

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

-- Data for table `history`.`client`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`client` (`idClient`, `name`, `email`, `phone`) VALUES (100, 'Ahmed', 'gm@gmail.com', 99001918);

INSERT INTO `history`.`client` (`idClient`, `name`, `email`, `phone`) VALUES (200, 'Karim', 'sn@gmail.com', 10092882);

COMMIT;

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

-- Data for table `history`.`research`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`research` (`idResearch`, `idClient`, `details`, `deadline`) VALUES (1, 100, 'family tree', '2017-12-12');

COMMIT;

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

-- Data for table `history`.`order`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`order` (`invoice`, `idTourist`, `idTour`, `date`) VALUES (1, 9999, 1, '2017-08-08');

INSERT INTO `history`.`order` (`invoice`, `idTourist`, `idTour`, `date`) VALUES (2, 10000, 2, '2017-09-08');

COMMIT;

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

-- Data for table `history`.`customer`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`customer` (`idCustomer`, `name`, `email`, `phone`) VALUES (1, 'Sherif', 'sh@yahoo.com', 1009282);

INSERT INTO `history`.`customer` (`idCustomer`, `name`, `email`, `phone`) VALUES (2, 'John', 'jh@hotmail.com', 9902992);

COMMIT;

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

-- Data for table `history`.`book`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`book` (`isbn`, `title`, `author`, `date`, `edition`, `pages`, `genre`) VALUES (100000, 'The Lost World', 'Jenkins', '1998-09-09', 1, 200, 'Sci-Fi');

INSERT INTO `history`.`book` (`isbn`, `title`, `author`, `date`, `edition`, `pages`, `genre`) VALUES (100001, 'The eternal sleep', 'Dewmore', '2001-09-09', 1, 111, 'Fantasy');

COMMIT;

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

-- Data for table `history`.`dispatch\_addr`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`dispatch\_addr` (`iddispatch\_addr`, `street`, `postcode`, `city`, `country`) VALUES (1, '77 glamory', '990029', 'Hull', 'UK');

INSERT INTO `history`.`dispatch\_addr` (`iddispatch\_addr`, `street`, `postcode`, `city`, `country`) VALUES (2, 'the glenmory', '992882', 'haley town', 'Sweden');

COMMIT;

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

-- Data for table `history`.`order\_book`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`order\_book` (`idCustomer`, `isbn`, `iddispatch\_addr`, `invoice`, `date`) VALUES (1, 100000, 1, 10, '2017-09-08');

INSERT INTO `history`.`order\_book` (`idCustomer`, `isbn`, `iddispatch\_addr`, `invoice`, `date`) VALUES (2, 100001, 2, 11, '2017-09-08');

COMMIT;

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

-- Data for table `history`.`addr\_subscr`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`addr\_subscr` (`idaddr\_subscr`, `street`, `postcode`, `city`, `country`) VALUES (1, 'marlington', '10001', 'Bays arena', 'Czech');

INSERT INTO `history`.`addr\_subscr` (`idaddr\_subscr`, `street`, `postcode`, `city`, `country`) VALUES (2, 'grey\'s hound', '10101', 'Crusiers Haven', 'Japan');

COMMIT;

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

-- Data for table `history`.`subscriber`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`subscriber` (`idSubscriber`, `name`, `email`, `phone`, `address`) VALUES (1010, 'Ahmedouv', 'ahd@book.com', 9918819, NULL);

INSERT INTO `history`.`subscriber` (`idSubscriber`, `name`, `email`, `phone`, `address`) VALUES (1011, 'John', 'jh@yahoo.com', 9988373, NULL);

COMMIT;

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

-- Data for table `history`.`magazine`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`magazine` (`idMagazine`, `issue`, `date`, `genre`, `pages`, `issue\_type`) VALUES (1, 'first', '2015-09-09', 'classics', '100', 'hardcopy');

COMMIT;

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

-- Data for table `history`.`subscription`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`subscription` (`Magazine\_idMagazine`, `subsciption`, `idSubscriber`, `date\_start`, `date\_end`) VALUES (1, 1, 1010, '2017-09-09', NULL);

COMMIT;

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

-- Data for table `history`.`trainee`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`trainee` (`idTrainee`, `name`, `phone`, `email`) VALUES (1, 'Jacob', 10029928, 'ja@yahoo.com');

INSERT INTO `history`.`trainee` (`idTrainee`, `name`, `phone`, `email`) VALUES (2, 'Andrew', 99288373, 'an@yahoo.com');

INSERT INTO `history`.`trainee` (`idTrainee`, `name`, `phone`, `email`) VALUES (3, 'Abdul', 9992839, 'gh@hotmail.com');

COMMIT;

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

-- Data for table `history`.`trainer`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`trainer` (`idTrainer`, `name`, `phone`, `email`, `expertise`, `status`) VALUES (1, 'Karim', 0029928, 'ka@inmail.com', 'boxing', 'active');

INSERT INTO `history`.`trainer` (`idTrainer`, `name`, `phone`, `email`, `expertise`, `status`) VALUES (2, 'John', 8829928, 'jh@inmail.com', 'weight lifting', 'active');

INSERT INTO `history`.`trainer` (`idTrainer`, `name`, `phone`, `email`, `expertise`, `status`) VALUES (3, 'Steve', 8827728, 'st@yahoo.com', 'running', 'active');

COMMIT;

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

-- Data for table `history`.`training`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`training` (`idTrainee`, `idTrainer`, `id\_training`, `start\_time`, `end\_time`, `location`) VALUES (1, 1, 1, '2018-09-09 09:30', '2018-09-09 12:30', 'hall');

INSERT INTO `history`.`training` (`idTrainee`, `idTrainer`, `id\_training`, `start\_time`, `end\_time`, `location`) VALUES (1, 2, 2, '2018-09-09 11:30', '2018-09-09 14:30', 'gym');

INSERT INTO `history`.`training` (`idTrainee`, `idTrainer`, `id\_training`, `start\_time`, `end\_time`, `location`) VALUES (2, 3, 3, '2018-09-09 13:30', '2018-09-09 14:30', 'field');

COMMIT;

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

-- Data for table `history`.`archive`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`archive` (`idArchive`, `name`, `age`, `fragility`, `detail`) VALUES (1245, 'papyrus', 2000, 'critical', 'old egyptian papyrus');

INSERT INTO `history`.`archive` (`idArchive`, `name`, `age`, `fragility`, `detail`) VALUES (1240, 'lost glyphs', 1500, 'moderate', 'old roman centurion icon');

COMMIT;

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

-- Data for table `history`.`location`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`location` (`idLocation`, `postcode`, `area`, `city`, `country`) VALUES (1, '90029', 'Frankfut', 'Frankfurt', 'Germany');

INSERT INTO `history`.`location` (`idLocation`, `postcode`, `area`, `city`, `country`) VALUES (2, '10000', 'Cairo', 'Cairo', 'Egypt');

COMMIT;

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

-- Data for table `history`.`archive\_Loc`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`archive\_Loc` (`idLocation`, `idArchive`, `date\_placed`, `date\_shift`) VALUES (1, 1245, '2010-05-30', NULL);

INSERT INTO `history`.`archive\_Loc` (`idLocation`, `idArchive`, `date\_placed`, `date\_shift`) VALUES (2, 1240, '2010-05-30', NULL);

COMMIT;

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

-- Data for table `history`.`addr\_tourist`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`addr\_tourist` (`idaddr\_tourist`, `street`, `postcode`, `city`, `country`, `idTourist`) VALUES (1, 'cheshire road', 'M119DD', 'Manchester', 'UK', 9999);

INSERT INTO `history`.`addr\_tourist` (`idaddr\_tourist`, `street`, `postcode`, `city`, `country`, `idTourist`) VALUES (2, 'Glaston', 'J11LSS', 'London', 'UK', 10000);

COMMIT;

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

-- Data for table `history`.`addr\_cust`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`addr\_cust` (`street`, `postcode`, `city`, `country`, `idCustomer`) VALUES ('7 erlington', '8089', 'Tibliski', 'Romania', 1);

INSERT INTO `history`.`addr\_cust` (`street`, `postcode`, `city`, `country`, `idCustomer`) VALUES ('24 bridge', '10090', 'Lagos', 'Nigeria', 2);

COMMIT;

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

-- Data for table `history`.`client\_addr`

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

START TRANSACTION;

USE `history`;

INSERT INTO `history`.`client\_addr` (`idClient`, `postcode`, `city`, `country`, `street`) VALUES (100, '40760', 'Bandar Shah', 'Indonesia', '77 humad');

INSERT INTO `history`.`client\_addr` (`idClient`, `postcode`, `city`, `country`, `street`) VALUES (200, '10098', 'Kellington', 'Sweden', '1st Street');

COMMIT;

## Output

mysql> source C:/Users/rahman/Dropbox/MYDOCS/UDOL/DB/Assgn 1/Conceptual Design/history.sql

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

Database changed

Query OK, 0 rows affected (0.25 sec)

Query OK, 0 rows affected (0.36 sec)

Query OK, 0 rows affected (0.23 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.28 sec)

Query OK, 0 rows affected (0.35 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.33 sec)

Query OK, 0 rows affected (0.28 sec)

Query OK, 0 rows affected (0.26 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.19 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.28 sec)

Query OK, 0 rows affected (0.31 sec)

Query OK, 0 rows affected (0.34 sec)

Query OK, 0 rows affected (0.28 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.28 sec)

Query OK, 0 rows affected (0.33 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.20 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.27 sec)

Query OK, 0 rows affected (0.27 sec)

Query OK, 0 rows affected (0.42 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.41 sec)

Query OK, 0 rows affected (0.29 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.23 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.23 sec)

Query OK, 0 rows affected (0.30 sec)

Query OK, 0 rows affected (0.27 sec)

Query OK, 0 rows affected (0.43 sec)

Query OK, 0 rows affected (0.27 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.25 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.31 sec)

Query OK, 0 rows affected (0.27 sec)

Query OK, 0 rows affected (0.23 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.27 sec)

Query OK, 0 rows affected (0.81 sec)

Query OK, 0 rows affected (0.44 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.22 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.27 sec)

Query OK, 0 rows affected (0.23 sec)

Query OK, 0 rows affected (0.33 sec)

Query OK, 0 rows affected (0.28 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.30 sec)

Query OK, 0 rows affected (0.36 sec)

Query OK, 0 rows affected (0.30 sec)

Query OK, 0 rows affected (0.25 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.20 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.34 sec)

Query OK, 0 rows affected (0.23 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.30 sec)

Query OK, 0 rows affected (0.38 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.78 sec)

Query OK, 0 rows affected (0.29 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.28 sec)

Query OK, 0 rows affected (0.16 sec)

Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.03 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.04 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.05 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.03 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.11 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.56 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.06 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.05 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.03 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.06 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.08 sec)

Query OK, 0 rows affected (0.04 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.03 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.05 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.06 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.06 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.05 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.08 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.06 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.05 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.47 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.06 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.06 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.05 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.09 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.05 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.03 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.06 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.02 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.05 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.05 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.03 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.08 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.88 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.08 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.05 sec)

Query OK, 0 rows affected (0.00 sec)

Database changed

Query OK, 1 row affected (0.03 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

mysql> alter table book

-> add cost float;

Query OK, 0 rows affected (1.11 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> update book set cost=100.5 where isbn=100000;

Query OK, 1 row affected (0.10 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> update book set cost=10.5 where isbn=100001;

Query OK, 1 row affected (0.05 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> alter table magazine add cost float;

Query OK, 0 rows affected (0.77 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> update magazine set cost=10.5 where idMagazine=1;

Query OK, 1 row affected (0.06 sec)

Rows matched: 1 Changed: 1 Warnings: 0

## Meta-Data

mysql> use history;

Database changed

mysql> select history;

ERROR 1054 (42S22): Unknown column 'history' in 'field list'

mysql> select database() history;

+---------+

| history |

+---------+

| history |

+---------+

1 row in set (0.00 sec)

mysql> show tables;

+-------------------+

| Tables\_in\_history |

+-------------------+

| addr\_cust |

| addr\_guide |

| addr\_subscr |

| addr\_tourist |

| archive |

| archive\_loc |

| book |

| client |

| client\_addr |

| customer |

| dispatch\_addr |

| func\_loc |

| function |

| guide |

| lecture |

| lecturer |

| loc\_site |

| location |

| magazine |

| order |

| order\_book |

| research |

| site |

| subscriber |

| subscription |

| tour |

| tourist |

| trainee |

| trainer |

| training |

+-------------------+

30 rows in set (0.00 sec)

mysql> SELECT TABLE\_NAME, COLUMN\_NAME, DATA\_TYPE, COLUMN\_TYPE, COLUMN\_COMMENT, ORDINAL\_POSITION FROM information\_schema.columns WHERE table\_schema = 'history' ORDER BY TABLE\_NAME, ORDINAL\_POSITION

-> ;

+---------------+---------------------------+-----------+---------------+----------------+------------------+

| TABLE\_NAME | COLUMN\_NAME | DATA\_TYPE | COLUMN\_TYPE | COLUMN\_COMMENT | ORDINAL\_POSITION |

+---------------+---------------------------+-----------+---------------+----------------+------------------+

| addr\_cust | street | varchar | varchar(45) | | 1 |

| addr\_cust | postcode | varchar | varchar(45) | | 2 |

| addr\_cust | city | varchar | varchar(45) | | 3 |

| addr\_cust | country | varchar | varchar(45) | | 4 |

| addr\_cust | idCustomer | int | int(11) | | 5 |

| addr\_cust | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| addr\_guide | idaddr\_guide | int | int(11) | | 1 |

| addr\_guide | street | varchar | varchar(45) | | 2 |

| addr\_guide | postcode | varchar | varchar(45) | | 3 |

| addr\_guide | city | varchar | varchar(45) | | 4 |

| addr\_guide | country | varchar | varchar(45) | | 5 |

| addr\_guide | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| addr\_subscr | idaddr\_subscr | int | int(11) | | 1 |

| addr\_subscr | street | varchar | varchar(45) | | 2 |

| addr\_subscr | postcode | varchar | varchar(45) | | 3 |

| addr\_subscr | city | varchar | varchar(45) | | 4 |

| addr\_subscr | country | varchar | varchar(45) | | 5 |

| addr\_subscr | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| addr\_tourist | idaddr\_tourist | int | int(11) | | 1 |

| addr\_tourist | street | varchar | varchar(45) | | 2 |

| addr\_tourist | postcode | varchar | varchar(45) | | 3 |

| addr\_tourist | city | varchar | varchar(45) | | 4 |

| addr\_tourist | country | varchar | varchar(45) | | 5 |

| addr\_tourist | idTourist | int | int(11) | | 6 |

| addr\_tourist | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 7 |

| archive | idArchive | int | int(11) | | 1 |

| archive | name | varchar | varchar(45) | | 2 |

| archive | age | float | float | | 3 |

| archive | fragility | varchar | varchar(45) | | 4 |

| archive | detail | varchar | varchar(45) | | 5 |

| archive | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| archive\_loc | idLocation | int | int(11) | | 1 |

| archive\_loc | idArchive | int | int(11) | | 2 |

| archive\_loc | date\_placed | date | date | | 3 |

| archive\_loc | date\_shift | date | date | | 4 |

| archive\_loc | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 5 |

| book | isbn | int | int(11) | | 1 |

| book | title | varchar | varchar(45) | | 2 |

| book | author | varchar | varchar(45) | | 3 |

| book | date | date | date | | 4 |

| book | edition | int | int(11) | | 5 |

| book | pages | int | int(11) | | 6 |

| book | genre | varchar | varchar(45) | | 7 |

| book | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 8 |

| client | idClient | int | int(11) | | 1 |

| client | name | varchar | varchar(45) | | 2 |

| client | email | varchar | varchar(45) | | 3 |

| client | phone | int | int(11) | | 4 |

| client | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 5 |

| client\_addr | idClient | int | int(11) | | 1 |

| client\_addr | postcode | varchar | varchar(45) | | 2 |

| client\_addr | city | varchar | varchar(45) | | 3 |

| client\_addr | country | varchar | varchar(45) | | 4 |

| client\_addr | street | varchar | varchar(45) | | 5 |

| client\_addr | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| customer | idCustomer | int | int(11) | | 1 |

| customer | name | varchar | varchar(45) | | 2 |

| customer | email | varchar | varchar(45) | | 3 |

| customer | phone | int | int(11) | | 4 |

| customer | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 5 |

| dispatch\_addr | iddispatch\_addr | int | int(11) | | 1 |

| dispatch\_addr | street | varchar | varchar(45) | | 2 |

| dispatch\_addr | postcode | varchar | varchar(45) | | 3 |

| dispatch\_addr | city | varchar | varchar(45) | | 4 |

| dispatch\_addr | country | varchar | varchar(45) | | 5 |

| dispatch\_addr | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| function | idFunction | int | int(11) | | 1 |

| function | name | varchar | varchar(45) | | 2 |

| function | email | varchar | varchar(45) | | 3 |

| function | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 4 |

| func\_loc | idFunction | int | int(11) | | 1 |

| func\_loc | street | varchar | varchar(45) | | 2 |

| func\_loc | postcode | varchar | varchar(45) | | 3 |

| func\_loc | city | varchar | varchar(45) | | 4 |

| func\_loc | country | varchar | varchar(45) | | 5 |

| func\_loc | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| guide | idGuide | int | int(11) | | 1 |

| guide | idTour | int | int(11) | | 2 |

| guide | name | varchar | varchar(45) | | 3 |

| guide | email | varchar | varchar(40) | | 4 |

| guide | telephone | int | int(11) | | 5 |

| guide | idaddr\_guide | int | int(11) | | 6 |

| guide | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 7 |

| lecture | idLecture | int | int(11) | | 1 |

| lecture | idLecturer | int | int(11) | | 2 |

| lecture | topic | varchar | varchar(45) | | 3 |

| lecture | duration | float | float | | 4 |

| lecture | date | date | date | | 5 |

| lecture | idFunction | int | int(11) | | 6 |

| lecture | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 7 |

| lecturer | idLecturer | int | int(11) | | 1 |

| lecturer | idFunction | int | int(11) | | 2 |

| lecturer | name | varchar | varchar(45) | | 3 |

| lecturer | email | varchar | varchar(45) | | 4 |

| lecturer | phone | int | int(11) | | 5 |

| lecturer | expertise | varchar | varchar(45) | | 6 |

| lecturer | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 7 |

| location | idLocation | int | int(11) | | 1 |

| location | postcode | varchar | varchar(45) | | 2 |

| location | area | varchar | varchar(45) | | 3 |

| location | city | varchar | varchar(45) | | 4 |

| location | country | varchar | varchar(45) | | 5 |

| location | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| loc\_site | idloc\_site | int | int(11) | | 1 |

| loc\_site | street | varchar | varchar(45) | | 2 |

| loc\_site | postcode | varchar | varchar(45) | | 3 |

| loc\_site | city | varchar | varchar(45) | | 4 |

| loc\_site | country | varchar | varchar(45) | | 5 |

| loc\_site | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| magazine | idMagazine | int | int(11) | | 1 |

| magazine | issue | varchar | varchar(45) | | 2 |

| magazine | date | date | date | | 3 |

| magazine | genre | varchar | varchar(45) | | 4 |

| magazine | pages | varchar | varchar(45) | | 5 |

| magazine | issue\_type | varchar | varchar(45) | | 6 |

| magazine | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 7 |

| order | invoice | int | int(11) | | 1 |

| order | idTourist | int | int(11) | | 2 |

| order | idTour | int | int(11) | | 3 |

| order | date | date | date | | 4 |

| order | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 5 |

| order\_book | idCustomer | int | int(11) | | 1 |

| order\_book | isbn | int | int(11) | | 2 |

| order\_book | iddispatch\_addr | int | int(11) | | 3 |

| order\_book | invoice | int | int(11) | | 4 |

| order\_book | date | date | date | | 5 |

| order\_book | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| research | idResearch | int | int(11) | | 1 |

| research | idClient | int | int(11) | | 2 |

| research | details | varchar | varchar(500) | | 3 |

| research | deadline | date | date | | 4 |

| research | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 5 |

| site | idSite | int | int(11) | | 1 |

| site | history | varchar | varchar(1000) | | 2 |

| site | condition | varchar | varchar(45) | | 3 |

| site | type | varchar | varchar(45) | | 4 |

| site | idloc\_site | int | int(11) | | 5 |

| site | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| subscriber | idSubscriber | int | int(11) | | 1 |

| subscriber | name | varchar | varchar(40) | | 2 |

| subscriber | email | varchar | varchar(45) | | 3 |

| subscriber | phone | int | int(11) | | 4 |

| subscriber | address | int | int(11) | | 5 |

| subscriber | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| subscription | Magazine\_idMagazine | int | int(11) | | 1 |

| subscription | subsciption | int | int(11) | | 2 |

| subscription | idSubscriber | int | int(11) | | 3 |

| subscription | date\_start | date | date | | 4 |

| subscription | date\_end | date | date | | 5 |

| subscription | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| tour | idTour | int | int(11) | | 1 |

| tour | idSite | int | int(11) | | 2 |

| tour | name | varchar | varchar(45) | | 3 |

| tour | description | varchar | varchar(200) | | 4 |

| tour | comment | varchar | varchar(400) | | 5 |

| tour | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 6 |

| tourist | idTourist | int | int(11) | | 1 |

| tourist | name | varchar | varchar(45) | | 2 |

| tourist | email | varchar | varchar(45) | | 3 |

| tourist | phone | varchar | varchar(45) | | 4 |

| tourist | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 5 |

| trainee | idTrainee | int | int(11) | | 1 |

| trainee | name | varchar | varchar(45) | | 2 |

| trainee | phone | int | int(11) | | 3 |

| trainee | email | varchar | varchar(45) | | 4 |

| trainee | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 5 |

| trainer | idTrainer | int | int(11) | | 1 |

| trainer | name | varchar | varchar(45) | | 2 |

| trainer | phone | int | int(11) | | 3 |

| trainer | email | varchar | varchar(45) | | 4 |

| trainer | expertise | varchar | varchar(45) | | 5 |

| trainer | status | varchar | varchar(45) | | 6 |

| trainer | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 7 |

| training | idTrainee | int | int(11) | | 1 |

| training | idTrainer | int | int(11) | | 2 |

| training | id\_training | int | int(11) | | 3 |

| training | start\_time | datetime | datetime | | 4 |

| training | end\_time | datetime | datetime | | 5 |

| training | location | varchar | varchar(145) | | 6 |

| training | Mohammad\_Rahman\_100438290 | varchar | varchar(45) | | 7 |

+---------------+---------------------------+-----------+---------------+----------------+------------------+

180 rows in set (0.03 sec)

mysql> select \*

-> from information\_schema.table\_constraints

-> where constraint\_schema = 'history';

+--------------------+-------------------+------------------------------+--------------+---------------+-----------------+

| CONSTRAINT\_CATALOG | CONSTRAINT\_SCHEMA | CONSTRAINT\_NAME | TABLE\_SCHEMA | TABLE\_NAME | CONSTRAINT\_TYPE |

+--------------------+-------------------+------------------------------+--------------+---------------+-----------------+

| def | history | PRIMARY | history | addr\_cust | PRIMARY KEY |

| def | history | fk\_addr\_cust\_customer1 | history | addr\_cust | FOREIGN KEY |

| def | history | PRIMARY | history | addr\_guide | PRIMARY KEY |

| def | history | PRIMARY | history | addr\_subscr | PRIMARY KEY |

| def | history | PRIMARY | history | addr\_tourist | PRIMARY KEY |

| def | history | fk\_addr\_tourist\_tourist1 | history | addr\_tourist | FOREIGN KEY |

| def | history | PRIMARY | history | archive | PRIMARY KEY |

| def | history | PRIMARY | history | archive\_loc | PRIMARY KEY |

| def | history | fk\_Archive\_Loc\_Archive1 | history | archive\_loc | FOREIGN KEY |

| def | history | fk\_Archive\_Loc\_Location1 | history | archive\_loc | FOREIGN KEY |

| def | history | PRIMARY | history | book | PRIMARY KEY |

| def | history | PRIMARY | history | client | PRIMARY KEY |

| def | history | PRIMARY | history | client\_addr | PRIMARY KEY |

| def | history | fk\_client\_addr\_Client1 | history | client\_addr | FOREIGN KEY |

| def | history | PRIMARY | history | customer | PRIMARY KEY |

| def | history | PRIMARY | history | dispatch\_addr | PRIMARY KEY |

| def | history | PRIMARY | history | func\_loc | PRIMARY KEY |

| def | history | fk\_func\_loc\_Function1 | history | func\_loc | FOREIGN KEY |

| def | history | PRIMARY | history | function | PRIMARY KEY |

| def | history | PRIMARY | history | guide | PRIMARY KEY |

| def | history | fk\_Guide\_Tour | history | guide | FOREIGN KEY |

| def | history | fk\_guide\_addr\_guide1 | history | guide | FOREIGN KEY |

| def | history | PRIMARY | history | lecture | PRIMARY KEY |

| def | history | fk\_Lecture\_Function1 | history | lecture | FOREIGN KEY |

| def | history | fk\_Lecture\_Lecturer1 | history | lecture | FOREIGN KEY |

| def | history | PRIMARY | history | lecturer | PRIMARY KEY |

| def | history | fk\_Lecturer\_Function1 | history | lecturer | FOREIGN KEY |

| def | history | PRIMARY | history | loc\_site | PRIMARY KEY |

| def | history | PRIMARY | history | location | PRIMARY KEY |

| def | history | PRIMARY | history | magazine | PRIMARY KEY |

| def | history | PRIMARY | history | order | PRIMARY KEY |

| def | history | fk\_Order\_Tour1 | history | order | FOREIGN KEY |

| def | history | fk\_Order\_Tourist1 | history | order | FOREIGN KEY |

| def | history | PRIMARY | history | order\_book | PRIMARY KEY |

| def | history | fk\_Order\_Book\_Book1 | history | order\_book | FOREIGN KEY |

| def | history | fk\_Order\_Book\_Customer1 | history | order\_book | FOREIGN KEY |

| def | history | fk\_Order\_Book\_dispatch\_addr1 | history | order\_book | FOREIGN KEY |

| def | history | PRIMARY | history | research | PRIMARY KEY |

| def | history | fk\_Research\_Client1 | history | research | FOREIGN KEY |

| def | history | PRIMARY | history | site | PRIMARY KEY |

| def | history | fk\_Site\_loc\_site1 | history | site | FOREIGN KEY |

| def | history | PRIMARY | history | subscriber | PRIMARY KEY |

| def | history | fk\_Subscriber\_addr\_subscr1 | history | subscriber | FOREIGN KEY |

| def | history | PRIMARY | history | subscription | PRIMARY KEY |

| def | history | fk\_Subscription\_Magazine1 | history | subscription | FOREIGN KEY |

| def | history | fk\_Subscription\_Subscriber1 | history | subscription | FOREIGN KEY |

| def | history | PRIMARY | history | tour | PRIMARY KEY |

| def | history | fk\_Tour\_Site1 | history | tour | FOREIGN KEY |

| def | history | PRIMARY | history | tourist | PRIMARY KEY |

| def | history | PRIMARY | history | trainee | PRIMARY KEY |

| def | history | PRIMARY | history | trainer | PRIMARY KEY |

| def | history | PRIMARY | history | training | PRIMARY KEY |

| def | history | fk\_Training\_Trainee1 | history | training | FOREIGN KEY |

| def | history | fk\_Training\_Trainer1 | history | training | FOREIGN KEY |

+--------------------+-------------------+------------------------------+--------------+---------------+-----------------+

54 rows in set (0.15 sec)

# Queries

mysql> select trainer.mohammad\_rahman\_100438290, book.mohammad\_rahman\_100438290 from trainer, book;

+---------------------------+---------------------------+

| mohammad\_rahman\_100438290 | mohammad\_rahman\_100438290 |

+---------------------------+---------------------------+

| NULL | NULL |

| NULL | NULL |

| NULL | NULL |

| NULL | NULL |

| NULL | NULL |

| NULL | NULL |

+---------------------------+---------------------------+

6 rows in set (0.00 sec)

mysql>

mysql> select order\_book.isbn, customer.name from order\_book INNER JOIN customer ON order\_book.idCustomer=customer.idCustomer;

+------------+------+

| isbn | name |

+------------+------+

| 1002992839 | John |

+------------+------+

1 row in set (0.00 sec)

mysql> select name from trainer union select name from trainee;

+--------+

| name |

+--------+

| Karim |

| John |

| Steve |

| Jacob |

| Andrew |

| Abdul |

+--------+

6 rows in set (0.00 sec)

#MINUS

mysql> select city from addr\_guide left join addr\_subscr using (city);

+---------+

| city |

+---------+

| Lahore |

| Chelsea |

+---------+

2 rows in set (0.00 sec)

#INTERSECT

mysql> select city from addr\_guide where addr\_guide.idaddr\_guide in (select city from addr\_subscr) ;

Empty set, 4 warnings (0.00 sec)

mysql> select name from trainer group by name;

+-------+

| name |

+-------+

| John |

| Karim |

| Steve |

+-------+

3 rows in set (0.00 sec)

mysql> select name from trainee order by name;

+--------+

| name |

+--------+

| Abdul |

| Andrew |

| Jacob |

+--------+

3 rows in set (0.00 sec)

mysql> select min(cost) from book;

+-----------+

| min(cost) |

+-----------+

| 10.5 |

+-----------+

1 row in set (0.00 sec)

mysql> select max(cost) from book;

+-----------+

| max(cost) |

+-----------+

| 100.5 |

+-----------+

1 row in set (0.00 sec)

mysql> select avg(cost) from book;

+-----------+

| avg(cost) |

+-----------+

| 55.5 |

+-----------+

1 row in set (0.00 sec)

mysql> select sum(cost) from book;

+-----------+

| sum(cost) |

+-----------+

| 111 |

+-----------+

1 row in set (0.00 sec)

mysql> select count(idSite) as No\_of\_Sites from site;

+-------------+

| No\_of\_Sites |

+-------------+

| 3 |

+-------------+

1 row in set (0.02 sec)

mysql> select count(idSite) as No\_of\_each\_Sites, type from site group by type;

+------------------+--------+

| No\_of\_each\_Sites | type |

+------------------+--------+

| 1 | castle |

| 1 | desert |

| 1 | field |

+------------------+--------+

3 rows in set (0.00 sec)

mysql> select t.idTour from tour as t ;

+--------+

| idTour |

+--------+

| 1 |

| 2 |

+--------+

2 rows in set (0.10 sec)

mysql> ALTER TABLE book CHANGE `title` `name` varchar(40);

Query OK, 2 rows affected (2.00 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> select name from book;

+-------------------+

| name |

+-------------------+

| The Lost World |

| The eternal sleep |

+-------------------+

2 rows in set (0.00 sec)

mysql> select \* from book where cost>(select cost from book where isbn=100001);

+--------+----------------+---------+------------+---------+-------+--------+-------+

| isbn | name | author | date | edition | pages | genre | cost |

+--------+----------------+---------+------------+---------+-------+--------+-------+

| 100000 | The Lost World | Jenkins | 1998-09-09 | 1 | 200 | Sci-Fi | 100.5 |

+--------+----------------+---------+------------+---------+-------+--------+-------+

1 row in set (0.00 sec)

+-----------+-------+-------+---------------+-----------+--------+---------------------------+

| idTrainer | name | phone | email | expertise | status | Mohammad\_Rahman\_100438290 |

+-----------+-------+-------+---------------+-----------+--------+---------------------------+

| 1 | Karim | 29928 | ka@inmail.com | boxing | active | NULL |

+-----------+-------+-------+---------------+-----------+--------+---------------------------+

1 row in set (0.00 sec)

# Optimization

mysql> CREATE INDEX index\_exp ON `trainer`(`expertise`);

Query OK, 0 rows affected (0.42 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE INDEX index\_name ON `trainer`(`name`);

Query OK, 0 rows affected (0.35 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE INDEX index\_idTour ON `tour`(`idTour`);

Query OK, 0 rows affected (0.31 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE INDEX index\_idTourist ON `addr\_tourist`(`idTourist`);

Query OK, 0 rows affected, 1 warning (0.28 sec)

Records: 0 Duplicates: 0 Warnings: 1

mysql> CREATE INDEX index\_book ON `book`(`title`);

Query OK, 0 rows affected (0.42 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> select (count(distinct(name)))/ (count(name)) from trainer;

+----------------------------------------+

| (count(distinct(name)))/ (count(name)) |

+----------------------------------------+

| 1.0000 |

+----------------------------------------+

1 row in set (0.00 sec)

mysql> select (count(distinct(title)))/ (count(title)) from book;

+------------------------------------------+

| (count(distinct(title)))/ (count(title)) |

+------------------------------------------+

| 1.0000 |

+------------------------------------------+

1 row in set (0.00 sec)

# Security

mysql> create user 'db\_local'@'localhost' identified by 'local';

Query OK, 0 rows affected (0.00 sec)

mysql> create user 'db\_remote'@'localhost' identified by 'remote';

Query OK, 0 rows affected (0.00 sec)

mysql> create user 'db\_secure'@'localhost' identified by 'secure';

Query OK, 0 rows affected (0.00 sec)d (0.02 sec)

mysql> select host, user from mysql.user;

+-----------+---------------+

| host | user |

+-----------+---------------+

| localhost | db\_local |

| localhost | db\_remote |

| localhost | db\_secure |

| localhost | mysql.session |

| localhost | mysql.sys |

| localhost | root |

+-----------+---------------+

6 rows in set (0.00 sec)

mysql> grant select on history.\* to 'db\_remote'@'localhost';

Query OK, 0 rows affected (0.06 sec)

mysql> grant all on history.\* to 'db\_secure'@'localhost';

Query OK, 0 rows affected (0.00 sec)

mysql> grant insert on history.\* to 'db\_local'@'localhost';

Query OK, 0 rows affected (0.00 sec)

mysql> create view b\_o as select invoice, date from order\_book;

Query OK, 0 rows affected (0.05 sec)

mysql> create view b as select author, title, cost from book;

Query OK, 0 rows affected (0.08 sec)

mysql>create view ordered\_book as select invoice, order\_book.date, order\_book.idCustomer, title from order\_book, book where order\_book.isbn=book.isbn;

Query OK, 0 rows affected (0.07 sec)

mysql> select Db, User, select\_priv, insert\_priv, update\_priv, delete\_priv, create\_priv from mysql.db;;

+--------------------+---------------+-------------+-------------+-------------+-------------+-------------+

| Db | User | select\_priv | insert\_priv | update\_priv | delete\_priv | create\_priv |

+--------------------+---------------+-------------+-------------+-------------+-------------+-------------+

| performance\_schema | mysql.session | Y | N | N | N | N |

| sys | mysql.sys | N | N | N | N | N |

| history | db\_remote | Y | N | N | N | N |

| history | db\_secure | Y | Y | Y | Y | Y |

| history | db\_local | N | Y | N | N | N |

+--------------------+---------------+-------------+-------------+-------------+-------------+-------------+

5 rows in set (0.00 sec)

mysql> select \* from ordered\_book;

+---------+------------+------------+-------------------+

| invoice | date | idCustomer | title |

+---------+------------+------------+-------------------+

| 10 | 2017-09-08 | 1 | The Lost World |

| 11 | 2017-09-08 | 2 | The eternal sleep |

+---------+------------+------------+-------------------+

2 rows in set (0.00 sec)

mysql> select \* from b\_o;

+---------+------------+

| invoice | date |

+---------+------------+

| 10 | 2017-09-08 |

| 11 | 2017-09-08 |

+---------+------------+

2 rows in set (0.05 sec)

mysql> select \* from b;

+---------+-------------------+-------+

| author | title | cost |

+---------+-------------------+-------+

| Jenkins | The Lost World | 100.5 |

| Dewmore | The eternal sleep | 10.5 |

+---------+-------------------+-------+

2 rows in set (0.00 sec)

mysql> grant select on history.b\_o to 'db\_local'@'localhost';

Query OK, 0 rows affected (0.00 sec)

mysql> grant select on history.b to 'db\_local'@'localhost';

Query OK, 0 rows affected (0.00 sec)

mysql> grant select on history.ordered\_book to 'db\_local'@'localhost';

Query OK, 0 rows affected (0.00 sec)

# Web Interface For Trainer Table

<?php

include ('hist\_con.php');

echo '<html>

<style>

input[type=text], input[type=email], select {

width: 25%;

padding: 7px 7px;

margin: 3px 0;

display: block;

border: 1px solid #ccc;

border-radius: 4px;

box-sizing: border-box;

}

input[type=submit] {

width: 25%;

background-color: #4CAF50;

color: white;

padding: 7px 7px;

margin: 8px 0;

border: none;

border-radius: 4px;

cursor: pointer;

}

input[type=submit]:hover {

background-color: #45a049;

}

div {

border-radius: 5px;

background-color: #f2f2f2;

padding: 20px;

}

</style>

<body></body>

</html>';

if (isset($\_POST["delete"])){

foreach($\_POST['data'] as $selected){

//DELETE

$user\_query = " DELETE FROM trainer WHERE idTrainer='{$selected}' ";

$run\_query = mysqli\_query($con,$user\_query);

if($run\_query) {

echo 'Success';

}

else{

echo "delete failed".mysqli\_error($con);

}

}}

if (isset($\_POST["update"])){

$id=$\_POST['id\_trainer'];

$name=$\_POST['name'];

$phone=$\_POST['phone'];

$email=$\_POST['email'];

$expertise=$\_POST['expertise'];

$status=$\_POST['status'];

//DELETE

$user\_query= " UPDATE trainer SET name = '{$name}', phone='{$phone}', email='{$email}', expertise='{$expertise}', status='{$status}' WHERE idTrainer = '{$id}' ";

;

$run\_query = mysqli\_query($con,$user\_query);

if($run\_query) {

echo 'Success';

}

else{

echo "update failed".mysqli\_error($con);

}

}

$user\_query="select \* from trainer";

$run\_query=mysqli\_query($con,$user\_query);

//INSERT

if (isset($\_POST["insert"]) ){

$id=$\_POST['id\_trainer'];

$name=$\_POST['name'];

$phone=$\_POST['phone'];

$email=$\_POST['email'];

$expertise=$\_POST['expertise'];

$status=$\_POST['status'];

$query = " INSERT INTO trainer VALUES ( '{$id}', '{$name}','{$phone}','{$email}','{$expertise}','{$status}') ";

$result = mysqli\_query($con, $query);

if( $result )

{

echo 'Success';

}

else

{

echo 'Query Failed'.mysqli\_error($con);

}

}

if(mysqli\_num\_rows($run\_query)>0)

{

echo' <table border="4" class=inpagetable>

<thead>Trainer

<tr>

<th>id</th>

<th>Name</th>

<th>Phone</th>

<th>Email</th>

<th>Expertise</th>

<th>Status</th>

</tr>

</thead>';

echo '<form action="#" method="post">';

while( $row = mysqli\_fetch\_assoc( $run\_query)){

$val= $row['idTrainer'];

echo "<tbody><tr><td rowspan=5><input type='checkbox' name='data[]' value = '$val'/>{$row['idTrainer']}</td></tr><tr><td>{$row['name']}</td><td>{$row['phone']}</td><td>{$row['email']}</td><td>{$row['expertise']}</td><td>{$row['status']}</td></tr></tbody>\n";

}

echo '</table>';

echo '<input type="submit" name="delete" value="Delete"/>';

echo '</form>';

echo '<form id="form1" name="form1" method="post" action="">

<label for="idtrainer">ID</label><input type="text" name="id\_trainer" id="id\_trainer" />

<br class="clear" />

<label for="name">Name</label><input type="text" name="name" id="name" />

<br class="clear" />

<label for="phone">Phone</label><input type="text" name="phone" id="phone" />

<br class="clear" />

<label for="email">Email</label><input type="email" name="email" id="email" />

<br class="clear" />

<label for="expertise">Expertise</label><input type="text" name="expertise" id="expertise" />

<br class="clear" />

<label for="status">Status</label><input type="text" name="status" id="status" />

<br class="clear" />

<input type="submit" name="insert" value="Insert Data"/>;

<input type="submit" name="update" value="Update Data"/>;

</form>';

}

else {echo"<script>alert('error retrieving from database! Contact admin!')</script>";

}

echo '<br/>';

?>

## CRUD operations in order:

* Updated
* Update
* Form Loaded
* Insert
* Inserted
* Deleted
* Delete

