

Course: CSCI4140 Advanced Databases

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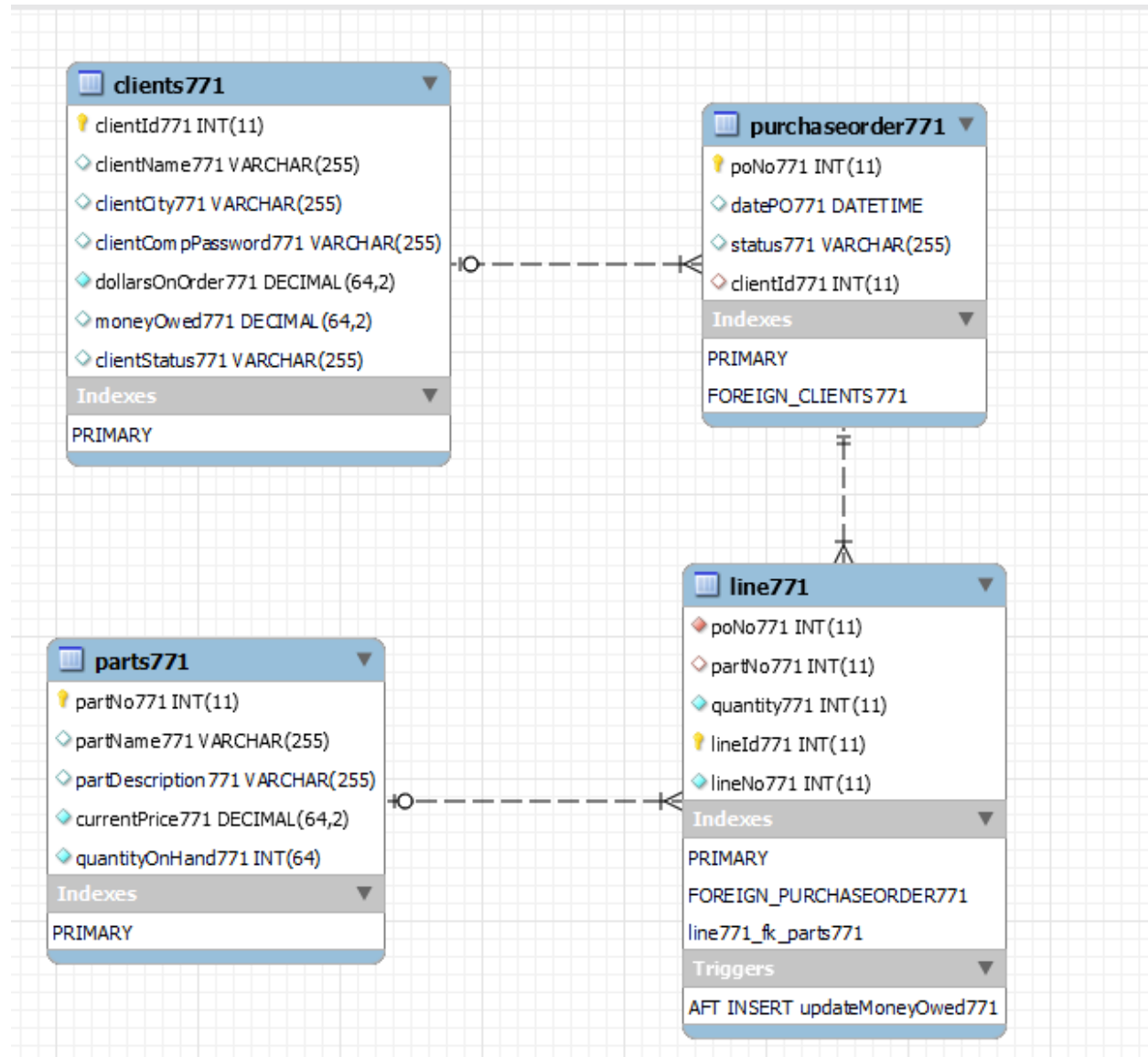
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Assignment 1:

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Section 1: ER Diagram



Section 2: SQL Script Table Creation

```
-- 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='ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION';
```

```

-- -----
-- Schema csci4140_assn1_771
-- -----

CREATE SCHEMA IF NOT EXISTS `csci4140_assn1_771` DEFAULT CHARACTER SET utf8 ;
USE `csci4140_assn1_771` ;

-- -----
-- Table `csci4140_assn1_771`.`clients771`
-- -----

CREATE TABLE IF NOT EXISTS `csci4140_assn1_771`.`clients771` (
  `clientId771` INT(11) NOT NULL,
  `clientName771` VARCHAR(255) NULL DEFAULT NULL,
  `clientCity771` VARCHAR(255) NULL DEFAULT NULL,
  `clientCompPassword771` VARCHAR(255) NULL DEFAULT NULL,
  `dollarsOnOrder771` DECIMAL(64,2) NOT NULL DEFAULT '0.00',
  `moneyOwed771` DECIMAL(64,2) NULL DEFAULT '0.00',
  `clientStatus771` VARCHAR(255) NULL DEFAULT NULL,
  PRIMARY KEY (`clientId771`))
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8;

-- -----
-- Table `csci4140_assn1_771`.`parts771`
-- -----

CREATE TABLE IF NOT EXISTS `csci4140_assn1_771`.`parts771` (
  `partNo771` INT(11) NOT NULL,
  `partName771` VARCHAR(255) NULL DEFAULT NULL,
  `partDescription771` VARCHAR(255) NULL DEFAULT NULL,
  `currentPrice771` DECIMAL(64,2) NOT NULL DEFAULT '0.00',
  `quantityOnHand771` INT(64) NOT NULL DEFAULT '0',
  PRIMARY KEY (`partNo771`))
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8;

-- -----
-- Table `csci4140_assn1_771`.`purchaseorder771`
-- -----

CREATE TABLE IF NOT EXISTS `csci4140_assn1_771`.`purchaseorder771` (
  `poNo771` INT(11) NOT NULL,
  `dateP0771` DATETIME NULL DEFAULT CURRENT_TIMESTAMP,
  `status771` VARCHAR(255) NULL DEFAULT NULL,
  `clientId771` INT(11) NULL,
  PRIMARY KEY (`poNo771`),

```

```

INDEX `FOREIGN_CLIENTS771` USING BTREE (`clientId771`) VISIBLE,
CONSTRAINT `purchaseorder771_fk_clients771`
  FOREIGN KEY (`clientId771`)
    REFERENCES `csci4140_assn1_771`.`clients771` (`clientId771`))
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8;

-----
-- Table `csci4140_assn1_771`.`line771`
-----
CREATE TABLE IF NOT EXISTS `csci4140_assn1_771`.`line771` (
  `poNo771` INT(11) NOT NULL,
  `partNo771` INT(11) NULL,
  `quantity771` INT(11) NOT NULL DEFAULT '0',
  `lineId771` INT(11) NOT NULL AUTO_INCREMENT,
  `lineNo771` INT(11) NOT NULL,
  PRIMARY KEY (`lineId771`),
  INDEX `FOREIGN_PURCHASEORDER771` USING BTREE (`poNo771`) VISIBLE,
  INDEX `line771_fk_parts771` (`partNo771` ASC) VISIBLE,
  CONSTRAINT `line771_fk_parts771`
    FOREIGN KEY (`partNo771`)
      REFERENCES `csci4140_assn1_771`.`parts771` (`partNo771`),
  CONSTRAINT `line771_fk_purchaseorders771`
    FOREIGN KEY (`poNo771`)
      REFERENCES `csci4140_assn1_771`.`purchaseorder771` (`poNo771`))
ENGINE = InnoDB
AUTO_INCREMENT = 46
DEFAULT CHARACTER SET = utf8;

USE `csci4140_assn1_771` ;

-----
-- procedure GetPartCurrentPrice771
-----

DELIMITER ;

SET SQL_MODE=@OLD_SQL_MODE;
SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS;
SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS;

```

Section 3: Sample Scripts

Trigger:

```
DELIMITER $$
USE `csci4140_assn1_771`$$
CREATE
DEFINER=`root`@`localhost`
TRIGGER `csci4140_assn1_771`.`updateMoneyOwed771`
AFTER INSERT ON `csci4140_assn1_771`.`line771`
FOR EACH ROW
BEGIN
    DECLARE totalAmount DECIMAL(64,2);
    DECLARE lineCount INT;
    DECLARE counter INT DEFAULT 1;

    SELECT COUNT(*) INTO lineCount FROM line771 WHERE poNo771 = NEW.poNo771;
    SET totalAmount = 0;

    WHILE counter <= lineCount DO
        SELECT (p.currentPrice771 * l.quantity771)
        INTO totalAmount
        FROM line771 l
        JOIN parts771 p ON l.partNo771 = p.partNo771
        WHERE l.poNo771 = NEW.poNo771 AND l.lineNo771 = counter;

        SET counter = counter + 1;
    END WHILE;

    UPDATE clients771
    SET moneyOwed771 = moneyOwed771 + totalAmount
    WHERE clientId771 = (SELECT clientId771 FROM purchaseorder771 WHERE poNo771 =
NEW.poNo771);
END$$
```

Stored Procedure:

```
DELIMITER $$
USE `csci4140_assn1_771`$$
CREATE DEFINER=`root`@`localhost` PROCEDURE `GetPartCurrentPrice771`(IN `PartID`
INT, OUT `CurrentPrice` DECIMAL(10,2))
BEGIN
    SELECT currentPrice771 INTO CurrentPrice
    FROM parts771
    WHERE partNo771 = PartID;
```

```
END$$
```

Tuple Insertion:

Client Table:

```
--  
-- Dumping data for table `clients771`  
--  
  
INSERT INTO `clients771` (`clientId771`, `clientName771`, `clientCity771`,  
`clientCompPassword771`, `dollarsOnOrder771`, `moneyOwed771`, `clientStatus771`)  
VALUES  
(1, 'James McLean', 'Halifax', 'password123', '1000.00', '853.58', 'Active'),  
(2, 'Liam Osler', 'Halifax', 'password123', '1599.00', '69.69', 'Active'),  
(3, 'Red Green', 'Ontario', 'password123', '10000.00', '5078.10', 'Active'),  
(4, 'Martha Stewart', 'Los Angeles', 'password123', '20000.00', '10000.00',  
'Active'),  
(5, 'Snoop Dogg', 'Los Angeles', 'password123', '50000.00', '20000.00',  
'Active'),  
(6, 'Eric Andre', 'Los Angeles', 'password123', '6999.00', '699.00', 'MIA');
```

Line Table:

```
-- Dumping data for table `line771`  
--  
  
INSERT INTO `line771` (`poNo771`, `partNo771`, `quantity771`, `lineId771`,  
`lineNo771`) VALUES  
(2, 1, 30, 25, 1),  
(2, 2, 50, 26, 2),  
(2, 3, 10, 27, 3),  
(3, 1, 10, 28, 1),  
(3, 2, 10, 29, 2),  
(3, 3, 10, 30, 3),  
(4, 1, 10, 31, 1),  
(4, 2, 10, 32, 2),  
(4, 3, 10, 33, 3),  
(5, 1, 1, 34, 1),  
(5, 2, 1, 35, 2),  
(5, 3, 1, 36, 3),  
(6, 1, 1, 37, 1),  
(6, 2, 1, 38, 2),  
(6, 3, 1, 39, 3),  
(7, 1, 30, 40, 1),  
(7, 2, 50, 41, 2),
```

```
(7, 3, 10, 42, 3),
(8, 1, 30, 43, 1),
(8, 2, 50, 44, 2),
(8, 3, 10, 45, 3);
```

Parts Table:

```
--
-- Dumping data for table `parts771`
--

INSERT INTO `parts771` (`partNo771`, `partName771`, `partDescription771`,
`currentPrice771`, `quantityOnHand771`) VALUES
(1, '3/8inch Bolt', 'A high-quality bolt', '0.69', 10000),
(2, '3/8inch Carriage Bolt', 'A durable bolt', '0.99', 500000),
(3, '3/8inch Self-Tapping Screw', 'Goes into metal good', '0.79', 19000),
(4, '3/8inch Washer',
```

Purchase Orders Table:

```
--
-- Dumping data for table `purchaseorder771`
--

INSERT INTO `purchaseorder771` (`poNo771`, `dateP0771`, `status771`,
`clientId771`) VALUES
(1, '2023-05-20 19:34:13', 'Pending', 1),
(2, '2023-05-20 19:38:28', 'Pending', 1),
(3, '2023-05-20 19:43:09', 'Pending', 1),
(4, '2023-05-20 19:44:18', 'Pending', 1),
(5, '2023-05-20 19:49:07', 'Pending', 1),
(6, '2023-05-20 19:51:18', 'Pending', 1),
(7, '2023-05-20 19:57:32', 'Pending', 1),
(8, '2023-05-20 19:58:19', 'Pending', 3);
```

Section 4: Screenshots

Trigger:

Before:

clientId771	clientName771	clientCity771	clientCompPassword771	dollarsOnOrder771	moneyOwed771	clientStatus771
1	James McLean	Halifax	password123	1000.00	853.58	Active
2	Liam Osler	Halifax	password123	1599.00	69.69	Active
3	Red Green	Ontario	password123	10000.00	5078.10	Active
4	Martha Stewart	Los Angeles	password123	20000.00	10000.00	Active
5	Snoop Dogg	Los Angeles	password123	50000.00	20000.00	Active
6	Eric Andre	Los Angeles	password123	6999.00	699.00	MIA

Insert Statement:

```
-- Insert the purchase order
INSERT INTO `purchaseorder771` (`poNo771`, `dateP0771`, `status771`,
`clientId771`)
VALUES (9, NOW(), 'Pending', 2);

-- Insert the lines for the purchase order
INSERT INTO `line771` (`poNo771`, `partNo771`, `quantity771`, `lineNo771`)
VALUES
(9, 1, 1000, 1), -- Adjusted quantity to reach the desired total
(9, 2, 1000, 2), -- Adjusted quantity to reach the desired total
(9, 3, 1000, 3); -- Adjusted quantity to reach the desired total
```

Result:

clientId771	clientName771	clientCity771	clientCompPassword771	dollarsOnOrder771	moneyOwed771	clientStatus771
1	James McLean	Halifax	password123	1000.00	853.58	Active
2	Liam Osler	Halifax	password123	1599.00	2539.69	Active
3	Red Green	Ontario	password123	10000.00	5078.10	Active
4	Martha Stewart	Los Angeles	password123	20000.00	10000.00	Active
5	Snoop Dogg	Los Angeles	password123	50000.00	20000.00	Active
6	Eric Andre	Los Angeles	password123	6999.00	699.00	MIA

Stored Procedure:

Procedure Call:

```
SET @Price = NULL;

CALL GetPartCurrentPrice771(1, @Price);

SELECT @Price AS CurrentPrice;
```


Result:

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0001 seconds.)

```
SET @Price = NULL;
```

[Edit inline] [Edit] [Create PHP code]

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0011 seconds.)

```
CALL GetPartCurrentPrice771(1, @Price);
```

[Edit inline] [Edit] [Create PHP code]

✓ Showing rows 0 - 0 (1 total, Query took 0.0002 seconds.)

```
SELECT @Price AS CurrentPrice;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ▾ | Filter rows:

+ Options

CurrentPrice
0.69

:

Insert Client:

Statement:

```
--  
-- Adding client data for table `clients771`  
--  
INSERT INTO `clients771` (`clientId771`, `clientName771`, `clientCity771`,  
`clientCompPassword771`, `dollarsOnOrder771`, `moneyOwed771`, `clientStatus771`)  
VALUES  
(7, 'Isaac Asimov', 'Boston', 'password123', '12.00', '1200.00', 'Active'),  
(8, 'George Bush', 'Texas', 'password123', '3000.00', '4000000.00', 'Active');
```

PhpMyAdmin Response:

```
-- -- Adding client data for table `clients771` -- INSERT INTO `clients771` (`clientId771`, `clientName771`, `clientCity771`, `clientCompPassword771`,  
`dollarsOnOrder771`, `moneyOwed771`, `clientStatus771`) VALUES (7, 'Isaac Asimov', 'Boston', 'password123', '12.00', '1200.00', 'Active'), (8, 'George Bush',  
'Texas', 'password123', '3000.00', '4000000.00', 'Active');
```

Result:

clientId771	clientName771	clientCity771	clientCompPassword771	dollarsOnOrder771	moneyOwed771	clientStatus771
1	James McLean	Halifax	password123	1000.00	853.58	Active
2	Liam Osler	Halifax	password123	1599.00	2539.69	Active
3	Red Green	Ontario	password123	10000.00	5078.10	Active
4	Martha Stewart	Los Angeles	password123	20000.00	10000.00	Active
5	Snoop Dogg	Los Angeles	password123	50000.00	20000.00	Active
6	Eric Andre	Los Angeles	password123	6999.00	699.00	MIA
7	Isaac Asimov	Boston	password123	12.00	1200.00	Active
8	George Bush	Texas	password123	3000.00	4000000.00	Active

Insert Part:

Statement:

```
--  
-- Dumping data for table `parts771`  
--  
  
INSERT INTO `parts771` (`partNo771`, `partName771`, `partDescription771`,  
`currentPrice771`, `quantityOnHand771`) VALUES  
(5, 'Flux Capacitor', 'A highly reactive banana receptor', '80808080.80', 1),  
(6, 'Transwarp Coil', 'Borg techonology for subspace warp engines',  
'1010101010.10', 12),  
(7, 'Repulsor C-2000 Class', 'Pod racer acceleration technology', '9999.99',  
500);
```

PhpMyAdmin Response:

✓ 3 rows inserted. (Query took 0.0038 seconds.)

```
-- -- Dumping data for table `parts771` -- INSERT INTO `parts771` (`partNo771`, `partName771`, `partDescription771`, `currentPrice771`, `quantityOnHand771`)  
VALUES (5, 'Flux Capacitor', 'A highly reactive banana receptor', '80808080.80', 1), (6, 'Transwarp Coil', 'Borg techonology for subspace warp engines',  
'1010101010.10', 12), (7, 'Repulsor C-2000 Class', 'Pod racer acceleration technology', '9999.99', 500);
```

Result:

partNo771	partName771	partDescription771	currentPrice771	quantityOnHand771
1	3/8inch Bolt	A high-quality bolt	0.69	10000
2	3/8inch Carriage Bolt	A durable bolt	0.99	500000
3	3/8inch Self-Tapping Screw	Goes into metal good	0.79	19000
4	3/8inch Washer	Use with bolts to limit stress on metal	0.26	30000
5	Flux Capacitor	A highly reactive banana receptor	80808080.80	1
6	Transwarp Coil	Borg techonology for subspace warp engines	1010101010.10	12
7	Repulsor C-2000 Class	Pod racer acceleration technology	9999.99	500

Client/Purchase Order/Line:

Before (Client):

clientId771	clientName771	clientCity771	clientCompPassword771	dollarsOnOrder771	moneyOwed771	clientStatus771
1	James McLean	Halifax	password123	1000.00	853.58	Active
2	Liam Osler	Halifax	password123	1599.00	2539.69	Active
3	Red Green	Ontario	password123	10000.00	5078.10	Active
4	Martha Stewart	Los Angeles	password123	20000.00	10000.00	Active
5	Snoop Dogg	Los Angeles	password123	50000.00	20000.00	Active
6	Eric Andre	Los Angeles	password123	6999.00	699.00	MIA
7	Isaac Asimov	Boston	password123	12.00	4460.00	Active
8	George Bush	Texas	password123	3000.00	4000000.00	Active

Before (Line):

poNo771	partNo771	quantity771	lineId771	lineNo771
4	2	10	32	2
4	3	10	33	3
5	1	1	34	1
5	2	1	35	2
5	3	1	36	3
6	1	1	37	1
6	2	1	38	2
6	3	1	39	3
7	1	30	40	1
7	2	50	41	2
7	3	10	42	3
8	1	30	43	1
8	2	50	44	2
8	3	10	45	3
9	1	1000	49	1
9	2	1000	50	2
9	3	1000	51	3
10	1	1000	52	1

Before (Purchase Order):

poNo771	datePO771	status771	clientId771
1	2023-05-20 19:34:13	Pending	1
2	2023-05-20 19:38:28	Pending	1
3	2023-05-20 19:43:09	Pending	1
4	2023-05-20 19:44:18	Pending	1
5	2023-05-20 19:49:07	Pending	1
6	2023-05-20 19:51:18	Pending	1
7	2023-05-20 19:57:32	Pending	1
8	2023-05-20 19:58:19	Pending	3
9	2023-05-20 22:26:42	Pending	2
10	2023-05-20 23:27:42	Pending	7

Statement:

```
INSERT INTO purchaseorder771 (poNo771, datePO771, status771, clientId771)
VALUES (11, CURRENT_TIMESTAMP, 'Pending', 1);

-- Step 2: Insert Lines into Line Table
INSERT INTO line771 (lineNo771, poNo771, partNo771, quantity771)
VALUES
  (1, 11, 6, 1),
  (2, 11, 7, 4)
;
```

PhpMyAdmin Response:

✔ 1 row inserted. (Query took 0.0192 seconds.)

```
INSERT INTO purchaseorder771 (poNo771, datePO771, status771, clientId771) VALUES (11, CURRENT_TIMESTAMP, 'Pending', 1);
```

[Edit inline] [Edit] [Create PHP code]

✔ 2 rows inserted.
Inserted row id: 56 (Query took 0.0231 seconds.)

```
-- Step 2: Insert Lines into Line Table INSERT INTO line771 (lineNo771, poNo771, partNo771, quantity771) VALUES (1, 11, 6, 1), (2, 11, 7, 4);
```

[Edit inline] [Edit] [Create PHP code]

Result(Client):

clientId771	clientName771	clientCity771	clientCompPassword771	dollarsOnOrder771	moneyOwed771	clientStatus771
1	James McLean	Halifax	password123	1000.00	1010141863.64	Active
2	Liam Osler	Halifax	password123	1599.00	2539.69	Active
3	Red Green	Ontario	password123	10000.00	5078.10	Active
4	Martha Stewart	Los Angeles	password123	20000.00	10000.00	Active
5	Snoop Dogg	Los Angeles	password123	50000.00	20000.00	Active
6	Eric Andre	Los Angeles	password123	6999.00	699.00	MIA
7	Isaac Asimov	Boston	password123	12.00	4460.00	Active
8	George Bush	Texas	password123	3000.00	4000000.00	Active

Result (Line):

poNo771	partNo771	quantity771	lineId771	lineNo771
5	2	1	35	2
5	3	1	36	3
6	1	1	37	1
6	2	1	38	2
6	3	1	39	3
7	1	30	40	1
7	2	50	41	2
7	3	10	42	3
8	1	30	43	1
8	2	50	44	2
8	3	10	45	3
9	1	1000	49	1
9	2	1000	50	2
9	3	1000	51	3
10	1	1000	52	1

Result (Purchase Order):

poNo771	datePO771	status771	clientId771
1	2023-05-20 19:34:13	Pending	1
2	2023-05-20 19:38:28	Pending	1
3	2023-05-20 19:43:09	Pending	1
4	2023-05-20 19:44:18	Pending	1
5	2023-05-20 19:49:07	Pending	1
6	2023-05-20 19:51:18	Pending	1
7	2023-05-20 19:57:32	Pending	1
8	2023-05-20 19:58:19	Pending	3
9	2023-05-20 22:26:42	Pending	2
10	2023-05-20 23:27:42	Pending	7
11	2023-05-20 23:38:47	Pending	1