

Assignment – 2

General Hardware Database:

Creating table :

```
create table office
(
officeNumber int primary key,
telephone integer,
sizee integer
);

create table Sales_Person
(
salesPersonNumber int primary key,
salesPersonName varchar2(30),
commPercentage int,
yearHire int,
officeNumber int,
FOREIGN KEY (officeNumber) REFERENCES office(officeNumber)
);

create table Customer
(
CustomerNumber int primary key,
CustomerName varchar2(30),
salesPersonNumber int,
headQuarterCity varchar2(30),
FOREIGN KEY (salesPersonNumber) REFERENCES Sales_Person(salesPersonNumber)
);

create table Customer_Employee
(
CustomerNumber int,
EmployeeNumber int primary key,
EmployeeName varchar2(30),
Title varchar2(30),
FOREIGN KEY (customerNumber) REFERENCES customer(customerNumber)
);

create table Product
(
productNumber int primary key,
productName varchar2(30),
unitPrice int
);
```

```

create table Sales
(
salesPersonNumber int,
productNumber int,
quantity int,
FOREIGN key (salesPersonNumber) references Sales_Person(SalesPersonNumber),
FOREIGN KEY (productNumber) references product(productNumber)
);

```

Inserting Values

```

insert into office values(102, 06112102, 10);
insert into office values(103, 06112103, 10);
insert into office values(104, 06112104, 10);
insert into office values(105, 06112105, 10);

insert into Sales_Person values(186, 'PVSR', 80, 2001, 102);
insert into Sales_Person values(135, 'TR', 80, 2010, 103);
insert into Sales_Person values(261, 'BU', 80, 1990, 104);
insert into Sales_Person values(150, 'RR', 8, 2020, 105);
insert into Sales_Person values(196, 'adams', 10, 2020, 105);

insert into customer values(800, 'Cust01', 186, 'Mumbai');
insert into customer values(1000, 'Cust02', 135, 'New York');
insert into customer values(1800, 'Cust03', 186, 'Chicago');
insert into customer values(1200, 'Cust04', 261, 'New York');
insert into customer values(1750, 'Cust05', 186, 'Mumbai');
insert into customer values(1525, 'Cust06', 135, 'New York');
insert into customer values(1700, 'Cust07', 150, 'Chicago');
insert into customer values(1500, 'Cust08', 186, 'New York');
insert into customer values(1525, 'Cust09', 135, 'New York');

insert into customer_employee values(800, 001, 'EMP01', 'T1');
insert into customer_employee values(1000, 002, 'EMP02', 'T2');
insert into customer_employee values(1800, 012, 'EMP03', 'T3');
insert into customer_employee values(1200, 005, 'EMP04', 'T1');
insert into customer_employee values(1750, 006, 'EMP05', 'T2');
insert into customer_employee values(1500, 101, 'EMP06', 'T3');
insert into customer_employee values(1800, 150, 'EMP07', 'T3');
insert into customer_employee values(1700, 520, 'EMP08', 'T3');

INSERT INTO product VALUES(21765, 'AMZ001', 150);
INSERT INTO product VALUES(21786, 'AMZ003', 200);
INSERT INTO product VALUES(21215, 'AMZ004', 100);
INSERT INTO product VALUES(911804, 'AMZ005', 50);
INSERT INTO product VALUES(184136, 'AMZ006', 10);

```

```
INSERT INTO product VALUES(21115, 'AMZ007',100);
INSERT INTO product VALUES(19056, 'AMZ008',100);
```

```
INSERT INTO SALES VALUES(186,21765,2500);
INSERT INTO SALES VALUES(135,21786,4000);
INSERT INTO SALES VALUES(186,21215,2000);
INSERT INTO SALES VALUES(261,19056,2500);
INSERT INTO SALES VALUES(135,911804,2000);
INSERT INTO SALES VALUES(150,184136,3500);
INSERT INTO SALES VALUES(186,21115,1000);
INSERT INTO SALES VALUES(196,21115,1000);
INSERT into SALES VALUES(196, 19056, 2500);
```

Queries:

- 1 Find the commission percentage and year of hire of salesperson number 186.

```
select commPercentage, yearHire from sales_person where salesPersonNumber=186;
```

	COMMPERCENTAGE	YEARHIRE
1	80	2001

- 2 List the salesperson numbers and salesperson names of those salespersons who have a commission percentage of 10.

```
select salesPersonNumber, salesPersonName from sales_person
where commpercentage=10;
```

	SALESPERSONNUMBER	SALESPERSONNAME
1	196	adams

- 3 List the salesperson number and salesperson name of all of the salespersons

```
select salesPersonNumber, salesPersonName from sales_person;
```

	SALESPERSONNUMBER	SALESPERSONNAME
1	186	PVSR
2	135	TR
3	261	BU
4	150	RR
5	196	adams

- 4 List the salesperson numbers, salesperson names, and commission percentages of the salespersons whose commission percentage is less than 12.

```
select salesPersonNumber, salesPersonName, commPercentage
from sales_person
where commPercentage<12;
```

	SALESPERSONNUMBER	SALESPERSONNAME	COMMPERCENTAGE
1	150	RR	8
2	196	adams	10

- 5 List the customer numbers and headquarters cities of the customers that have a customer number of at least 1700.

```
select customerNumber, headQuarterCity
from customer where customernumber<=1700;
```

	CUSTOMERNUMBER	HEADQUARTERCITY
1	800	Mumbai
2	1000	New York
3	1200	New York
4	1500	New York
5	1525	New York
6	1700	Chicago

- 6 List the customer numbers, customer names, and headquarters cities of the customers that are headquartered in New York and that have a customer number higher than 1500.

```
select customerNumber, customerName, headQuarterCity
from customer where customernumber>1500 and headquartercity='New York';
```

	CUSTOMERNUMBER	CUSTOMERNAME	HEADQUARTERCITY
1	1525	1525	New York

- 7 List the customer numbers, customer names, and headquarters cities of the customers that are headquartered in New York or that have a customer number higher than 1500.

```
select customerNumber, customerName, headQuarterCity
from customer where customernumber>1500 or headquartercity='New York';
```

	CUSTOMERNUMBER	CUSTOMERNAME	HEADQUARTERCITY
1	1000	1000	New York
2	1800	1800	Chicago
3	1200	1200	New York
4	1750	1750	Mumbai
5	1525	1525	New York
6	1700	1700	Chicago
7	1500	1500	New York

- 8 List the customer numbers, customer names, and headquarters cities of the customers that are headquartered in New York or that satisfy the two conditions of having a customer number higher than 1500 and being headquartered in Atlanta.

```
select CustomerNumber, customerName,HeadQuarterCity
from customer
where headquartercity='New York' or (customernumber>1500 and headquartercity
='Atlanta');
```

	CUSTOMERNUMBER	CUSTOMERNAME	HEADQUARTERCITY
1	1000	Cust02	New York
2	1200	Cust04	New York
3	1525	Cust06	New York
4	1500	Cust08	New York

9 Which cities serve as headquarters cities for General Hardware customers?

```
select headquartercity from customer group by headquartercity;
```

HEADQUARTERCITY
1 Chicago
2 Mumbai
3 New York

10 Find the customer numbers, customer names, and headquarters cities of those customers with customer numbers greater than 1000. List the results in alphabetic order by headquarters cities.

```
select customerNumber, customerName, headQuarterCity
from customer where customerNumber>1000 order by headquartercity;
```

	CUSTOMERNUMBER	CUSTOMERNAME	HEADQUARTERCITY
1	1700	Cust07	Chicago
2	1800	Cust03	Chicago
3	1750	Cust05	Mumbai
4	1500	Cust08	New York
5	1200	Cust04	New York
6	1525	Cust06	New York

11 Find the average number of units of the different products that Salesperson 137 sold (i.e., the average of the quantity values in the first three records of the SALES table).

```
select productNumber, avg(quantity) from sales
where salesPersonNumber=137 group by productNumber;
```

12 What is the largest number of units of Product Number 21765 that any individual salesperson has sold?

```
select max(quantity) from sales
where productNumber=21765;
```

MAX(QUANTITY)
1 2500

13 How many salespersons have sold Product Number 21765?

```
select count(*) from sales where productnumber=21765;
```

	1	COUNT(*)	1
--	---	----------	---

14 Find the total number of units of all products sold by each salesperson.

```
select salesPersonNumber, sum(quantity)
from sales group by salesPersonNumber;
```

	SALESPERSONNUMBER	SUM(QUANTITY)
1	135	6000
2	261	2500
3	196	1000
4	186	5500
5	150	3500

15 Find the total number of units of all products sold by each salesperson whose salesperson number is at least 150.

```
select salesPersonNumber, sum(quantity)
from sales where salesPersonNumber>150 group by salesPersonNumber;
```

	SALESPERSONNUMBER	SUM(QUANTITY)
1	261	2500
2	196	1000
3	186	5500

16 Find the total number of units of all products sold by each salesperson whose salesperson number is at least 150.

```
select salesPersonNumber, sum(quantity)
from sales where salesPersonNumber>150 group by salesPersonNumber;
```

	SALESPERSONNUMBER	SUM(QUANTITY)
1	261	2500
2	196	1000
3	186	5500

17 Find the total number of units of all products sold by each salesperson whose salesperson number is at least 150. Include only salespersons whose total number of units sold is at least 5000

```
select salesPersonNumber, sum(quantity) from sales
where salesPersonNumber>150 group by salesPersonNumber having sum(quantity)>
5000;
```

	SALESPERSONNUMBER	SUM(QUANTITY)
1	186	5500

18	Find the name of the salesperson responsible for Customer Number 1525.
<pre>select salesPersonName from sales_person where salespersonnumber= (select salesPersonNumber from customer where customerNumber=1525);</pre>	
<div>SALESPERSONNAME</div> <div>1 TR</div>	

19	List the names of the products of which salesperson Adams has sold more than 2000 units
<pre>select productname from product where productnumber = (select productNumber from sales where quantity>2000 and salesPersonNumber= (select salesPersonNumber from sales_Person where salesPersonName='adams'));</pre>	
<div>PRODUCTNAME</div> <div>1 AMZ008</div>	

20	Which salespersons with salesperson numbers greater than 200 have the lowest commission percentage?" (We'll identify salespersons by their salesperson number.)
<pre>select salesPersonName from sales_person where commpercentage= (select min(commpercentage) from sales_person where salespersonnumber>200);</pre>	
<div>SALESPERSONNAME</div> <div>1 PVSR</div> <div>2 TR</div> <div>3 BU</div>	

Book Store Database

Creating Table

```
create table Publisher
(
PublisherName varchar(20) primary key,
City varchar(20),
Country varchar(20),
TelephoneNumber int,
YaerOfFoundation int
);

create table Author
(AuthorNumber int primary key,
AuthorName varchar(20),
```

```

DateOfBirth date
);

create table Book
(BookNumber int primary key,
BookName varchar(20),
PublishedYear int,
Page int,
price int,
PublisherName varchar(20),
foreign key(PublisherName) references Publisher(PublisherName)
);

create TABLE B_Customer
(CustomerNumber int primary key,
CustomerName varchar(20),
Street varchar(20),
City varchar(20),
State varchar(20),
Country varchar(20)
);

create table Writing
(BookNumber int,
AuthorNumber int,
foreign key(BookNumber) references Book(BookNumber),
foreign key(AuthorNumber) references Author(AuthorNumber)
);

create table Sale
(BookNumber int,
CustomerNumber int,
date_of_sale Date,
Price int,
Quantity int,
foreign key(BookNumber) references Book(BookNumber),
foreign key(CustomerNumber) references B_customer(CustomerNumber)
);

```

Inserting Values

```

INSERT INTO Publisher values
('Steve', 'Singapore', 'Singapore', 253253253, 2011);
INSERT INTO Publisher values
('Adam', 'City12', 'Singapore', 253225478, 2019);
INSERT INTO Publisher values

```



```

('Mark', 'Rio', 'Brazil', 253255456, 2016);
INSERT INTO Publisher values
('Stefen', 'Singapore', 'Norway', 253543253, 2011);
INSERT INTO Publisher values
('Saad', 'Warangal', 'India', 253253288, 1991);
INSERT INTO Publisher values
('KKD', 'Nairobi', 'Kenya', 253253356, 2000);
INSERT INTO Publisher values
('Singh', 'Auckland', 'NewZealand', 253299999, 1988);
INSERT INTO Publisher values
('Abhay', 'Nashik', 'India', 234234234, 2000);
INSERT INTO Publisher values
('London Publishing', 'London', 'England', 123456789, 2012);
INSERT INTO Publisher values
('Avi', 'Nashik', 'Paris', 234238784, 2010);
INSERT INTO Publisher values
('Nums', 'London', 'France', 123545289, 2002);

INSERT INTO Author values(201, 'A101', '10-Jan-2020');
INSERT INTO Author values(202, 'A102', '10-Jan-2021');
INSERT INTO Author values(203, 'A103', '10-Jan-1351');
INSERT INTO Author values(204, 'A104', '10-Jan-1911');
INSERT INTO Author values(205, 'A105', '10-Jan-1355');
INSERT INTO Author values(206, 'A106', '10-Jan-2019');
INSERT INTO Author values(207, 'A107', '10-Jan-2045');
INSERT INTO Author values(208, 'A108', '10-Jan-2000');
INSERT INTO Author values(209, 'A109', '10-Jan-1911');

INSERT INTO book values(001, 'book1', 2010,1000,500,'London Publishing');
INSERT INTO book values(002, 'book2', 1947,800,4000,'Abhay');
INSERT INTO book values(003, 'book3', 1917,700,400,'Steve');
INSERT INTO book values(004, 'book4', 1927,600,800,'Stefen');
INSERT INTO book values(005, 'book5', 1907,400,500,'Saad');
INSERT INTO book values(006, 'book6', 2007,200,1540,'KKD');
INSERT INTO book values(007, 'book7', 2017,100,40,'Singh');
INSERT INTO book values(008, 'book8', 2020,800,600,'Mark');
INSERT INTO book values(009, 'book9', 2007,400,40,'Avi');
INSERT INTO book values(010, 'book10', 2020,800,600,'Nums');

insert into B_Customer values
(301, 'Cust001', 'STR01', 'Nashik','Maharashtra', 'India');
insert into B_Customer values
(302, 'Cust002', 'STR02', 'AuckLand','NZS1', 'NewZealand');
insert into B_Customer values
(303, 'Cust003', 'STR022', 'Rio','BZS1', 'Brazil');
insert into B_Customer values
(304, 'Cust004', 'STR012', 'Rio','BZS1', 'Brazil');
insert into B_Customer values

```

```
(305, 'Cust005', 'STR032', 'Warangal','Ind1', 'India');

insert into Sale values(2, 302, '11-Jan-2000', 300, 20);
insert into Sale values(1, 301, '12-Feb-2001', 300, 50);
insert into Sale values(3, 303, '11-Jan-1990', 3000, 10);
insert into Sale values(4, 304, '12-Feb-1911', 800, 70);
insert into Sale values(5, 305, '11-Jan-1990', 3000, 110);
insert into Sale values(6, 301, '12-Feb-1911', 1800, 70);
insert into Sale values(7, 303, '11-Jan-1970', 130, 50);
insert into Sale values(8, 302, '12-Feb-1941', 80, 70);

insert into Writing values(1, 201);
insert into Writing values(2, 202);
insert into Writing values(3, 203);
insert into Writing values(4, 204);
insert into Writing values(5, 205);
insert into Writing values(6, 206);
insert into Writing values(7, 207);
insert into Writing values(8, 208);
```

Queries:

1	Find the book number, book name, and number of pages of all the books published by London Publishing Ltd. List the results in order by book name.								
<pre>select bookNumber, bookName, page from book where publisherName='London Publishing';</pre>									
<table><tr><th></th><th>BOOKNUMBER</th><th>BOOKNAME</th><th>PAGE</th></tr><tr><td>1</td><td>1</td><td>book1</td><td>1000</td></tr></table>			BOOKNUMBER	BOOKNAME	PAGE	1	1	book1	1000
	BOOKNUMBER	BOOKNAME	PAGE						
1	1	book1	1000						

2	How many books of at least 400 pages does Good Reading Bookstores carry that were published by publishers based in Paris, France?				
<pre>select COUNT(b.BookNumber) "No. of books" FROM book b, publisher p where b.publishername=p.publishername and (p.country='Paris' or p.country='France') and b.page>=400;</pre>					
<table><tr><th></th><th>No. of books</th></tr><tr><td>1</td><td>2</td></tr></table>			No. of books	1	2
	No. of books				
1	2				

3	List the publishers in Belgium, Brazil, and Singapore that publish books written by authors who were born before 1920.
<pre>select * from publisher p where (p.country='Belgium' or p.country='Brazil' or p.country='Singapore') and (p.publisherName in (select publisherName from book where bookNumber in (select bookNumber from writing where authorNumber in (select authorNumber from author a where a.dateOfBirth<='01-Jan- 1920'))));</pre>	

PUBLISHERNAME	CITY	COUNTRY	TELEPHONENUMBER	YAEROFFFOUNDATION
1 Steve	Singapore	Singapore	253253253	2011

- 4 How many books did each publisher in India, Norway; Nairobi, Kenya; and Auckland, New Zealand, publish in 2001?

```
select p.publishername,count(b.bookNumber) from publisher p , book b
where b.publishedyear = 2007 and b.publishername= p.publishername and (p.cou
ntry='India' or p.country='Norway' or (p.city='Nairobi' and p.country='Kenya
') or (p.city='Auckland' and p.country='NewZealand'))
GROUP by p.publishername;
```

PUBLISHERNAME	COUNT(B.BOOKNUMBER)
1 KKD	1

- 5 Which publisher published the book that has the earliest publication year among all the books that Good Reading Bookstores carries?

```
select publisherName from book
where publishedYear=(select min(publishedYear) from book);
```

PUBLISHERNAME
1 Saad

- 1 Find the total number of books bought by each customer whose customer number is at least 302.

```
select customerNumber, sum(quantity) from sale
where customernumber>302 group by customernumber;
```

CUSTOMERNUMBER	SUM(QUANTITY)
1	305
2	303
3	304

- 2 Find the total number of books bought by each customer whose customer number is at least 302. Include only customers who bought at least 60 books.

```
select customerNumber, sum(quantity) from sale
group by customernumber having customernumber>302 and sum(quantity)>60;
```

CUSTOMERNUMBER	SUM(QUANTITY)
1	305
2	304

- 3 Find the name of the customers who have bought book number 5.

```
select customerName, s.booknumber from sale s inner join B_customer c
on c.customerNumber = s.customerNumber where bookNumber>5;
```

	CUSTOMERNAME	BOOKNUMBER
1	Cust001	6
2	Cust002	8
3	Cust003	7

- 4 List the names of the books which customer "Cust001" has bought more than 50 units.

```
select bookName from B_customer c, sale s, book b
where c.customerName='Cust001' and s.customerNumber=c.customerNumber
and b.bookNumber=5 and s.quantity>50;
```

	BOOKNAME
1	book5

- 5 Which customers with customer numbers greater than 350 have bought the least book?

```
select customerName from B_customer c, sale s where s.customerNumber>2
and s.customerNumber=c.customerNumber
and s.quantity=(select min(quantity) from sale);
```

	CUSTOMERNAME
1	Cust003