|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Practicum Final Exam – Even Semester Year 2021/2022** | | | | | | |
| **Subject** | | | **COMP6708001 – Object Oriented Programming** | | |  |
| **Class** | **:** | **BD02 / BM01** | | **Start Date** | **: 17 June 2022** |
| **Lecturer** | **:** | **D4689 - Rulyna, S.Kom., M.M.**  **D6421 - Muhammad Fikri Hasani, S.Kom., M.T.** | | **Start Time** | **: 09:20** |
| **End Date** | **: 17 June 2022** |
| **End Time** | **: 11:20** |

**PERATURAN UJIAN:**

*Exam Regulations:*

* Mahasiswa tidak diperbolehkan berdiskusi dan/atau bekerja sama dengan peserta ujian lainnya

*Student is not allowed to discuss and/or work together with other exam participants*

* Mahasiswa tidak diperbolehkan untuk membuka dan menyalin dari **BUKU** atau **CATATAN**, **VIDEO** dari pengajar (recording kelas, VBL, Youtube, dsb) dan **REFERENSI** lainnya

*Student isn't allowed to open and copy from any resources such as notes, videos (class recording, VBL, Youtube, etc) and other references*

* Mahasiswa tidak diperbolehkan membuka dan menyalin jawaban dari internet (google, stackoverflow, dsb)

*Student isn't allowed to open and copy answer from the internet (google, stackoverflow, etc)*

* Asisten **BERHAK** memberi nilai 0 **(NOL)** bagi peserta ujian yang melakukan segala bentuk kecurangan

*Assistant is able to give 0 (ZERO) score for exam participant who does any cheating actions*

* Kumpulkan jawaban tepat pada waktunya, apabila terlambat mengumpulkan maka jawaban tidak akan dikoreksi dan nilai mahasiswa adalah 0

*Submit the answer on time, if not, then the answer will not be checked, and the students will receive 0 (ZERO)*

* Bila Anda tidak membaca peraturan ini, maka Anda dianggap telah membaca dan menyetujuinya

*If you have missed to read these regulations, so you are considered to have read and agreed on it*



**SOFTWARE YANG DIGUNAKAN:**

*Software will be used:*

* Eclipse 2020.6
* Java 8
* MySQL Java Connection Library 8.0.24
* XAMPP 8.0.7

**FILE YANG DIKUMPULKAN:**

*File must be collected:*

* JAVA
* CLASS
* SQL

**PERHATIAN!**

*Attention!*

* Bagi yang mengerjakan tidak sesuai dengan soal, maka akan diberikan nilai **NOL (0)**

*For those who do not work in accordance with the exam case will be marked as* ***ZERO (0)***

* Bagi yang mengerjakan tidak sesuai dengan software dan versi yang telah ditetapkan, maka akan tetap dikoreksi dengan software dan versi yang telah ditetapkan

*For those who do not work in accordance with the software and specific version will be corrected by the predefined software and version*

* Kompres semua jawaban yang akan diunggah. Pastikan format pengumpulan nama file dan ekstensi sesuai dengan format berikut: **[NIM]-[NAMA].zip**

*Compress all file that will be uploaded. Make sure the format for collecting file name and extension according to the following format:* ***[NIM]-[NAME].zip***

**Soal**

*Case*

**FAcobell**

**Criteria**:

1. **Database Operation**

Perform database operation from given **sql file** (“**facobell.sql**”) in Java application

1. **Abstract Class**

Design at least **three** classes, consisting of **one abstract** class and **two concrete** class. **Abstract** class consists of all common attributes and behaviour that both of the concrete class had. **Concrete** class consist of specific attribute and behaviour that is not common between the concrete classes

1. **Encapsulation**

Attributes of the class must be **encapsulated** in order to prevent **illegal** direct access, and can only be accessed using **accessor** and **mutator** that may perform validation before accessing the encapsulated attribute

1. **Inheritance**

Concrete classes **must inherit all** attributes and behaviours from the abstract class

1. **Polymorphism**

Concrete class may **override** behaviour inherited from abstract class according to their **specific implementation**

**FAcobell** is a fast-food counter established by Mr. Faladdin. In accordance with the quality of their food, the counter gain popularity in Indonesia. Given massive growth development, he asked his acquaintance Mr. Fauzan to develop a program using **Java** as base and **MySQL** for its storage data. Due to some circumstances, Mr. Fauzan assigned the project to you. To help with the programming, Mr. Fauzan some design and notes regarding the database, which as shown below:

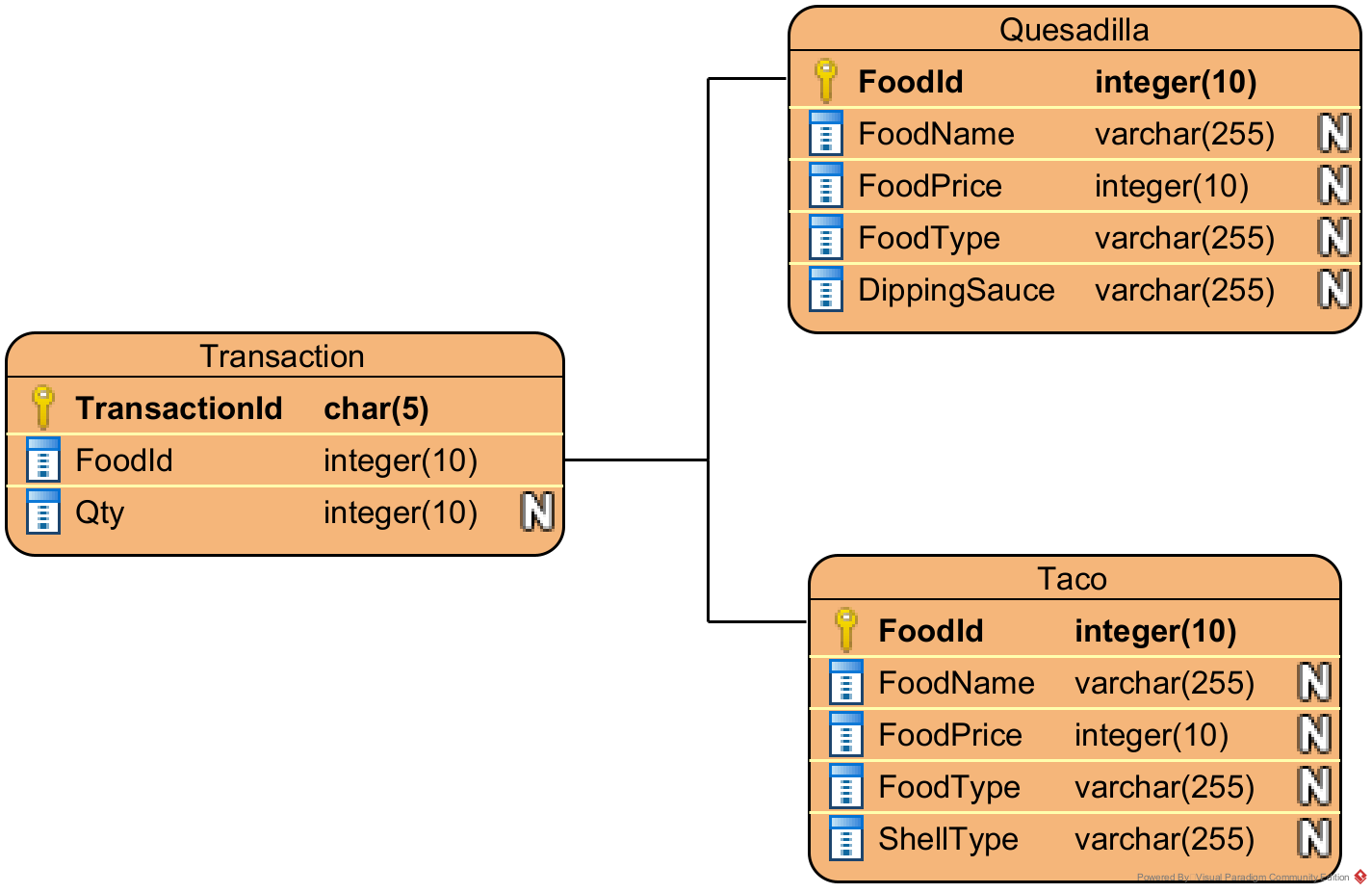


Figure 1. ERD of FAcobell Database

|  |  |
| --- | --- |
| **Connection String** | **jdbc:mysql://localhost:3306/facobell** |
| **Username** | **root** |
| **Password** |  |
| **Driver Class** | **com.mysql.cj.jdbc.Driver** |

The **default port number is 3306**. If you have **changed the port number for MySQL in your XAMPP** then feel free to **change the 3306 into your port number**.

* At the start of program, there will be 4 menus:

1. **View All Transactions**
2. **Buy Food**
3. **Delete Transaction**
4. **Exit**

Background pattern

Description automatically generated with low confidence

Figure 2. Main Menu

* If user choose menu 1 (“**View All Transactions**”), then the program will:
* **Retrieve** data from “**transaction**” table in the database
* If data is **empty**, **display** the following message

Table

Description automatically generated with low confidence

Figure 3. No Transaction Message

* Otherwise, **display** all transactions

Table

Description automatically generated

Figure 4. List of Transactions

* If user choose menu 2 (“**Buy Food**”), then the program will:
* Show **all items data from the database, whether the type is** “**Taco**” or“**Quesadilla**”. After that ask the user to **choose the food from the list**.

Table

Description automatically generated

*Figure 5. Display Item*

* **Prompt** user to **choose food to buy**. **Validate** the input must be **either 1 – total existing food(s)**
* **Prompt** user to input **quantity**. **Validate** the input must be **greater than 0**



Figure 5. User Validation Input

* **Insert the transaction data into the database** with the **following id format**

|  |
| --- |
| **TRXXX**  **Where:**  **X: random number from (0-9)**  **Example: TR528, TR901, TR082, etc** |

* **Then show the details** of the transaction with the **total price** obtained from the following formula.

|  |  |
| --- | --- |
| **Taco** | **Quesadilla** |
| Tax = 5000 | Tax = 3000 |
| (FoodPrice \* Quantity) + Tax | (FoodPrice \* Quantity) + Tax |

A picture containing graphical user interface

Description automatically generated

*Figure 6. Transaction Detail (Quesadilla)*

A picture containing graphical user interface

Description automatically generated

*Figure 7. Transaction Detail (Taco)*

* If user choose menu 3 (“**Delete Transaction**”), then the program will:
* **Retrieve** data from “**transaction**” table in the database
* If data is **empty**, **display** the following message

Table

Description automatically generated with low confidence

Figure 8. No Transaction Message

* Otherwise, **display** all transactions

Table

Description automatically generated

Figure 9. List of Transactions

* **Prompt** user to input **deletion choice** using **TransactionID**. **Validate** the **TransactionID** input **must exist (case sensitive)**



Figure 11. Deletion Input Validation

* **Finally**, **delete the transaction** and show a **success message**.



Figure 12. Success Message

* If user choose menu 4 (“**Exit**”), then the program will close