**SQL Training**

### Attention

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

### 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。

-- Customer table

CREATE TABLE CUSTOMER (

CUSTOMER\_ID BIGINT PRIMARY KEY,

CUSTOMER\_NUMBER VARCHAR(50),

CUSTOMER\_NAME VARCHAR(100),

TELEPHONE VARCHAR(20),

START\_DATE\_ACTIVE DATE,

END\_DATE\_ACTIVE DATE,

CREATED\_BY BIGINT,

CREATION\_DATE DATE,

LAST\_UPDATED\_BY BIGINT,

LAST\_UPDATE\_DATE DATE,

LAST\_UPDATE\_LOGIN BIGINT

);

INSERT INTO CUSTOMER (CUSTOMER\_ID, CUSTOMER\_NUMBER, CUSTOMER\_NAME, TELEPHONE, START\_DATE\_ACTIVE, END\_DATE\_ACTIVE, CREATED\_BY, CREATION\_DATE, LAST\_UPDATED\_BY, LAST\_UPDATE\_DATE, LAST\_UPDATE\_LOGIN)

VALUES

(10001, '1101', '????????????', '020-28889382', '2013-10-01', NULL, '1', '2011-01-01', '1', '2011-01-01', '-1'),

(10002, '1102', 'Imaging Innovations, Inc.', '020-28889383', '2013-10-02', NULL, '1', '2011-01-01', '1', '2011-01-01', '-1'),

(10003, '1103', 'Federal Aviation Administration', '020-28889384', '2013-10-03', '2015-01-01', '1', '2011-01-01', '1', '2011-01-01', '-1'),

(10004, '1104', 'International Pottery', '020-28889385', '2013-10-04', NULL, '1', '2011-01-01', '1', '2011-01-01', '-1'),

(10005, '1105', 'Computer Service and Consulting', '020-28889386', '2013-10-05', NULL, '1', '2011-01-01', '1', '2011-01-01', '-1'),

(10006, '1106', 'A. C. Networks', '020-28889387', '2013-10-06', NULL, '1', '2011-01-01', '1', '2011-01-01', '-1'),

(10007, '1107', 'United Parcel Service', '020-28889388', '2013-10-07', '2015-01-10', '1', '2011-01-01', '1', '2011-01-01', '-1');

select \* from customer;

drop table CUSTOMER;

-- Item table

CREATE TABLE ITEM (

ITEM\_ID BIGINT PRIMARY KEY,

ITEM\_NUMBER VARCHAR(30),

ITEM\_NAME VARCHAR(100),

UOM\_CODE VARCHAR(25),

START\_DATE\_ACTIVE DATE,

END\_DATE\_ACTIVE DATE,

CREATED\_BY BIGINT,

CREATION\_DATE DATE,

LAST\_UPDATED\_BY BIGINT,

LAST\_UPDATE\_DATE DATE,

LAST\_UPDATE\_LOGIN BIGINT

);

INSERT INTO ITEM (ITEM\_ID, ITEM\_NUMBER, ITEM\_NAME, UOM\_CODE, START\_DATE\_ACTIVE, END\_DATE\_ACTIVE, CREATED\_BY, CREATION\_DATE, LAST\_UPDATED\_BY, LAST\_UPDATE\_DATE, LAST\_UPDATE\_LOGIN)

VALUES

(10001, 'CM45470', '矿泉水', '瓶', '2013-10-01', NULL, '1', '2013-10-01', '1', '2013-10-01', '-1'),

(10002, 'CM45471', '桌子', '张', '2013-10-02', NULL, '1', '2013-10-01', '1', '2013-10-01', '-1'),

(10003, 'MC31324', '圆珠笔', '支', '2013-10-03', '2015-01-01', '1', '2013-10-01', '1', '2013-10-01', '-1'),

(10004, 'MC31325', '电脑', '台', '2013-10-04', NULL, '1', '2013-10-01', '1', '2013-10-01', '-1'),

(10005, 'MC31326', '硬盘', '个', '2013-10-05', NULL, '1', '2013-10-01', '1', '2013-10-01', '-1'),

(10006, 'MC31749', '玻璃', '公斤', '2013-10-06', NULL, '1', '2013-10-01', '1', '2013-10-01', '-1'),

(10007, 'MC31750', '投影仪', '台', '2013-10-07', '2015-10-01', '1', '2013-10-01', '1', '2013-10-01', '-1'),

(10008, 'SB86662', '办公用品', '个', '2013-10-08', NULL, '1', '2013-10-01', '1', '2013-10-01', '-1');

select \* from item;

drop table ITEM;

-- Order header table

CREATE TABLE ORDER\_HEADER (

HEADER\_ID BIGINT PRIMARY KEY,

ORG\_ID BIGINT,

ORDER\_NUMBER VARCHAR(30),

CUSTOMER\_ID BIGINT,

ORDER\_DATE DATE,

ORDER\_STATUS VARCHAR(20),

DESCRIPTION VARCHAR(255),

CREATED\_BY BIGINT,

CREATION\_DATE DATE,

LAST\_UPDATED\_BY BIGINT,

LAST\_UPDATE\_DATE DATE,

LAST\_UPDATE\_LOGIN BIGINT,

ATTRIBUTE\_CATEGORY VARCHAR(30),

ATTRIBUTE1 VARCHAR(255),

ATTRIBUTE2 VARCHAR(255),

ATTRIBUTE3 VARCHAR(255),

ATTRIBUTE4 VARCHAR(255),

ATTRIBUTE5 VARCHAR(255),

ATTRIBUTE6 VARCHAR(255),

ATTRIBUTE7 VARCHAR(255),

ATTRIBUTE8 VARCHAR(255),

ATTRIBUTE9 VARCHAR(255),

ATTRIBUTE10 VARCHAR(255),

ATTRIBUTE11 VARCHAR(255),

ATTRIBUTE12 VARCHAR(255),

ATTRIBUTE13 VARCHAR(255),

ATTRIBUTE14 VARCHAR(255),

ATTRIBUTE15 VARCHAR(255)

);

INSERT INTO ORDER\_HEADER (HEADER\_ID, ORG\_ID, ORDER\_NUMBER, CUSTOMER\_ID, ORDER\_DATE, ORDER\_STATUS, DESCRIPTION, CREATED\_BY, CREATION\_DATE, LAST\_UPDATED\_BY, LAST\_UPDATE\_DATE, LAST\_UPDATE\_LOGIN, ATTRIBUTE\_CATEGORY, ATTRIBUTE1, ATTRIBUTE2, ATTRIBUTE3, ATTRIBUTE4, ATTRIBUTE5, ATTRIBUTE6, ATTRIBUTE7, ATTRIBUTE8, ATTRIBUTE9, ATTRIBUTE10, ATTRIBUTE11, ATTRIBUTE12, ATTRIBUTE13, ATTRIBUTE14, ATTRIBUTE15)

VALUES

(10001, 101, '1000000001', 10001, '2015-01-01', 'CANCELLED', NULL, 206, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10002, 101, '1000000002', 10002, '2015-02-01', 'NEW', NULL, 206, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10003, 101, '1000000003', 10003, '2015-03-01', 'APPROVED', NULL, 206, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10004, 101, '1000000004', 10004, '2015-04-01', 'CANCELLED', NULL, 107, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10005, 101, '1000000005', 10005, '2016-05-01', 'CLOSED', NULL, 107, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10006, 101, '1000000006', 10006, '2015-06-01', 'APPROVED', NULL, 107, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10007, 101, '1000000007', 10007, '2015-07-01', 'UNAPPROVED', NULL, 107, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10008, 101, '1000000008', 10001, '2015-08-01', 'APPROVED', NULL, 176, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10009, 101, '1000000009', 10002, '2015-09-01', 'APPROVED', NULL, 176, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10010, 101, '1000000010', 10003, '2015-10-01', 'CANCELLED', NULL, 176, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10011, 101, '1000000011', 10004, '2015-11-01', 'APPROVED', NULL, 176, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10012, 101, '1000000012', 10005, '2015-07-01', 'CLOSED', NULL, 176, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10013, 101, '1000000013', 10006, '2016-08-01', 'UNAPPROVED', NULL, 202, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL),

(10014, 101, '1000000014', 10007, '2015-09-01', 'CLOSED', NULL, 202, '2013-10-01', 1, '2013-10-01', -1, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL);

select \* from order\_header;

drop table ORDER\_HEADER;

-- Order line table

CREATE TABLE ORDER\_LINE (

LINE\_ID BIGINT PRIMARY KEY,

HEADER\_ID BIGINT,

LINE\_NUMBER BIGINT,

CUSTOMER\_ID BIGINT,

ITEM\_ID BIGINT,

UNIT\_PRICE DECIMAL(10, 2),

QUANTITY DECIMAL(10, 2),

DESCRIPTION VARCHAR(255),

ADDITION1 VARCHAR(255),

ADDITION2 VARCHAR(255),

ADDITION3 VARCHAR(255),

ADDITION4 VARCHAR(255),

ADDITION5 VARCHAR(255),

CREATED\_BY VARCHAR(50),

CREATION\_DATE TIMESTAMP,

LAST\_UPDATED\_BY BIGINT,

LAST\_UPDATE\_DATE DATE,

LAST\_UPDATE\_LOGIN BIGINT,

ATTRIBUTE\_CATEGORY VARCHAR(30),

ATTRIBUTE1 VARCHAR(255),

ATTRIBUTE2 VARCHAR(255),

ATTRIBUTE3 VARCHAR(255),

ATTRIBUTE4 VARCHAR(255),

ATTRIBUTE5 VARCHAR(255),

ATTRIBUTE6 VARCHAR(255),

ATTRIBUTE7 VARCHAR(255),

ATTRIBUTE8 VARCHAR(255),

ATTRIBUTE9 VARCHAR(255),

ATTRIBUTE10 VARCHAR(255),

ATTRIBUTE11 VARCHAR(255),

ATTRIBUTE12 VARCHAR(255),

ATTRIBUTE13 VARCHAR(255),

ATTRIBUTE14 VARCHAR(255),

ATTRIBUTE15 VARCHAR(255)

);

select \* from order\_line;

drop table order\_line;



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Description automatically generated

A screenshot of a computer program

Description automatically generated

A group of grey squares with black text

Description automatically generated with medium confidence



A screenshot of a computer

Description automatically generated

#### NO.02

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

#### NO.03

Create a view：CUX\_OM\_HEADERS\_V

* view：CUX\_OM\_HEADERS\_V

CREATE VIEW ORDER\_VIEW AS

SELECT OH.HEADER\_ID, OH.ORDER\_NUMBER, OH.CUSTOMER\_ID, OH.ORDER\_DATE, OH.ORDER\_STATUS, OH.DESCRIPTION,

OH.CREATED\_BY, OH.CREATION\_DATE, OH.LAST\_UPDATED\_BY, OH.LAST\_UPDATE\_DATE, OH.LAST\_UPDATE\_LOGIN,

OH.ATTRIBUTE\_CATEGORY, OH.ATTRIBUTE1, OH.ATTRIBUTE2, OH.ATTRIBUTE3, OH.ATTRIBUTE4,

OH.ATTRIBUTE5, OH.ATTRIBUTE6, OH.ATTRIBUTE7, OH.ATTRIBUTE8, OH.ATTRIBUTE9, OH.ATTRIBUTE10,

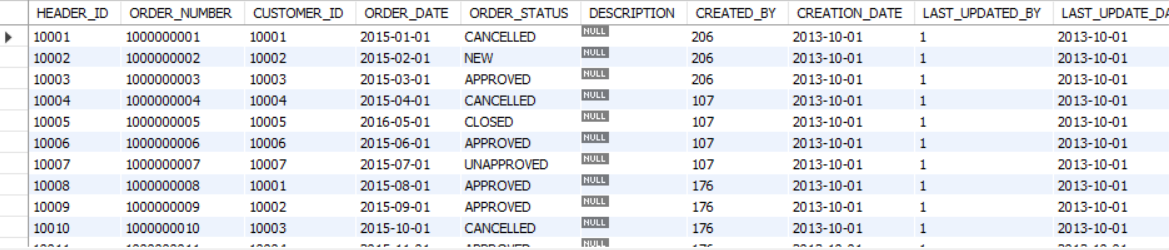
OH.ATTRIBUTE11, OH.ATTRIBUTE12, OH.ATTRIBUTE13, OH.ATTRIBUTE14, OH.ATTRIBUTE15,

C.CUSTOMER\_NUMBER, C.CUSTOMER\_NAME, C.TELEPHONE

FROM ORDER\_HEADER OH

JOIN CUSTOMER C ON OH.CUSTOMER\_ID = C.CUSTOMER\_ID;

select \* from order\_view



| Field | Type | Nullable | DefaultValue | Description |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| HEADER\_ID | BIGINT | N |  |  |
| 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 |  |  |
| CUSTOMER\_NUMBER | VARCHAR(30) |  |  |  |
| CUSTOMER\_NAME | VARCHAR(100) |  |  |  |
| TELEPHONE | VARCHAR(50) | Y |  |  |

#### NO.04

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

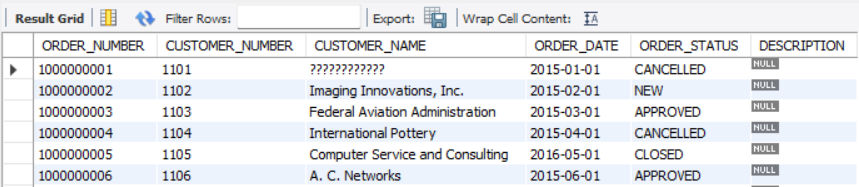
select o.ORDER\_NUMBER, c.CUSTOMER\_NUMBER, c.CUSTOMER\_NAME, o.ORDER\_DATE, o.ORDER\_STATUS, o.DESCRIPTION

from customer c

join order\_header o

on c.CUSTOMER\_ID = o.CUSTOMER\_ID

order by o.ORDER\_NUMBER asc;



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| order\_number | customer\_number | customer\_name | order\_date | order\_status | description |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

#### 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 oh.ORDER\_NUMBER, c.CUSTOMER\_NAME, oh.ORDER\_DATE, oh.ORDER\_STATUS, ol.LINE\_NUMBER, i.ITEM\_NAME

from order\_header oh

join order\_line ol

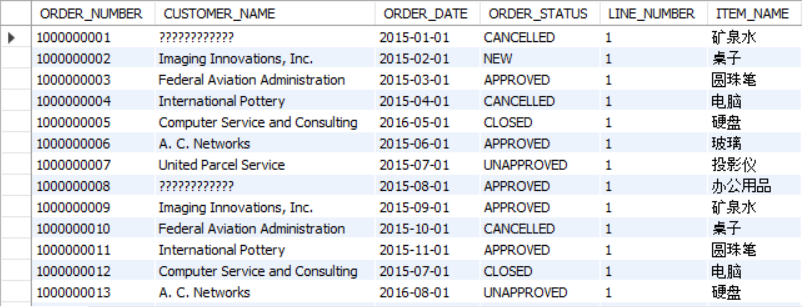
on oh.HEADER\_ID = ol.HEADER\_ID

join item i

on i.ITEM\_ID = ol.ITEM\_ID

join customer c

on oh.CUSTOMER\_ID = c.CUSTOMER\_ID;



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| order\_number | customer\_name | order\_date | order\_status | line\_number | item\_number | item\_name |
|  |  |  |  |  |  |  |

#### NO.06

Write SQL to display products purchased by customers

select c.CUSTOMER\_NUMBER, c.CUSTOMER\_NAME, i.ITEM\_NUMBER, i.ITEM\_NAME, i.UOM\_CODE

from customer c

join order\_header oh

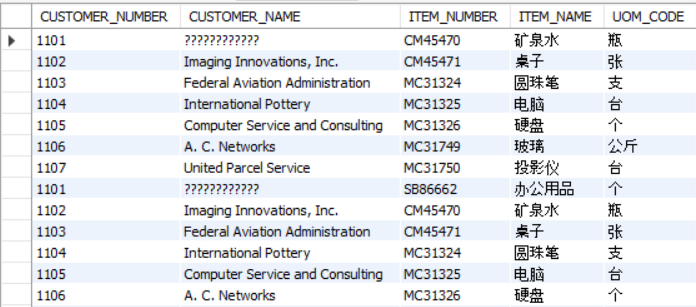
on c.CUSTOMER\_ID = oh.CUSTOMER\_ID

join order\_line ol

on ol.HEADER\_ID = oh.HEADER\_ID

join item i

on i.ITEM\_ID = ol.ITEM\_ID;



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| customer\_number | customer\_number | item\_number | item\_name | uom\_code |
| 1101 | 汉得信息技术股份有限公司 | SB86662 | 办公用品 | 个 |

#### 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 i.ITEM\_NUMBER, i.ITEM\_NAME, avg(ol.ITEM\_ID) as average\_unit\_price, max(ol.ITEM\_ID) as highest\_unit\_price, min(ol.ITEM\_ID) as lowest\_unit\_price

from item i

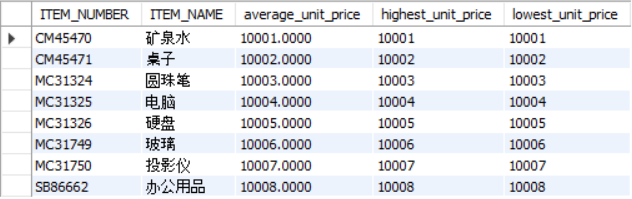
join order\_line ol

on i.ITEM\_ID = ol.ITEM\_ID

join order\_header oh

on oh.HEADER\_ID = ol.HEADER\_ID

group by ol.ITEM\_ID;



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| item\_number | item\_name | average\_unit\_price | highest\_unit\_price | lowest\_unit\_price |
|  |  |  |  |  |

#### NO.08

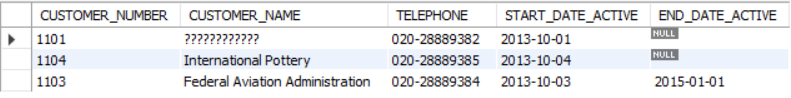
Write SQL to query customer information about canceled orders.

select c.CUSTOMER\_NUMBER, c.CUSTOMER\_NAME, c.TELEPHONE, c.START\_DATE\_ACTIVE, c.END\_DATE\_ACTIVE

from customer c

join order\_header o

on c.CUSTOMER\_ID = o.CUSTOMER\_ID

where o.ORDER\_STATUS = "CANCELLED";  


|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| customer\_number | customer\_name | telephone | start\_date\_active | end\_date\_active |
|  |  |  |  |  |

#### NO.09

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

select sum(ol.UNIT\_PRICE) \* sum(ol.QUANTITY) as "Total Sales"

from order\_header oh

join order\_line ol

where year(oh.order\_date) and oh.ORDER\_STATUS != "CANCELLED";



|  |
| --- |
| Total Sales |
|  |

#### 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.

CREATE INDEX idx\_item\_name ON item (ITEM\_NAME);  
