Database Name: turner_construction
Database type: MySQL

Project Language: Java
Required Libraries: MySQL Connector J
Project Code: GitHub
Project Description: Java console / command-line program. Can be modified to function outside of the IDE and on its own.

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Tables: contracts, items, made_of, orders, projects, suppliers, to_supply

Table Descriptions:

1. suppliers(supplier_no (PK), supplier_address, supplier_name)
    a. Contains the suppliers, their address, and supplier name

2. contracts(contract_no(PK), supplier_no_fk (FK), date_of_contract)
    a. Contains contracts, their suppliers and date of contract

3. projects(project_no(PK), project_data)
    a. Contains projects and their data

4. order(order_no(PK), contract_no_fk (FK), project_no_fk (FK), date_required, date_completed)
    a. Contains orders, their contract, their project, date required and date_completed

5. items(item_no(PK), item_description)
    a. Contains the items, and their descriptions

6. to_supply(item_no(PK), contract_no(PK), contract_price, contract_amount)

    a. Contains what items each contract supplies and the price negotiated in the contract

7. made_of(item_no(PK), order_no(PK), order_qty)
    a. Contains what items each order contains and their quantity

Data types:

- *_no = int
- Supplier_address = char(30)
- Supplier_name = char(20)
- Item_description = char(20)’
- Project data = char(20)

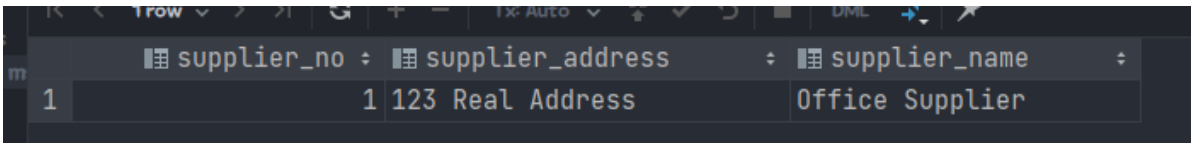
On-line transactions Demonstrations

1. Enter a new SUPPLIER-NO with SUPPLIER-ADDRESS and SUPPLIER-NAME. (infrequent)

_____In the program

```
Enter supplier's number
1
Enter the supplier's address
123 Real Address
Enter the supplier's name
Office Supplier
Supplier successfully added
```

In the database



	supplier_no	supplier_address	supplier_name
1	1	123 Real Address	Office Supplier

2. Enter a new ITEM-NO with ITEM-DESCRIPTION. (infrequent)

In the program

```
Enter the item number
1
Enter item description
Paper
Item successfully added
```

In the database

	item_no	item_description
1	1	Paper

3. Enter a new PROJECT-NO with PROJECT-DATA. (infrequent)

In the program

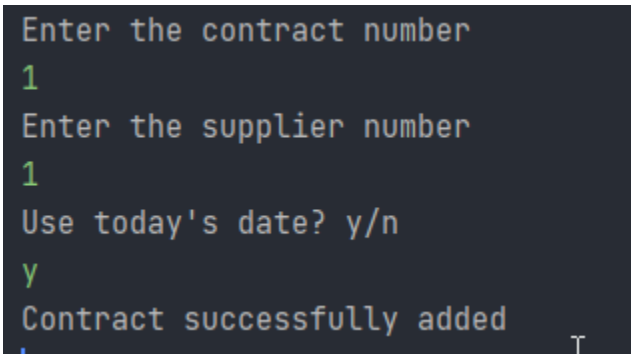
```
Enter Project Number
1
Enter Project Data
Test Project Data
Project successfully added
```

In the database

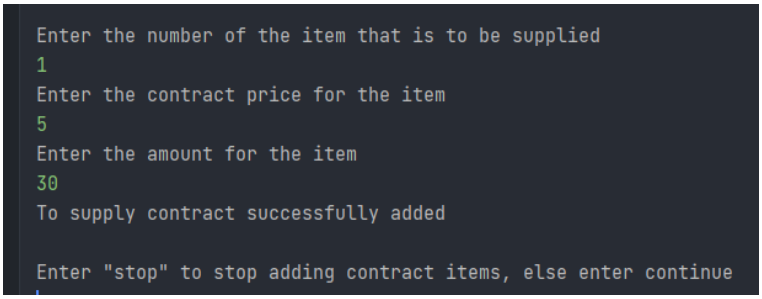
	project_no	project_data
1	1	Test Project Data

4. Enter a new CONTRACT-NO with DATE-OF-CONTRACT together with the ITEM-NO, CONTRACT-PRICE, and CONTRACT-AMOUNT for all items in the contract. (infrequent)

In program

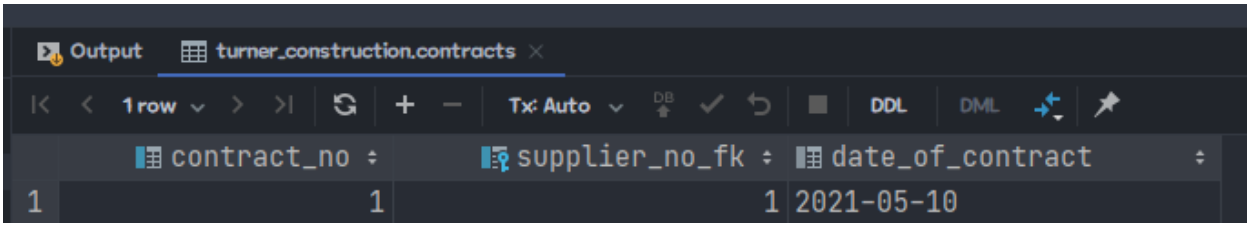


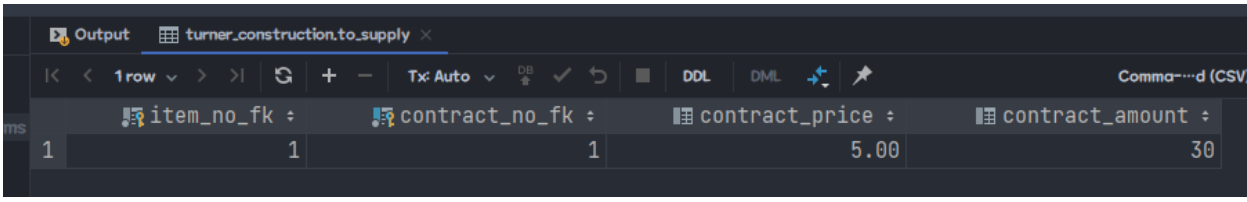
Item addition to the contract



Limited at 500 items per contract

In the database





5. Enter a new order

In the program

```
Enter the order number
1
Enter the contract number
1
Enter the project number
1
Enter the date-required, use format YYYY-MM-DD
2020-05-15
Order successfully added
```

Item addition to the order,

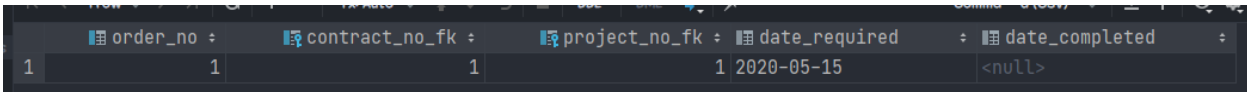
```
Enter item number to order
1
Enter the quantity
15
Enter "stop" to stop, continue to continue adding items
```

Does not allow you to add items not authorized by the contract,
Limited to 100 items per order
Also limited to 6000 orders per contract
Not allowed if quantity available is less than attempted order

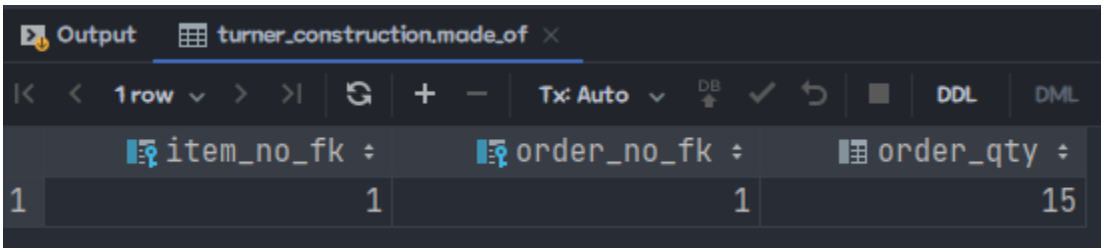
```
Enter item number to order
2
Enter the quantity
3
Item addition failed
Enter "stop" to stop, continue to continue adding items
```

```
Enter item number to order
1
Enter the quantity
40
Contract quantity exceeded, order item addition failed.
Enter "stop" to stop, continue to continue adding items
```

Values in the database



	order_no	contract_no_fk	project_no_fk	date_required	date_completed
1	1	1	1	2020-05-15	<null>



Output | turner_construction.made_of

1 row | Tx: Auto | DDL | DML

	item_no_fk	order_no_fk	order_qty
1	1	1	15

6. Find the items in an order

_____In the program

```
Enter the order number you would like to inspect
1
Order Number: 1 Contract Number: 1  Project Number: 1   Date Required: 2020-05-15   Date Completed: n/a
Item Number           Item Name   Quantity
         1               Paper         15
```

Functions by using the order number to query the made_of table and the orders table for the data. The totals the items and respective quantities

7. Find the price of an item in an order. The price of the item is the price negotiated for the order's contract

```
Enter the item number
1
Enter order number
1
Item Price: 5.00
```

Functions by using the order number to get the contract number from the orders table and retrieves the price of the item from the to_supply table

8. Find the orders in which a particular item appears

_____In program

```
Enter item number
1
Item found in orders: 1
```

Functions by using the to_supply table and returns all entries where the item_no_fk is equal to the entered one.

9. Find the price for a given item in a contract

_____In program

```
Enter item number
1
Enter contract number
1
Item Price in Contract 1: 5.00
```

_____Very similar to 7. Except directly uses the the contract number to retrieve the price from to_supply

10. Find a particular contract together with its supplier

In program

```
Enter the supplier number
1
Supplier found in contracts: 1
```

Lists the contracts with the provided supplier

11. Find the quantity of a given item still available under a given contract

In program

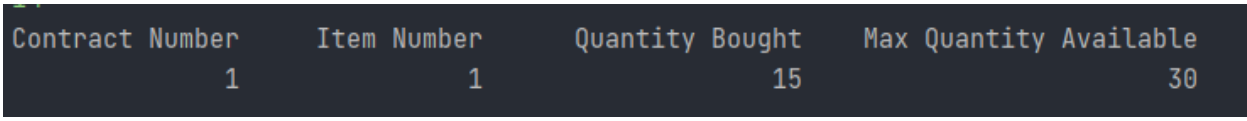
```
Enter the item number
1
Enter the contract number
1
The amount available is: 15
```

Takes the available amount from the contract and subtracts the total amount ordered from the made_of table to retrieve the amount available. As shown in (5. Image 2) and (4. Image 3), 15 of item 1 was already ordered from the contract amount 30.

Batch Requirement

12. The 12th option in the program is called Summarize Contracts.

_____In program



Contract Number	Item Number	Quantity Bought	Max Quantity Available
1	1	15	30

_____

Function: retrieves all contracts along with their items and quantity already ordered. Sorts by contract_no and item_no. Quantity bought is the summed order_qty from the made_of table which contains the items of orders.