1. Create the following tables:
   1. **Table Name :** Client\_master

**Description:** Use to store information about client

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| client\_no | varchar2 | 6 | Primary key/first letter must start with ‘C’ |
| name | varchar2 | 20 | not null |
| address1 | varchar2 | 30 |  |
| address2 | varchar2 | 30 |  |
| city | varchar2 | 15 |  |
| state | varchar2 | 15 |  |
| pincode | number | 6 |  |
| bal\_due | number | 10,2 |  |

* 1. **Table Name:** product\_master

**Description:**  Use it store information about products.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| product\_no | varchar2 | 6 | Primary key/first letter must start with ‘P’ |
| description | varchar2 | 50 | not null |
| profit\_percent | number | 3,2 | not null |
| unit\_measure | varchar2 | 10 | not null |
| record\_lvl | number | 8 | not null |
| sell\_price | number | 8,2 | not null, cannot be 0 |
| cost\_price | number | 8,2 | not null, cannot be 0 |

* 1. **Table Name :** salesman\_master

**Description:** Use to store information about salesman working in the company

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| salesman\_no | varchar2 | 6 | Primary key/first letter must start with ‘S’ |
| salesman\_name | varchar2 | 20 | not null |
| Address1 | varchar2 | 30 | not null |
| Address2 | varchar2 | 30 |  |
| city | varchar2 | 20 |  |
| pincode | varchar2 | 6 |  |
| state | varchar2 | 20 |  |
| sal\_amt | number | 8,2 | not null, cannot be 0 |
| tgt\_to\_get | number | 6,2 | not null, cannot be 0 |
| ytd\_sales | number | 6,2 | not null |
| remarks | varchar2 | 60 |  |

* 1. **Table Name :** sales\_order

**Description:** Use to store information about order

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| s\_order\_no | varchar2 | 6 | Primary key/first letter must start with ‘O’ |
| s\_order\_date | date |  |  |
| client\_no | varchar2 | 6 | Foreign key references client\_no of client\_master table |
| dely\_addr | varchar2 | 25 |  |
| salesman\_no | varchar2 | 6 | Foreign key references salesman\_no of salesman\_master table |
| dely\_type | char | 1 | delivery :part (P) / full (F), Default ‘F’ |
| billed\_yn | char | 1 | delivery :part (Y) / full (N), Default ‘N’ |
| dely\_date | date |  | cannot be less than s\_order\_date |
| order\_status | varchar2 | 10 | values (‘in process’, ’Fulfilled’, ’BackOrder’, ’Canceled’) |

* 1. **Table Name:** sales\_order\_details

**Description:** Use to store information about products ordered.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| s\_order\_no | varchar2 | 6 | Foreign key references s\_order\_no of sales\_order table |
| product\_no | varchar2 | 6 | Foreign key references product\_no of product\_master table |
| qty\_ordered | number | 8 |  |
| qty\_disp | number | 8 |  |
| product\_rate | number | 10,2 |  |

* 1. **Table Name:** Challan\_Header

**Description:** Use to store information about challans made for the orders.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| challan\_no | varchar2 | 6 | Primary Key/First Two letters must start with ‘CH’ |
| s\_order\_no | varchar2 | 6 | Foreign Key references s\_order\_no of sales\_order table |
| challan\_date | date |  | not null |
| billed\_yn | char | 1 | values(‘Y’,’N’)Default ‘N’ |

* 1. **Table Name:** Challan\_details

**Description:** use to store information about challan details

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| challan\_no | varchar2 | 6 | Primary Key/Foreign Key references challan\_no of challan\_header table. |
| product\_no | varchar2 | 6 | Primary Key/Foreign Key references product\_no of product\_master table |
| qty\_disp | number | 4,2 | not null |

2. Insert the following data into their respective tables using the SQL insert statement:

**1. Data for client\_master table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Client No** | **Name** | **City** | **Pin Code** | **State** | **Bal\_Due** |
| C00001 | Ivan Bayross | Bombay | 400054 | Maharashtra | 15000 |
| C00002 | Vandana Saitwal | Madras | 780001 | Tamil Nadu | 0 |
| C00003 | Pramada Jaguste | Bombay | 400057 | Maharashtra | 5000 |
| C00004 | Basu Navindgi | Bombay | 400056 | Maharashtra | 0 |
| C00005 | Ravi Sreedharan | Delhi | 100001 | Delhi | 2000 |
| C00006 | Rukmini | Bombay | 400050 | Maharashtra | 0 |

**2. Data for Product\_master Table:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ProductNo** | **Description** | **Profit %** | **UOM** | **qty\_on\_hand** | **Reorder lel** | **Sell Price** | **Cost Price** |
| P00001 | 1.44 Floppies | 5 | Piece | 100 | 20 | 525 | 500 |
| P03453 | Monitors | 6 | Piece | 10 | 3 | 12000 | 11280 |
| P06734 | Mouse | 5 | Piece | 20 | 5 | 1050 | 1000 |
| P07865 | 1.22 Floppies | 5 | Piece | 100 | 20 | 525 | 500 |
| P07868 | Keyboards | 2 | Piece | 10 | 3 | 3150 | 3050 |
| P07885 | CD Drive | 2.5 | Piece | 10 | 3 | 5250 | 5100 |
| P07965 | 540 HDD | 4 | Piece | 10 | 3 | 8400 | 8000 |
| P07975 | 1.44 Drive | 5 | Piece | 10 | 3 | 1050 | 1000 |
| P08865 | 1.22 Drive | 5 | Piece | 2 | 3 | 1050 | 1000 |

3. Data for Salesman\_master table:

**3. Data for salesman\_master table:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Salesman\_ no | Salesman\_ name | Address1 | Address2 | City | Pin code | State | sal\_amt | Tgt\_to Get | Ytd sales | Remarks |
| S00001 | Kiran | A/14 | Worli | Bombay | 400002 | MAH | 3000 | 100 | 50 | Good |
| S00002 | Manish | 65 | Nariman | Bombay | 400001 | MAH | 3000 | 200 | 100 | Good |
| S00003 | Ravi | P-7 | Bandra | Bombay | 400032 | MAH | 3000 | 200 | 100 | Good |
| S00004 | Ashish | A/5 | Juhu | Bombay | 400044 | MAH | 3500 | 200 | 150 | Good |

**4. Data for sales\_order table :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S\_order\_no** | **S\_order\_date** | **Client No** | **Dely Type** | **Bill Yn** | **salesman no** | **Dely Date** | **Order Status** |
| O19001 | 12-Jan-1996 | C00001 | F | N | S00001 | 20-Jan-1996 | IP |
| O19002 | 25-Jan-1996 | C00002 | P | N | S00002 | 27-Jan-1996 | C |
| O46865 | 18-Feb-1996 | C00003 | F | Y | S00003 | 20-Feb-1996 | F |
| O19003 | 03-Apr-1996 | C00001 | F | Y | S00001 | 07-Apr-1996 | F |
| O46866 | 20-May-1996 | C00004 | P | N | S00002 | 22-May-1996 | C |
| O10008 | 24-May-1996 | C00005 | F | N | S00004 | 26-May-1996 | IP |

**5. Data for sales\_order\_details table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **s\_order\_no** | **product\_no** | **Qty ordered** | **qty\_Disp** | **Product rate** |
| O19001 | P00001 | 4 | 4 | 525 |
| O19001 | P07965 | 2 | 1 | 8400 |
| O19001 | P07885 | 2 | 1 | 5250 |
| O19002 | P00001 | 10 | 0 | 525 |
| O46865 | P07868 | 3 | 3 | 3150 |
| O46865 | P07885 | 3 | 1 | 5250 |
| O46865 | P00001 | 10 | 10 | 525 |
| O46865 | P03453 | 4 | 4 | 1050 |
| O19003 | P03453 | 2 | 2 | 1050 |
| O19003 | P06734 | 1 | 1 | 12000 |
| O46866 | P07965 | 1 | 0 | 8400 |
| O46866 | P07975 | 1 | 0 | 1050 |
| O10008 | P00001 | 10 | 5 | 525 |
| O10008 | P07975 | 5 | 3 | 1050 |

**6. Data for challan\_header table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Challan No** | **S Order No** | **Challan Date** | **Billed** |
| CH9001 | O19001 | 12-Dec-1995 | Y |
| CH6865 | O46865 | 12-Nov-1995 | Y |
| CH3965 | O10008 | 12-Oct-1995 | Y |

**7. Data for challan\_details table:**

|  |  |  |
| --- | --- | --- |
| **Challan No** | **Product No** | **Qty Disp** |
| CH9001 | P00001 | 4 |
| CH9001 | P07965 | 1 |
| CH9001 | P07885 | 1 |
| CH6865 | P07868 | 3 |
| CH6865 | P03453 | 4 |
| CH6865 | P00001 | 10 |
| CH3965 | P00001 | 5 |
| CH3965 | P07975 | 2 |

**Hands-on Exercise**

1. Add the following record into the challan\_details table and check if the records gets added or not. Note the observation for each of them

|  |  |  |
| --- | --- | --- |
| CH9001 | P00001 | 5 |
| P785341 | P06734 | 9 |
| P00001 | CH9001 | 1 |

1. Drop the table product\_master. Can the product\_master be dropped. If not, Note the error message.
2. Drop the table challan\_details, challan\_header and product\_master in specified sequence.
3. What conclusions can you draw, performing the above tasks?

**SIXTY SELF REVIEW SQL SENTENCE CONSTRUCTS FOR PRACTICE**

1. **Single table retrieval**
2. Find out the names of all the clients.
3. Print the entire client\_master table.
4. Retrieve the list of names and the cities of all the clients
5. List the various products available from the product\_master table.
6. Find the names of all clients having ‘a’ as the second letter in their table.
7. Find the names of all clients who stay in a city whose second letter is ‘a’
8. Find out the clients who stay in a city ‘Bombay’ or city ‘Delhi’ or city ‘Madras’.
9. List all the clients who are located in Bombay.
10. Print the list of clients whose bal\_due are greater than value 10000
11. Print the information from sales\_order table of orders placed in the month of January.
12. Display the order information for client\_no ‘C00001’ and ‘C00002’
13. Find the products with description as ‘1.44 Drive’ and ‘1.22 Drive’
14. Find the products whose selling price is greater than 2000 and less than or equal to 5000
15. Find the products whose selling price is more than 1500 and also find the new selling price as original selling price \* 15
16. Rename the new column in the above query as new\_price
17. Find the products whose cost price is less than 1500
18. List the products in sorted order of their description.
19. Calculate the square root the price of each product.
20. Divide the cost of product ‘540 HDD’ by difference between its price and 100
21. List the names, city and state of clients not in the state of Maharashtra
22. List the product\_no, description, sell\_price of products whose description begin with letter ‘M’
23. List all the orders that were canceled in the month of May.
24. **Set Functions and Concatenation :**
25. Count the total number of orders.
26. Calculate the average price of all the products.
27. Calculate the minimum price of products.
28. Determine the maximum and minimum product prices. Rename the title as max\_price and min\_price respectively.
29. Count the number of products having price greater than or equal to 1500.
30. Find all the products whose qty\_on\_hand is less than reorder level.
31. Print the information of client\_master, product\_master, sales\_order table in the following formate for all the records

{cust\_name} has placed order {order\_no} on {s\_order\_date}.

1. **Having and Group by:**
2. Print the description and total qty sold for each product.
3. Find the value of each product sold.
4. Calculate the average qty sold for each client that has a maximum order value of 15000.00
5. Find out the total sales amount receivable for the month of jan. it will be the sum total of all the billed orders for the month.
6. Print the information of product\_master, order\_detail table in the following format for all the records

{Description} worth Rs. {Total sales for the product} was sold.

1. Print the information of product\_master, order\_detail table in the following format for all the records

{Description} worth Rs. {Total sales for the product} was produced in the month of {s\_order\_date} in month formate.

1. **Nested Queries :**
2. Find the product\_no and description of non-moving products.
3. Find the customer name, address1, address2, city and pin code for the client who has placed order no ‘O19001’
4. Find the client names who have placed orders before the month of May, 1996
5. Find out if product ‘1.44 Drive’ is ordered by client and print the client\_no, name to whom it is was sold.
6. Find the names of clients who have placed orders worth Rs. 10000 or more.
7. **Queries using Date:**
8. Display the order number and day o which clients placed their order.
9. Display the month (in alphabets) and date when the order must deliver.
10. Display the s\_order\_date in the format ‘DD-MM-YY’. E.g. 12-February-1996
11. Find the date, 15 days after today’s date.
12. Find the number of days elapsed between today’s date and the delivery date of the orders placed by the clients.
13. **Table Updations:**
14. Change the s\_order\_date of client\_no ‘C00001’ to 24/07/96.
15. Change the selling price of ‘1.44 Floppy Drive’ to Rs. 1150.00
16. Delete the records with order number ‘O19001’ from the order table.
17. Delete all the records having delivery date before 10th July’96
18. Change the city of client\_no ‘C00005’ to ’Bombay’.
19. Change the delivery date of order number ‘O10008” to 16/08/96
20. Change the bal\_due of client\_no ‘C00001’ to 1000
21. Change the cost price of ‘1.22 Floppy Drive’ to Rs. 950.00.