Conceptual Modeling and Database

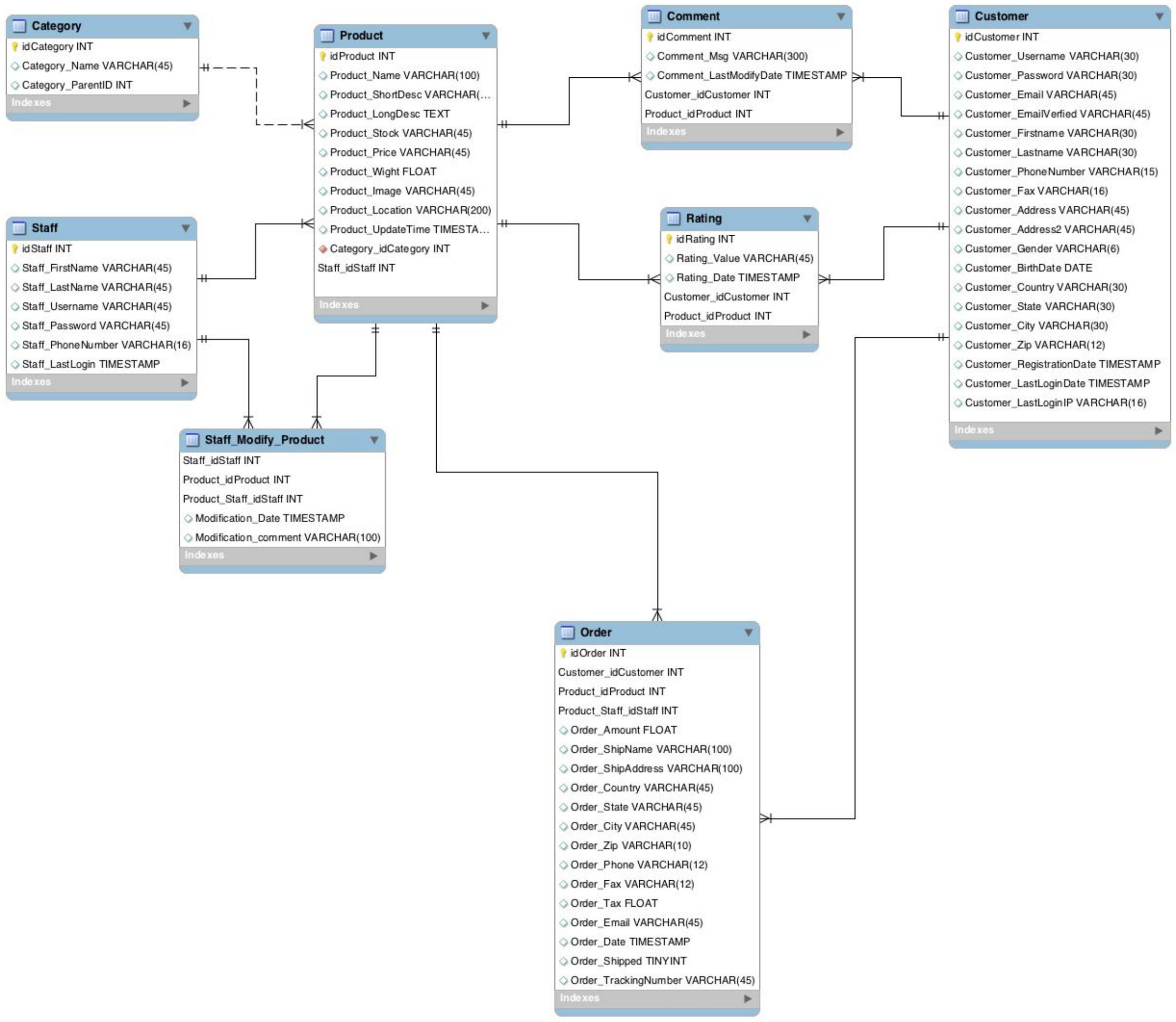
Practical work
Online Shopping web-site

1. Introduction

This document contains all data related to practical work of Conceptual Modeling and Database course in TAMK. The subject is about design, implement and analyse an online shopping store. In first step we, ER-modelling by MySQL workbench will be described and tables and attributes will be checked. In second step, SQL script in order to create database will be show and then in next part the SQL queries in order to fetch data from database or modify them will be inspected. In final section details related to a RESTful-interface including PHP-programming and JSON will be examined.

2. Database design

The online shopping store include the process all steps from visiting web-site by a customer to register and pay for order and shipping to customer's address. It is possible to consider relation between product supplier and store as a part of database, but in this document this part was ignored. The shopping web-site database design would be as below which further in detail will be explained.


Category
idCategory INT
Category_Name VARCHAR(45)
Category_ParentID INT
Indexes
Product
idProduct INT
Product_Name VARCHAR(100)
Product_ShortDesc VARCHAR(…
Product_LongDesc TEXT
Product_Stock VARCHAR(45)
Product_Price VARCHAR(45)
Product_Wight FLOAT
Product_Image VARCHAR(45)
Product_Location VARCHAR(200)
Product_UpdateTime TIMESTA…
Category_idCategory INT
Staff_idStaff INT
Indexes
Comment
idComment INT
Comment_Msg VARCHAR(300)
Comment_LastModifyDate TIMESTAMP
Customer_idCustomer INT
Product_idProduct INT
Indexes
Customer
idCustomer INT
Customer_Username VARCHAR(30)
Customer_Password VARCHAR(30)
Customer_Email VARCHAR(45)
Customer_EmailVerfied VARCHAR(45)
Customer_Firstname VARCHAR(30)
Customer_Lastname VARCHAR(30)
Customer_PhoneNumber VARCHAR(15)
Customer_Fax VARCHAR(16)
Customer_Address VARCHAR(45)
Customer_Address2 VARCHAR(45)
Customer_Gender VARCHAR(6)
Customer_BirthDate DATE
Customer_Country VARCHAR(30)
Customer_State VARCHAR(30)
Customer_City VARCHAR(30)
Customer_Zip VARCHAR(12)
Customer_RegistrationDate TIMESTAMP
Customer_LastLoginDate TIMESTAMP
Customer_LastLoginIP VARCHAR(16)
Indexes
Staff
idStaff INT
Staff_FirstName VARCHAR(45)
Staff_LastName VARCHAR(45)
Staff_Username VARCHAR(45)
Staff_Password VARCHAR(45)
Staff_PhoneNumber VARCHAR(16)
Staff_LastLogin TIMESTAMP
Indexes
Rating
idRating INT
Rating_Value VARCHAR(45)
Rating_Date TIMESTAMP
Customer_idCustomer INT
Product_idProduct INT
Indexes
Staff_Modify_Product
Staff_idStaff INT
Product_idProduct INT
Product_Staff_idStaff INT
Modification_Date TIMESTAMP
Modification_comment VARCHAR(100)
Indexes
Order
idOrder INT
Customer_idCustomer INT
Product_idProduct INT
Product_Staff_idStaff INT
Order_Amount FLOAT
Order_ShipName VARCHAR(100)
Order_ShipAddress VARCHAR(100)
Order_Country VARCHAR(45)
Order_State VARCHAR(45)
Order_City VARCHAR(45)
Order_Zip VARCHAR(10)
Order_Phone VARCHAR(12)
Order_Fax VARCHAR(12)
Order_Tax FLOAT
Order_Email VARCHAR(45)
Order_Date TIMESTAMP
Order_Shipped TINYINT
Order_TrackingNumber VARCHAR(45)
Indexes

As it is shown through EER diagram, in an online store we have these entities:

2.1. Customer

Customer table includes these attributes:

- `idCustomer` INT NOT NULL,
- `Customer_Username` VARCHAR(30) NULL COMMENT ' ',
- `Customer_Password` VARCHAR(30) NULL,
- `Customer_Email` VARCHAR(45) NULL,
- `Customer_EmailVerfied` VARCHAR(45) NULL,
- `Customer_Firstname` VARCHAR(30) NULL,

- `Customer_Lastname` VARCHAR(30) NULL,
- `Customer_PhoneNumber` VARCHAR(15) NULL,
- `Customer_Fax` VARCHAR(16) NULL,
- `Customer_Address` VARCHAR(45) NULL,
- `Customer_Address2` VARCHAR(45) NULL,
- `Customer_Gender` VARCHAR(6) NULL,
- `Customer_BirthDate` DATE NULL,
- `Customer_Country` VARCHAR(30) NULL,
- `Customer_State` VARCHAR(30) NULL,
- `Customer_City` VARCHAR(30) NULL,
- `Customer_Zip` VARCHAR(12) NULL,
- `Customer_RegistrationDate` TIMESTAMP NULL,
- `Customer_LastLoginDate` TIMESTAMP NULL,
- `Customer_LastLoginIP` VARCHAR(16) NULL,

2.2. Product

Product table includes attributes below:

- `idProduct` INT NOT NULL,
- `Product_Name` VARCHAR(100) NULL,
- `Product_ShortDesc` VARCHAR(200) NULL,
- `Product_LongDesc` TEXT NULL,
- `Product_Stock` VARCHAR(45) NULL,
- `Product_Price` VARCHAR(45) NULL,
- `Product_Wight` FLOAT NULL,
- `Product_Image` VARCHAR(45) NULL,
- `Product_Location` VARCHAR(200) NULL,
- `Product_UpdateTime` TIMESTAMP NULL,

2.3. Category

Category table has these attributes:

- `idCategory` INT NOT NULL,

- `Category_Name` VARCHAR(45) NULL,
- `Category_parentID` INT NOT NULL DEFAULT 0,

2.4. Staff

Staff table has these attributes:

- `idStaff` INT NOT NULL,
- `Staff_FirstName` VARCHAR(45) NULL,
- `Staff_LastName` VARCHAR(45) NULL,
- `Staff_Username` VARCHAR(45) NULL,
- `Staff_Password` VARCHAR(45) NULL,
- `Staff_PhoneNumber` VARCHAR(16) NULL,
- `Staff_LastLogin` TIMESTAMP NULL,

2.5. Order

Order table has these attributes:

- `idOrder` INT NOT NULL,
- `Order_Amount` FLOAT NULL,
- `Order_ShipName` VARCHAR(100) NULL,
- `Order_ShipAddress` VARCHAR(100) NULL,
- `Order_Country` VARCHAR(45) NULL,
- `Order_State` VARCHAR(45) NULL,
- `Order_City` VARCHAR(45) NULL,
- `Order_Zip` VARCHAR(10) NULL,
- `Order_Phone` VARCHAR(12) NULL,
- `Order_Fax` VARCHAR(12) NULL,
- `Order_Tax` FLOAT NULL,
- `Order_Email` VARCHAR(45) NULL,
- `Order_Date` TIMESTAMP NULL,
- `Order_Shipped` TINYINT NULL,
- `Order_TrackingNumber` VARCHAR(45) NULL,

2.6. Comment

Comment includes these attributes:

- ❖ `` `idComment` `` INT NOT NULL,
- ❖ `` `Comment_Msg` `` VARCHAR(300) NULL,
- ❖ `` `Comment_LastModifyDate` `` TIMESTAMP NULL,

2.7. Rating

Rating table has these attributes:

- ❖ `` `idRating` `` INT NOT NULL,
- ❖ `` `Rating_Value` `` VARCHAR(45) NULL,
- ❖ `` `Rating_Date` `` TIMESTAMP NULL,

2.8. Modification logs

3. Create tables

In order create tables from designed EER diagram, by forward engineering SQL script could be generated, which the result would be same as below:

```
-- MySQL Script generated by MySQL Workbench

-- Tue Aug 30 21:42:43 2016

-- Model: New Model    Version: 1.0

-- MySQL Workbench Forward Engineering


SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0;

SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0;

SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='TRADITIONAL,ALLOW_INVALID_DATES';
```

```
-- -----------------------------------------------------

-- Schema mydb

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



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

-- Schema mydb

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

CREATE SCHEMA IF NOT EXISTS `mydb` DEFAULT CHARACTER SET utf8 COLLATE utf8_general_ci ;

USE `mydb` ;



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

-- Table `mydb`.`Category`

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

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

  `idCategory` INT NOT NULL,

  `Category_Name` VARCHAR(45) NULL,

 `Category_parentID` INT NOT NULL DEFAULT 0,

 PRIMARY KEY (`idCategory`))

ENGINE = InnoDB;




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

-- Table `mydb`.`Staff`

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

CREATE TABLE IF NOT EXISTS `mydb`.`Staff` (
  `idStaff` INT NOT NULL,

  `Staff_FirstName` VARCHAR(45) NULL,

  `Staff_LastName` VARCHAR(45) NULL,

  `Staff_Username` VARCHAR(45) NULL,

  `Staff_Password` VARCHAR(45) NULL,

  `Staff_PhoneNumber` VARCHAR(16) NULL,

  `Staff_LastLogin` TIMESTAMP NULL,

  PRIMARY KEY (`idStaff`))

ENGINE = InnoDB;



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

-- Table `mydb`.`Product`

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

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

  `idProduct` INT NOT NULL,

  `Product_Name` VARCHAR(100) NULL,

  `Product_ShortDesc` VARCHAR(200) NULL,

  `Product_LongDesc` TEXT NULL,

  `Product_Stock` VARCHAR(45) NULL,

  `Product_Price` VARCHAR(45) NULL,

  `Product_Wight` FLOAT NULL,

  `Product_Image` VARCHAR(45) NULL,

  `Product_Location` VARCHAR(200) NULL,

  `Product_UpdateTime` TIMESTAMP NULL,

  `Category_idCategory` INT NOT NULL,
  `Staff_idStaff` INT NOT NULL,
  PRIMARY KEY (`idProduct`, `Staff_idStaff`),
  INDEX `fk_Product_Category1_idx` (`Category_idCategory` ASC),
  INDEX `fk_Product_Staff1_idx` (`Staff_idStaff` ASC),
  CONSTRAINT `fk_Product_Category1`
    FOREIGN KEY (`Category_idCategory`)
    REFERENCES `mydb`.`Category` (`idCategory`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Product_Staff1`
    FOREIGN KEY (`Staff_idStaff`)
    REFERENCES `mydb`.`Staff` (`idStaff`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;



-- -----------------------------------------------------
-- Table `mydb`.`Customer`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `mydb`.`Customer` (
  `idCustomer` INT NOT NULL,
  `Customer_Username` VARCHAR(30) NULL COMMENT '      ',
  `Customer_Password` VARCHAR(30) NULL,
  `Customer_Email` VARCHAR(45) NULL,
  `Customer_EmailVerfied` VARCHAR(45) NULL,
  `Customer_Firstname` VARCHAR(30) NULL,

  `Customer_Lastname` VARCHAR(30) NULL,

  `Customer_PhoneNumber` VARCHAR(15) NULL,

  `Customer_Fax` VARCHAR(16) NULL,

  `Customer_Address` VARCHAR(45) NULL,

  `Customer_Address2` VARCHAR(45) NULL,

  `Customer_Gender` VARCHAR(6) NULL,

  `Customer_BirthDate` DATE NULL,

  `Customer_Country` VARCHAR(30) NULL,

  `Customer_State` VARCHAR(30) NULL COMMENT '                                        ',

  `Customer_City` VARCHAR(30) NULL,

  `Customer_Zip` VARCHAR(12) NULL,

  `Customer_RegistrationDate` TIMESTAMP NULL,

  `Customer_LastLoginDate` TIMESTAMP NULL,

  `Customer_LastLoginIP` VARCHAR(16) NULL,

  PRIMARY KEY (`idCustomer`))

ENGINE = InnoDB;



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

-- Table `mydb`.`Comment`

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

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

  `idComment` INT NOT NULL,

  `Comment_Msg` VARCHAR(300) NULL,

  `Comment_LastModifyDate` TIMESTAMP NULL,
  `Customer_idCustomer` INT NOT NULL,
  `Product_idProduct` INT NOT NULL,
  PRIMARY KEY (`idComment`, `Customer_idCustomer`, `Product_idProduct`),
  INDEX `fk_Comment_Customer_idx` (`Customer_idCustomer` ASC),
  INDEX `fk_Comment_Product1_idx` (`Product_idProduct` ASC),
  CONSTRAINT `fk_Comment_Customer`
   FOREIGN KEY (`Customer_idCustomer`)
   REFERENCES `mydb`.`Customer` (`idCustomer`)
   ON DELETE NO ACTION
   ON UPDATE NO ACTION,
  CONSTRAINT `fk_Comment_Product1`
   FOREIGN KEY (`Product_idProduct`)
   REFERENCES `mydb`.`Product` (`idProduct`)
   ON DELETE NO ACTION
   ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `mydb`.`Rating`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `mydb`.`Rating` (
  `idRating` INT NOT NULL,
  `Rating_Value` VARCHAR(45) NULL,
  `Rating_Date` TIMESTAMP NULL,
  `Customer_idCustomer` INT NOT NULL,
  `Product_idProduct` INT NOT NULL,
  PRIMARY KEY (`idRating`, `Customer_idCustomer`, `Product_idProduct`),
  INDEX `fk_Rating_Customer1_idx` (`Customer_idCustomer` ASC),
  INDEX `fk_Rating_Product1_idx` (`Product_idProduct` ASC),
  CONSTRAINT `fk_Rating_Customer1`
    FOREIGN KEY (`Customer_idCustomer`)
    REFERENCES `mydb`.`Customer` (`idCustomer`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Rating_Product1`
    FOREIGN KEY (`Product_idProduct`)
    REFERENCES `mydb`.`Product` (`idProduct`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;



-- -----------------------------------------------------
-- Table `mydb`.`Order`
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS `mydb`.`Order` (
  `idOrder` INT NOT NULL,
  `Customer_idCustomer` INT NOT NULL,
  `Product_idProduct` INT NOT NULL,
  `Product_Staff_idStaff` INT NOT NULL,
  `Order_Amount` FLOAT NULL,
  `Order_ShipName` VARCHAR(100) NULL,
  `Order_ShipAddress` VARCHAR(100) NULL,
  `Order_Country` VARCHAR(45) NULL,
  `Order_State` VARCHAR(45) NULL,
  `Order_City` VARCHAR(45) NULL,
  `Order_Zip` VARCHAR(10) NULL,
  `Order_Phone` VARCHAR(12) NULL,
  `Order_Fax` VARCHAR(12) NULL,
  `Order_Tax` FLOAT NULL,
  `Order_Email` VARCHAR(45) NULL,
  `Order_Date` TIMESTAMP NULL,
  `Order_Shipped` TINYINT NULL,
  `Order_TrackingNumber` VARCHAR(45) NULL,
  PRIMARY KEY (`idOrder`, `Customer_idCustomer`, `Product_idProduct`, `Product_Staff_idStaff`),
  INDEX `fk_Order_Customer1_idx` (`Customer_idCustomer` ASC),
  INDEX `fk_Order_Product1_idx` (`Product_idProduct` ASC, `Product_Staff_idStaff` ASC),
  CONSTRAINT `fk_Order_Customer1`
    FOREIGN KEY (`Customer_idCustomer`)
    REFERENCES `mydb`.`Customer` (`idCustomer`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_Order_Product1`
    FOREIGN KEY (`Product_idProduct` , `Product_Staff_idStaff`)
    REFERENCES `mydb`.`Product` (`idProduct` , `Staff_idStaff`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
```

```
ENGINE = InnoDB;




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

-- Table `mydb`.`Staff_Modify_Product`

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

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

  `Staff_idStaff` INT NOT NULL,

  `Product_idProduct` INT NOT NULL,

  `Product_Staff_idStaff` INT NOT NULL,

  `Modification_Date` TIMESTAMP NULL,

  `Modification_comment` VARCHAR(100) NULL,

  PRIMARY KEY (`Staff_idStaff`, `Product_idProduct`, `Product_Staff_idStaff`),

  INDEX `fk_Staff_has_Product_Product1_idx` (`Product_idProduct` ASC, `Product_Staff_idStaff` ASC),

  INDEX `fk_Staff_has_Product_Staff1_idx` (`Staff_idStaff` ASC),

  CONSTRAINT `fk_Staff_has_Product_Staff1`

    FOREIGN KEY (`Staff_idStaff`)

    REFERENCES `mydb`.`Staff` (`idStaff`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION,

  CONSTRAINT `fk_Staff_has_Product_Product1`

    FOREIGN KEY (`Product_idProduct` , `Product_Staff_idStaff`)

    REFERENCES `mydb`.`Product` (`idProduct` , `Staff_idStaff`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;
```

```
SET SQL_MODE=@OLD_SQL_MODE;

SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS;

SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS;
```

4. SQL scripts

In order to have CRUD functionality in database, the SQL queries related to each table and reason is provided as below:

4.1. Category Table Scripts

```
insert into Category(Category_Name) Values ("House Holding")

insert into Category(Category_Name) Values ("Gardening")

insert into Category(Category_Name, Category_ParentID) Values ("Kitchen",1)

insert into Category(Category_Name, Category_ParentID) Values ("Dining Room",1)

insert into Category(Category_Name, Category_ParentID) Values
                                        ("DishWasher",(select idCategory
                                                from Category
                                        where Category_Name="kitchen"));

insert into Category(Category_Name, Category_ParentID)

 select "Dish Washer",idCategory
from Category
where Category_Name="kitchen"


Select * from Category
```

4.2. Staff Table

```
INSERT INTO `dbc6mahmad62`.`Staff`
```

(`Staff_FirstName`, `Staff_LastName`, `Staff_Username`, `Staff_Password`, `Staff_PhoneNumber`)

VALUES

("Mojtaba", "Ahmadi", "Aaaa", "123", "+358466181212");

*select * from Staff*

4.3. Product Table

INSERT INTO `dbc6mahmad62`.`Product`

(`Product_Name`, `Product_ShortDesc`,`Product_LongDesc`, `Product_Stock`, `Product_Price`, `Product_Wight`, `Product_Location`, `Category_idCategory`, `Staff_idStaff`)

VALUES

("SPT SD-2224DS Countertop Dishwasher with Delay Start & LED",

"7 wash cycles: Heavy, normal, light, mini party, rinse, speed and soak

Delay start for added convenience : Two, four, six or eight hours

Universal faucet adapter and Quick Connect: For quick and easy connection to most kitchen faucets", "7 wash cycles: Heavy, normal, light, mini party, rinse, speed and soak

Delay start for added convenience : Two, four, six or eight hours

Universal faucet adapter and Quick Connect: For quick and easy connection to most kitchen faucets

Electronic controls with LED display : LED displays remaining time or current running state

Water supply warning indicator and rinse aid warning indicator", "In Stock", "225.99", 15.45, "TAMPERE", 5, 1);

*select * from Product*

4.4. Customer Table

INSERT INTO `dbc6mahmad62`.`Customer`

(`Customer_Username`, `Customer_Password`, `Customer_Email`, `Customer_EmailVerfied`, `Customer_Firstname`, `Customer_Lastname`, `Customer_PhoneNumber`, `Customer_Fax`, `Customer_Address`, `Customer_Address2`, `Customer_Gender`, `Customer_BirthDate`, `Customer_Country`, `Customer_State`, `Customer_City`,`Customer_Zip`)

VALUES

("silver", "123", "test@test.com", "test2@test.com", "Mojtaba", "Ahmadi", "+358466181212", "0213123", "Yrttikatu 15B", "", "M", 1986-06-30, "Finland", "Pirkanmaa", "Tampere", "33710");

*select * from Customer*

4.5. order Table

INSERT INTO `dbc6mahmad62`.`Orders`

(`Customer_idCustomer`, `Product_idProduct`, `Product_Staff_idStaff`, `Order_Amount`, `Order_ShipName`, `Order_ShipAddress`, `Order_Country`, `Order_State`, `Order_City`, `Order_Zip`, `Order_Phone`, `Order_Fax`, `Order_Tax`, `Order_Email`, `Order_Date`, `Order_TrackingNumber`)

VALUES

(1000, 1, 1, 1, "Tomi", "Satakunnankatu 12", "Finland", "Pirkanmma", "Tampere", "33210", "+354343231213", "0212333434", 12.0333, "book@gmail.com", 2016-08-21, "2123434545G4343");

*select * from Orders*

4.6. Comment Table

INSERT INTO `dbc6mahmad62`.`Comment`

(`Comment_Msg`, `Comment_LastModifyDate`, `Customer_idCustomer`, `Product_idProduct`)

VALUES

("The warranty is awful!", 2016-08-20, 1000, 1);

*select * from Comment*

4.7. Rating table

INSERT INTO `dbc6mahmad62`.`Rating`

(`Rating_Value`, `Rating_Date`, `Customer_idCustomer`, `Product_idProduct`)

VALUES ("5", 2016-08-21, 1000, 1);

*select * from Rating*

5. Restful interface

Restful interface includes both PHP codes and JSON outputs. In order to cover CRUD functions in web programming , slim framework which is kind of micro framework could be used. For this purpose we 3 files “db.php” , “functions.php”, “index.php” should be modified which the result would be same as this:

Db.php

```
<?php

function getDB() {

   $dbhost="mydb.tamk.fi";

   $dbuser="c6mahmad"; // Your own username

   $dbpass="Silver123"; // Your own password

   $dbname="dbc6mahmad62"; // Your own database name

   $dbConnection = new PDO("mysql:host=$dbhost;

dbname=$dbname;charset=utf8",

$dbuser, $dbpass,array(PDO::MYSQL_ATTR_INIT_COMMAND

=> "SET NAMES 'utf8'"));

   return $dbConnection;

}
```

Index.php

```
<?php

header("Access-Control-Allow-Origin: *");

use \Psr\Http\Message\ServerRequestInterface as Request;

use \Psr\Http\Message\ResponseInterface as Response;


require 'vendor/autoload.php';

require 'db.php';

require 'functions.php';


$app = new \Slim\App;
```

```
//get all products

$app->get('/Product',function (Request $request, Response $response) {

$json = getProducts();

$response->getBody()->write($json);

return $response;

});


// get Product by id

$app->get('/Product/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = getProductById($id);

   $response->getBody()->write($json);

   return $response;

});

//create Product

$app->post('/Product',function (Request $request, Response $response) {

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = createProduct($params);

$response->getBody()->write($json);

return $response;

});


//update Product

$app->put('/Product/{id}',function (Request $request, Response $response) {

$id = $request->getAttribute('id');
```

```
$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = updateProduct($id,$params);

$response->getBody()->write($json);

return $response;

});


// delete Product by id

$app->delete('/Product/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = deleteProduct($id);

   $response->getBody()->write($json);

   return $response;

});




//get all Customer

$app->get('/Customer',function (Request $request, Response $response) {

$json = getCustomer();

$response->getBody()->write($json);

return $response;

});


// get Customer by id

$app->get('/Customer/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = getCustomerById($id);
```

```
   $response->getBody()->write($json);

   return $response;

});

//create Customer

$app->post('/Customer',function (Request $request, Response $response) {

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = createCustomer($params);

$response->getBody()->write($json);

return $response;

});


// delete Customer by id

$app->delete('/Customer/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = deleteCustomer($id);

   $response->getBody()->write($json);

   return $response;

});


//update Customer

$app->put('/Customer/{id}',function (Request $request, Response $response) {

$id = $request->getAttribute('id');

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = updateCustomer($id,$params);
```

```
$response->getBody()->write($json);

return $response;

});




//get all Staff

$app->get('/Staff',function (Request $request, Response $response) {

$json = getStaff();

$response->getBody()->write($json);

return $response;

});


// get Staff by id

$app->get('/Staff/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = getStaffById($id);

   $response->getBody()->write($json);

   return $response;

});

//create Staff

$app->post('/Staff',function (Request $request, Response $response) {

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = createStaff($params);

$response->getBody()->write($json);

return $response;

});
```

```
// delete Staff by id

$app->delete('/Staff/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = deleteStaff($id);

   $response->getBody()->write($json);

   return $response;

});


//update Staff

$app->put('/Staff/{id}',function (Request $request, Response $response) {

$id = $request->getAttribute('id');

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = updateStaff($id,$params);

$response->getBody()->write($json);

return $response;

});




//get all Category

$app->get('/Category',function (Request $request, Response $response) {

$json = getCategory();

$response->getBody()->write($json);

return $response;

});
```

```
// get Category by id

$app->get('/Category/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = getCategoryById($id);

   $response->getBody()->write($json);

   return $response;

});

//create Category

$app->post('/Category',function (Request $request, Response $response) {

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = createCategory($params);

$response->getBody()->write($json);

return $response;

});


// delete Category by id

$app->delete('/Category/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = deleteCategory($id);

   $response->getBody()->write($json);

   return $response;

});


//update Category

$app->put('/Category/{id}',function (Request $request, Response $response) {
```

```
$id = $request->getAttribute('id');

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = updateCategory($id,$params);

$response->getBody()->write($json);

return $response;

});





//get all Orders

$app->get('/Orders',function (Request $request, Response $response) {

$json = getOrders();

$response->getBody()->write($json);

return $response;

});


// get Orders by id

$app->get('/Orders/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = getOrdersById($id);

   $response->getBody()->write($json);

   return $response;

});

//create Orders

$app->post('/Orders',function (Request $request, Response $response) {
```

```
$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = createOrders($params);

$response->getBody()->write($json);

return $response;

});


// delete Orders by id

$app->delete('/Orders/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = deleteOrders($id);

   $response->getBody()->write($json);

   return $response;

});


//update Orders

$app->put('/Orders/{id}',function (Request $request, Response $response) {

$id = $request->getAttribute('id');

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = updateOrders($id,$params);

$response->getBody()->write($json);

return $response;

});
```

```
//get all Comment

$app->get('/Comment',function (Request $request, Response $response) {

$json = getComment();

$response->getBody()->write($json);

return $response;

});


// get Comment by id

$app->get('/Comment/{id}',function (Request $request, Response $response) {

   $id = $request->getAttribute('id');

$json = getCommentById($id);

   $response->getBody()->write($json);

   return $response;

});

//create Comment

$app->post('/Comment',function (Request $request, Response $response) {

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = createComment($params);

$response->getBody()->write($json);

return $response;

});


// delete Comment by id

$app->delete('/Comment/{id}',function (Request $request, Response $response) {
   $id = $request->getAttribute('id');

$json = deleteComment($id);

   $response->getBody()->write($json);

   return $response;

});


//update Comment

$app->put('/Comment/{id}',function (Request $request, Response $response) {

$id = $request->getAttribute('id');

$body = $request->getBody();

$params = json_decode($body);

var_dump($params);

$json = updateComment($id,$params);

$response->getBody()->write($json);

return $response;

});


//get all Rating

$app->get('/Rating',function (Request $request, Response $response) {

$json = getRating();

$response->getBody()->write($json);

return $response;

});


// get Rating by id
```

```
$app->get('/Rating/{id}',function (Request $request, Response $response) {

    $id = $request->getAttribute('id');

 $json = getRatingById($id);

    $response->getBody()->write($json);

    return $response;

});

//create Rating

$app->post('/Rating',function (Request $request, Response $response) {

 $body = $request->getBody();

 $params = json_decode($body);

 var_dump($params);

 $json = createRating($params);

 $response->getBody()->write($json);

 return $response;

});


// delete Rating by id

$app->delete('/Rating/{id}',function (Request $request, Response $response) {

    $id = $request->getAttribute('id');

 $json = deleteRating($id);

    $response->getBody()->write($json);

    return $response;

});


//update Rating

$app->put('/Rating/{id}',function (Request $request, Response $response) {

 $id = $request->getAttribute('id');

 $body = $request->getBody();
$params = json_decode($body);

var_dump($params);

$json = updateRating($id,$params);

$response->getBody()->write($json);

return $response;

});

$app->run();
```

Postman Parameters:

Product: http://home.tamk.fi/~c6mahmad/CMD/index.php/Product

Post parameters:

{"Product_Name":"Panasonic","Product_ShortDesc":"Short test","Product_LongDesc":"long test","Product_Stock":"In Stock","Product_Price":"250.90","Product_Wight":"17.01","Product_Location":"Helsinki","Category_idCategory":"5","Staff_idStaff":"1"}

Customer: http://home.tamk.fi/~c6mahmad/CMD/index.php/Customer

Post parameters:

{"Customer_Username":"gold","Customer_Password":"123323","Customer_Email":"gold@test.com","Customer_EmailVerfied":"gold22@test.com","Customer_Firstname":"Mikko","Customer_Lastname":"lialahti","Customer_PhoneNumber":"+35846618123","Customer_Fax":"0213125","Customer_Address":"Yrttikatu 17B","Customer_Address2":"dfg","Customer_Gender":"M","Customer_Country":"Sweden","Customer_State":"stockholm","Customer_City":"stockholm","Customer_Zip":"3432"}