**SQL Training**

### Attention

1. The <XXXX> used in this article represents the employee ID. Please replace it with your own employee ID.

Alrady change it TOO

### Create data object

#### Create tables and table indexes

Table ：CUX\_OM\_CUSTOMERS\_XXXX

For storing customer information。

| Field | Type | Nullable | Default Value | Description |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| CUSTOMER\_ID | BIGINT | N |  |  |
| CUSTOMER\_NUMBER | VARCHAR(30) | N |  |  |
| CUSTOMER\_NAME | VARCHAR(100) | N |  |  |
| TELEPHONE | VARCAHR(50) | Y |  |  |
| START\_DATE\_ACTIVE | DATE | Y |  |  |
| END\_DATE\_ACTIVE | DATE | Y |  |  |
| CREATED\_BY | BIGINT | N |  |  |
| CREATION\_DATE | DATE | N |  |  |
| LAST\_UPDATED\_BY | BIGINT | N |  |  |
| LAST\_UPDATE\_DATE | DATE | N |  |  |
| LAST\_UPDATE\_LOGIN | BIGINT | Y |  |  |

Create indexes：

| Index | Unique | Field | Description |
| --- | --- | --- | --- |
|  |  |  |  |
| CUX\_OM\_CUSTOMERS\_XXXX\_U1 | Y | CUSTOMER\_ID |  |
| CUX\_OM\_CUSTOMERS\_XXXX\_U2 | Y | CUSTOMER\_NUMBER |  |
| CUX\_OM\_CUSTOMERS\_XXXX\_U3 | Y | CUSTOMER\_NAME |  |

Table：CUX\_OM\_ITEMS\_XXXX

For storing product information。

| Field | Type | Nullable | Default Value | Description |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| ITEM\_ID | BIGINT | N |  |  |
| ITEM\_NUMBER | VARCHAR(30) | N |  |  |
| ITEM\_NAME | VARCHAR(100) | N |  |  |
| UOM\_CODE | VARCHAR(25) | Y |  |  |
| START\_DATE\_ACTIVE | DATE | Y |  |  |
| END\_DATE\_ACTIVE | DATE | Y |  |  |
| CREATED\_BY | BIGINT | N |  |  |
| CREATION\_DATE | DATE | N |  |  |
| LAST\_UPDATED\_BY | BIGINT | N |  |  |
| LAST\_UPDATE\_DATE | DATE | N |  |  |
| LAST\_UPDATE\_LOGIN | BIGINT | Y |  |  |

Create indexes：

| Index | Unique | Field | Description |
| --- | --- | --- | --- |
|  |  |  |  |
| CUX\_OM\_ITEMS\_XXXX\_U1 | Y | ITEM\_ID |  |
| CUX\_OM\_ITEMS\_XXXX\_U2 | Y | ITEM\_NUMBER |  |

table：CUX\_OM\_HEADERS\_XXXX

For storing sales order header information。

| Field | Type | Nullable | DefaultValue | Description |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| HEADER\_ID | BIGINT | N |  |  |
| ORG\_ID | BIGINT | Y | 101 |  |
| ORDER\_NUMBER | VARCHAR(30) | N |  |  |
| CUSTOMER\_ID | BIGINT | Y |  |  |
| ORDER\_DATE | DATE | N |  |  |
| ORDER\_STATUS | VARCHAR(30) | Y |  | status list:  UNAPPROVED  APPROVED  CANCELLED  CLOSED |
| DESCRIPTION | VARCHAR(240) | Y |  |  |
| CREATED\_BY | BIGINT | N |  |  |
| CREATION\_DATE | DATE | N |  |  |
| LAST\_UPDATED\_BY | BIGINT | N |  |  |
| LAST\_UPDATE\_DATE | DATE | N |  |  |
| LAST\_UPDATE\_LOGIN | BIGINT | Y |  |  |
| ATTRIBUTE\_CATEGORY | VARCHAR(30) | Y |  |  |
| ATTRIBUTE1 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE2 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE3 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE4 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE5 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE6 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE7 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE8 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE9 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE10 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE11 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE12 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE13 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE14 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE15 | VARCHAR(150) | Y |  |  |

Create Indexes：

| Index | Unique | Field | Description |
| --- | --- | --- | --- |
|  |  |  |  |
| CUX\_OM\_HEADERS\_XXXX \_U1 | Y | HEADER\_ID |  |
| CUX\_OM\_HEADERS\_XXXX \_U2 | Y | ORDER\_NUMBER |  |
| CUX\_OM\_HEADERS\_XXXX \_N1 |  | CUSTOMER\_ID |  |

Table：CUX\_OM\_LINES\_XXXX

For storing sales order line information。

| Field | Type | Nullable | Default Value | Description |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| LINE\_ID | BIGINT | N |  |  |
| HEADER\_ID | BIGINT | N |  |  |
| LINE\_NUMBER | VARCHAR(30) | N |  |  |
| ITEM\_ID | BIGINT | N |  |  |
| UNIT\_PRICE | DECIMAL(10,2) | Y |  |  |
| QUANTITY | DECIMAL(10,2) | Y |  |  |
| DESCRIPTION | VARCHAR(240) | Y |  |  |
| ADDITION1 | VARCHAR(150) | Y |  |  |
| ADDITION2 | VARCHAR(150) | Y |  |  |
| ADDITION3 | VARCHAR(150) | Y |  |  |
| ADDITION4 | VARCHAR(150) | Y |  |  |
| ADDITION5 | VARCHAR(150) | Y |  |  |
| CREATED\_BY | BIGINT | N |  |  |
| CREATION\_DATE | DATE | N |  |  |
| LAST\_UPDATED\_BY | BIGINT | N |  |  |
| LAST\_UPDATE\_DATE | DATE | N |  |  |
| LAST\_UPDATE\_LOGIN | BIGINT | Y |  |  |
| ATTRIBUTE\_CATEGORY | VARCHAR(30) | Y |  |  |
| ATTRIBUTE1 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE2 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE3 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE4 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE5 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE6 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE7 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE8 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE9 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE10 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE11 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE12 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE13 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE14 | VARCHAR(150) | Y |  |  |
| ATTRIBUTE15 | VARCHAR(150) | Y |  |  |

Create Indexes：

| Index | Unique | Field | Description |
| --- | --- | --- | --- |
|  |  |  |  |
| CUX\_OM\_LINES\_XXXX \_U1 | Y | LINE\_ID |  |
| CUX\_OM\_LINES\_XXXX \_N1 |  | HEADER\_ID |  |
| CUX\_OM\_LINES\_XXXX \_N2 |  | ITEM\_ID |  |

#### Import data

excel：《1 – Table Data.xls》

1．CUX\_OM\_CUSTOMERS\_XXXX

2．CUX\_OM\_ITEMS\_XXXX

4．CUX\_OM\_HEADERS\_XXXX

5．CUX\_OM\_LINES\_XXXX

### Questions

#### NO.01

Please create the above objects in the database: table, table index。

#### NO.02

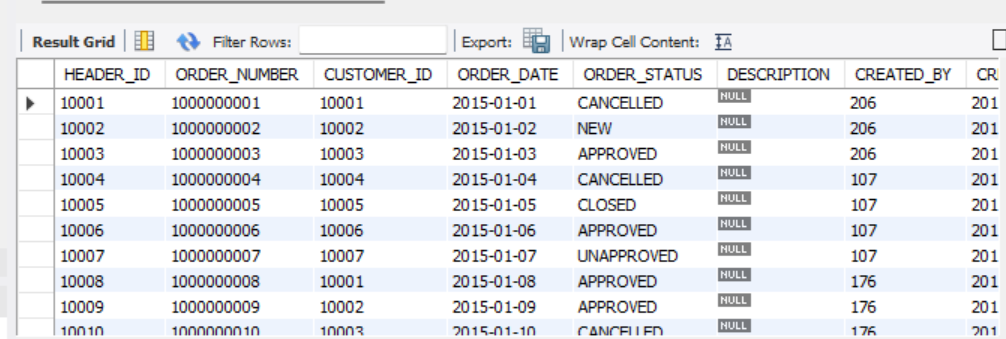
Please import the corresponding table data in the file: "1 – Table Data.xlsx" into the table。

I already import the Table Data.xlsx

#### NO.03

Create a view：CUX\_OM\_HEADERS\_V

select \* from CUX\_OM\_HEADERS\_V



#### NO.04

Write SQL to display the following information and sort it by customer\_number and order\_number in ascending order。

SELECT order\_number, customer\_number, customer\_name, order\_date, order\_status, description

FROM cux\_om\_headers\_46326 inner join cux\_om\_customers\_46326 ON

cux\_om\_headers\_46326.CUSTOMER\_ID = cux\_om\_customers\_46326.CUSTOMER\_ID

#### 

#### NO.05

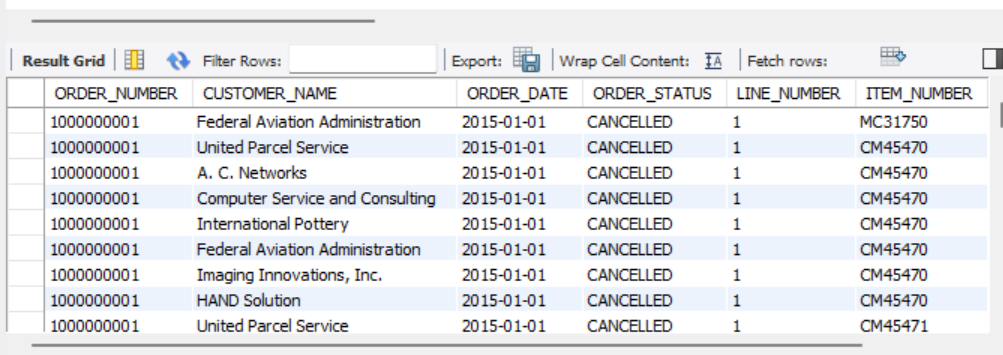
Write SQL to display order and order line information, sorted by order number and line number in ascending order (including orders with all statuses)

SELECT CUX\_OM\_HEADERS\_46326.ORDER\_NUMBER, CUX\_OM\_CUSTOMERS\_46326.CUSTOMER\_NAME,

CUX\_OM\_HEADERS\_46326.ORDER\_DATE, CUX\_OM\_HEADERS\_46326.ORDER\_STATUS, CUX\_OM\_LINES\_46326.LINE\_NUMBER, CUX\_OM\_ITEMS\_46326.ITEM\_NUMBER,

CUX\_OM\_ITEMS\_46326.ITEM\_NAME FROM CUX\_OM\_CUSTOMERS\_46326 CROSS JOIN CUX\_OM\_HEADERS\_46326, CUX\_OM\_LINES\_46326,

CUX\_OM\_ITEMS\_46326 ORDER BY CUX\_OM\_HEADERS\_46326.ORDER\_NUMBER ASC, CUX\_OM\_LINES\_46326.LINE\_NUMBER ASC;



#### NO.06

Write SQL to display products purchased by customers

SELECT CUX\_OM\_CUSTOMERS\_46326.CUSTOMER\_NAME, CUX\_OM\_CUSTOMERS\_46326.CUSTOMER\_NUMBER,

CUX\_OM\_ITEMS\_46326.ITEM\_NUMBER, CUX\_OM\_ITEMS\_46326.ITEM\_NAME, CUX\_OM\_ITEMS\_46326.UOM\_CODE

FROM CUX\_OM\_CUSTOMERS\_46326 CROSS JOIN CUX\_OM\_ITEMS\_46326 WHERE CUX\_OM\_CUSTOMERS\_46326.CUSTOMER\_NUMBER = '1101'AND CUX\_OM\_ITEMS\_46326.ITEM\_NUMBER = 'SB86662';

#### 

#### NO.07

Write SQL to count all orders (excluding canceled orders) and calculate the average sales unit price and the highest and lowest unit price by product.

SELECT

cux\_om\_items\_46326.ITEM\_NUMBER,

cux\_om\_items\_46326.ITEM\_NAME,

AVG(cux\_om\_lines\_46326.UNIT\_PRICE) AS Avg\_Unit\_Price,

MAX(cux\_om\_lines\_46326.UNIT\_PRICE) AS Max\_Unit\_Price,

MIN(cux\_om\_lines\_46326.UNIT\_PRICE) AS Min\_Unit\_Price

FROM

cux\_om\_items\_46326

JOIN

cux\_om\_lines\_46326 ON cux\_om\_items\_46326.ITEM\_ID = cux\_om\_lines\_46326.ITEM\_ID

JOIN

cux\_om\_headers\_46326 ON cux\_om\_lines\_46326.HEADER\_ID = cux\_om\_headers\_46326.HEADER\_ID

JOIN

cux\_om\_customers\_46326 ON cux\_om\_headers\_46326.CUSTOMER\_ID = cux\_om\_customers\_46326.CUSTOMER\_ID

WHERE

cux\_om\_customers\_46326.CUSTOMER\_NUMBER = '1101'

AND cux\_om\_items\_46326.ITEM\_NUMBER = 'SB86662'

#### 

#### NO.08

Write SQL to query customer information about canceled orders.

SELECT cux\_om\_customers\_46326.CUSTOMER\_NUMBER, cux\_om\_customers\_46326.CUSTOMER\_NAME, cux\_om\_customers\_46326.TELEPHONE,

cux\_om\_items\_46326.START\_DATE\_ACTIVE, cux\_om\_items\_46326.END\_DATE\_ACTIVE from cux\_om\_customers\_46326

JOIN cux\_om\_headers\_46326 ON cux\_om\_customers\_46326.CUSTOMER\_ID = cux\_om\_headers\_46326.HEADER\_ID

JOIN cux\_om\_items\_46326 on cux\_om\_items\_46326.ITEM\_ID = cux\_om\_headers\_46326.HEADER\_ID WHERE ORDER\_STATUS = "CANCELLED"

#### 

#### NO.09

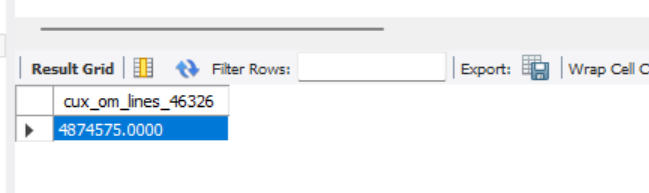
Write SQL to count the company's total sales in 2015. (All orders with status CANCELLED are excluded from statistics)

SELECT SUM(UNIT\_PRICE \* QUANTITY) AS cux\_om\_lines\_46326

FROM cux\_om\_headers\_46326

JOIN cux\_om\_lines\_46326 ON cux\_om\_headers\_46326.HEADER\_ID = cux\_om\_lines\_46326.HEADER\_ID

WHERE YEAR(cux\_om\_headers\_46326.ORDER\_DATE) = 2015



#### NO.10

Write a script to add an index to the table: CUX\_OM\_ITEMS\_XXXX: a normal index, and the applicable field: ITEM\_NAME.

