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MODULE CODE: ICT3722

## ASSIGNMENT 4

### QUESTION 1

#### 1.1

The following SQL statement will create the “INVOICE TABLE”

```
CREATE TABLE invoices(  
    invoice_id NUMBER(5),  
    vendor_id NUMBER(5),  
    invoice_number VARCHAR2(30),  
    invoice_date DATE,  
    invoice_total NUMBER(9,2),  
    payment_total NUMBER(9,2) DEFAULT 0,  
    credit_total NUMBER(9,2) DEFAULT 0,  
    terms_id NUMBER,  
    invoice_due_date DATE,  
    payment_date DATE,  
    CONSTRAINT INVOICES_PK PRIMARY KEY(INVOICE_ID)  
);
```

#### 1.2

The following SQL statement will create the “VENDORS TABLE”

```
CREATE TABLE vendors (  
    vendor_id NUMBER(4) NOT NULL,  
    vendor_name VARCHAR(50) NOT NULL,  
    vendor_phone VARCHAR(15) NOT NULL,  
    vendor_areacode NUMBER(6) NOT NULL,  
    vendor_state VARCHAR(4) NOT NULL,  
    CONSTRAINT VENDOR_PK Primary Key (vendor_id)  
);
```

#### 1.3

```
INSERT INTO invoices VALUES (1,34,'QP58872',(to_date('25-FEB-14','YY-MON-DD')),116.54,116.54,0,4,NULL, NULL);
```

```
INSERT INTO invoices VALUES (2,34,'Q545443',(to_date('14-MAR-14','YY-MON-DD')),1083.58,1083.58,0,4,NULL, NULL);
```

```
INSERT INTO invoices VALUES (3,110,'P-0608',(to_date('11-APRIL-14','YY-MON-DD')),20551.18,0,1200,5,NULL, NULL);
```

```
INSERT INTO invoices VALUES (4,110,'P-0259',(to_date('16-APRIL-14','YY-MON-DD')),26881.4,26881.4,0,3,NULL, NULL);
```

```
INSERT INTO invoices VALUES (5,81,'MABO1489',(to_date('16-APRIL-14','YY-MON-DD')),936.93,936.93,0,3,NULL, NULL);
```

```
INSERT INTO invoices VALUES (6,122,'989319-497',(to_date('17-APRIL-14','YY-MON-DD')),2312.2,0,0,4,NULL, NULL);
```

```
INSERT INTO invoices VALUES (7,82,'C73-24',(to_date('17-APRIL-14','YY-MON-DD')),600,600,0,2,NULL, NULL);
```

```
INSERT INTO invoices VALUES (8,122, '989319-487',(to_date('18-APRIL-14','YY-MON-DD')),1927.54,0,0,4,NULL, NULL);
```

```
INSERT INTO invoices VALUES (9,122, '989319-477',(to_date('19-APRIL-14','YY-MON-DD')),2184.11,2184.11,0,4,NULL, NULL);
```

```
INSERT INTO invoices VALUES (10,122, '989319-467',(to_date('24-APRIL-14','YY-MON-DD')),2318.03,2318.03,0,4,NULL, NULL);
```

```
INSERT INTO invoices VALUES (11,122, '989319-457',(to_date('24-APRIL-14','YY-MON-DD')),3813.33,3813.33,0,3,NULL, NULL);
```

```
INSERT INTO invoices VALUES (12,122, '989319-447',(to_date('24-APRIL-14','YY-MON-DD')),3689.99,3689.99,0,3,NULL, NULL);
```

```
INSERT INTO invoices VALUES (13,122, '989319-437',(to_date('24-APRIL-14','YY-MON-DD')),2765.36,2765.36,0,2,NULL, NULL);
```

```
INSERT INTO invoices VALUES (14,122, '989319-427',(to_date('25-APRIL-14','YY-MON-DD')),2115.81,2115.81,0,1,NULL, NULL);
```

```
INSERT INTO invoices VALUES (15,121, '97/553B',(to_date('26-APRIL-14','YY-MON-DD')),313.55,0,0,4,NULL, NULL);
```

## **QUESTION 2**

### **2.1**

#### SQL QUERY

```
SELECT INVOICE_NUMBER, INVOICE_DATE, INVOICE_TOTAL, PAYMENT_TOTAL,  
CREDIT_TOTAL, (INVOICE_TOTAL - (PAYMENT_TOTAL + CREDIT_TOTAL)) AS  
BALANCE_DUE
```

```
FROM INVOICES
```

```
ORDER BY INVOICE_DATE;
```

### QUESTION 3

#### SQL QUERY

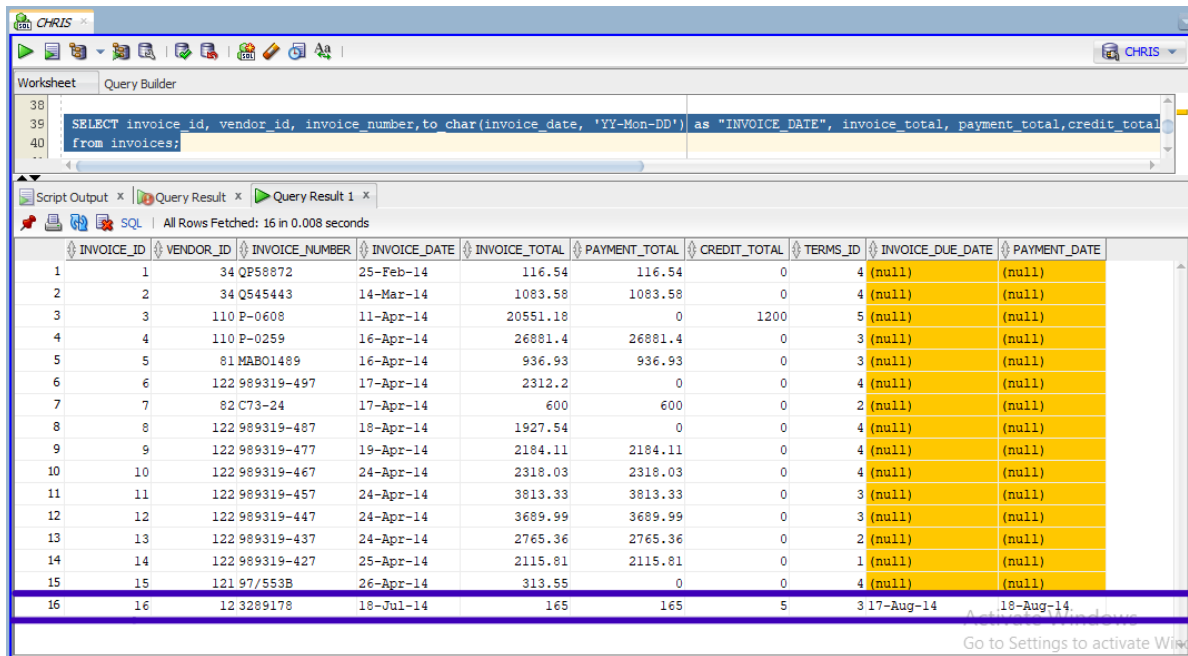
```
SELECT VENDOR_NAME,INVOICE_NUMBER,INVOICE_DATE,INVOICE_TOTAL  
FROM VENDORS vendor1,INVOICES invoice1 WHERE  
vendor1.VENDOR_ID=invoice1.VENDOR_ID;
```

### QUESTION 4

Using the INSERT statement:

#### SQL QUERY

```
INSERT INTO invoices VALUES (16,12, '3289178','18-JUL-14',165,165,5,3,'17-AUG-14','18-AUG-14');
```



|    | INVOICE_ID | VENDOR_ID | INVOICE_NUMBER | INVOICE_DATE | INVOICE_TOTAL | PAYMENT_TOTAL | CREDIT_TOTAL | TERMS_ID | INVOICE_DUE_DATE | PAYMENT_DATE |
|----|------------|-----------|----------------|--------------|---------------|---------------|--------------|----------|------------------|--------------|
| 1  | 1          | 34        | QP58872        | 25-Feb-14    | 116.54        | 116.54        | 0            | 4        | (null)           | (null)       |
| 2  | 2          | 34        | Q545443        | 14-Mar-14    | 1083.58       | 1083.58       | 0            | 4        | (null)           | (null)       |
| 3  | 3          | 110       | P-0608         | 11-Apr-14    | 20551.18      | 0             | 1200         | 5        | (null)           | (null)       |
| 4  | 4          | 110       | P-0259         | 16-Apr-14    | 26881.4       | 26881.4       | 0            | 3        | (null)           | (null)       |
| 5  | 5          | 81        | MAB01489       | 16-Apr-14    | 936.93        | 936.93        | 0            | 3        | (null)           | (null)       |
| 6  | 6          | 122       | 989319-497     | 17-Apr-14    | 2312.2        | 0             | 0            | 4        | (null)           | (null)       |
| 7  | 7          | 82        | C73-24         | 17-Apr-14    | 600           | 600           | 0            | 2        | (null)           | (null)       |
| 8  | 8          | 122       | 989319-487     | 18-Apr-14    | 1927.54       | 0             | 0            | 4        | (null)           | (null)       |
| 9  | 9          | 122       | 989319-477     | 19-Apr-14    | 2184.11       | 2184.11       | 0            | 4        | (null)           | (null)       |
| 10 | 10         | 122       | 989319-467     | 24-Apr-14    | 2318.03       | 2318.03       | 0            | 4        | (null)           | (null)       |
| 11 | 11         | 122       | 989319-457     | 24-Apr-14    | 3813.33       | 3813.33       | 0            | 3        | (null)           | (null)       |
| 12 | 12         | 122       | 989319-447     | 24-Apr-14    | 3689.99       | 3689.99       | 0            | 3        | (null)           | (null)       |
| 13 | 13         | 122       | 989319-437     | 24-Apr-14    | 2765.36       | 2765.36       | 0            | 2        | (null)           | (null)       |
| 14 | 14         | 122       | 989319-427     | 25-Apr-14    | 2115.81       | 2115.81       | 0            | 1        | (null)           | (null)       |
| 15 | 15         | 121       | 97/553B        | 26-Apr-14    | 313.55        | 0             | 0            | 4        | (null)           | (null)       |
| 16 | 16         | 12        | 3289178        | 18-Jul-14    | 165           | 165           | 5            | 3        | 17-Aug-14        | 18-Aug-14    |

**Screenshot of the added values highlighted within the purple lines**

### QUESTION 5

Using the UPDATE statement

#### SQL QUERY

```
UPDATE invoices  
SET CREDIT_TOTAL = '35.99'  
WHERE INVOICE_NUMBER = 'QP58872';
```

## QUESTION 6

### SQL QUERY

DELETE FROM INVOICES

WHERE PAYMENT\_TOTAL - INVOICE\_TOTAL - CREDIT\_TOTAL = 0;

## QUESTION 7

### SQL QUERY

CREATE VIEW VENDOR\_VIEW

AS SELECT VENDOR\_NAME, VENDOR\_STATE, VENDOR\_PHONE

FROM VENDORS;

## QUESTION 8

### SQL QUERY

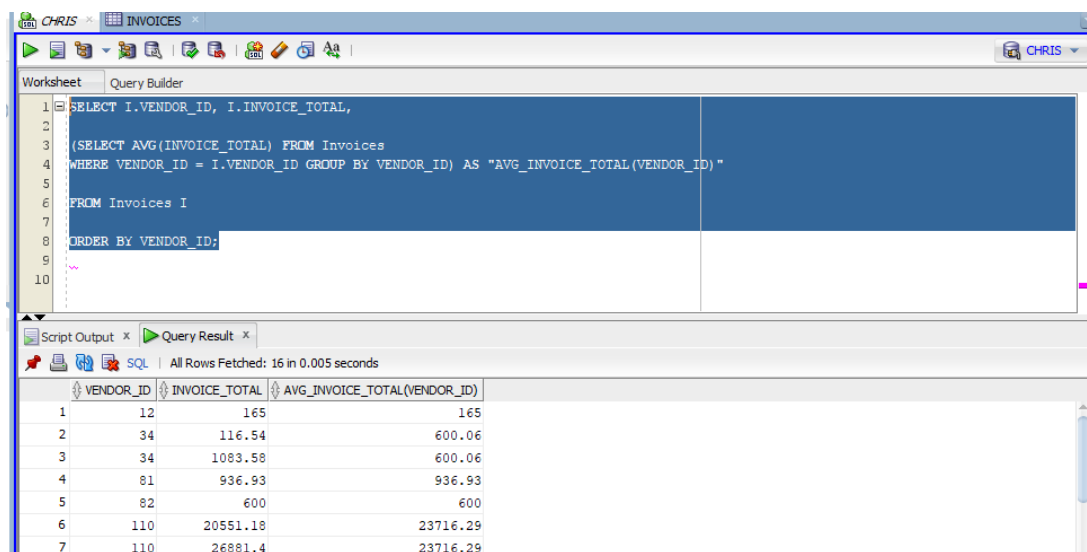
SELECT I.VENDOR\_ID, I.INVOICE\_TOTAL,

(SELECT AVG(INVOICE\_TOTAL) FROM Invoices

WHERE VENDOR\_ID = I.VENDOR\_ID GROUP BY VENDOR\_ID) AS  
"AVG\_INVOICE\_TOTAL(VENDOR\_ID)"

FROM INVOICES I

ORDER BY VENDOR\_ID;



The screenshot shows a database query tool interface. The top pane displays the SQL query: `SELECT I.VENDOR_ID, I.INVOICE_TOTAL, (SELECT AVG(INVOICE_TOTAL) FROM Invoices WHERE VENDOR_ID = I.VENDOR_ID GROUP BY VENDOR_ID) AS "AVG_INVOICE_TOTAL(VENDOR_ID)" FROM Invoices I ORDER BY VENDOR_ID;`. The bottom pane shows the query results in a table with 7 rows and 4 columns: VENDOR\_ID, INVOICE\_TOTAL, and AVG\_INVOICE\_TOTAL(VENDOR\_ID). The results are as follows:

|   | VENDOR_ID | INVOICE_TOTAL | AVG_INVOICE_TOTAL(VENDOR_ID) |
|---|-----------|---------------|------------------------------|
| 1 | 12        | 165           | 165                          |
| 2 | 34        | 116.54        | 600.06                       |
| 3 | 34        | 1083.58       | 600.06                       |
| 4 | 81        | 936.93        | 936.93                       |
| 5 | 82        | 600           | 600                          |
| 6 | 110       | 20551.18      | 23716.29                     |
| 7 | 110       | 26881.4       | 23716.29                     |