

International Islamic University Chittagong

Department of Computer Science and Engineering

Course Title : Database Management System Lab

Course Code : CSE-2424

Submitted To:

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Submitted By:

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Section : 4AM

Semester : 4th

Department : CSE

Date of submission : 18/09/2020

Project Name : **Cargo Booking Software**

International Islamic University Chittagong
Department of CSE

C181029

Project to be submitted as part of the completion of Database Management System Lab

- | | |
|------------------------------------------|-----------------------------------------------|
| > Human Resource management system | > Mobile Banking Project |
| > Real Estate Portal | > Restaurant Application |
| > Diagnostic Lab Reporting System | > Smart Health consulting system |
| > Loan Application & Verification System | > Automated Canteen Ordering System |
| > Multi Agent Shopping System | > Universal Ticketing Project |
| > Matrimonial Portal Project | > Efficient Doctor Patient Portal |
| > College management system | > Online Bookstore System |
| > Mobile Store software | > Online Blood Bank System |
| > Tourist Guide Project | > Train Ticketing System |
| > Park Booking System | > Bus Pass System |
| > Furniture Shopping | > Hotel Management |
| > Grocery Shopping | > Online recruitment system |
| > Car Sales And Inventory Store Project | > examination grading system for high schools |
| > Education Assignment Dashboard | > Medical Information System (MIS) |
| > Cargo Booking Software | > Sales Order Processing and Invoicing |

REQUIREMENTS:

1. Gather the requirements and create conceptual model for your chosen domain. According to model, create the necessary relations including all the possible constraints and attributes.
2. Input the required data in the above relations (Create at least Five row for each relation)
3. Write DML statements for:
 - a) Searching Data in possible ways (At least Ten ways) from individual table
 - b) Searching Data in possible ways (At least Five ways) from multiple tables
 - c) All types of Sub-Queries
 - d) Any type of query (As your wish)

Deadline: Date of Final Exam

Mode of submission: Both Soft and Hard Copy (File)

Email Address to be used for soft copy: amaniiuc@live.com

N.B: Copying from each other is strictly prohibited, if found, the assignment will be treated as cancel.

Mohammad Aman-Ullah

Assistant Professor, Dept. of CSE, IIUC



আন্তর্জাতিক ইসলামী বিশ্ববিদ্যালয় চট্টগ্রাম
International Islamic University Chittagong

STUDENT ID CARD



Name : Mahbubul Hasan

ID No.: C181029

Academic Year : Spring 2018

Validity : Autumn 2021

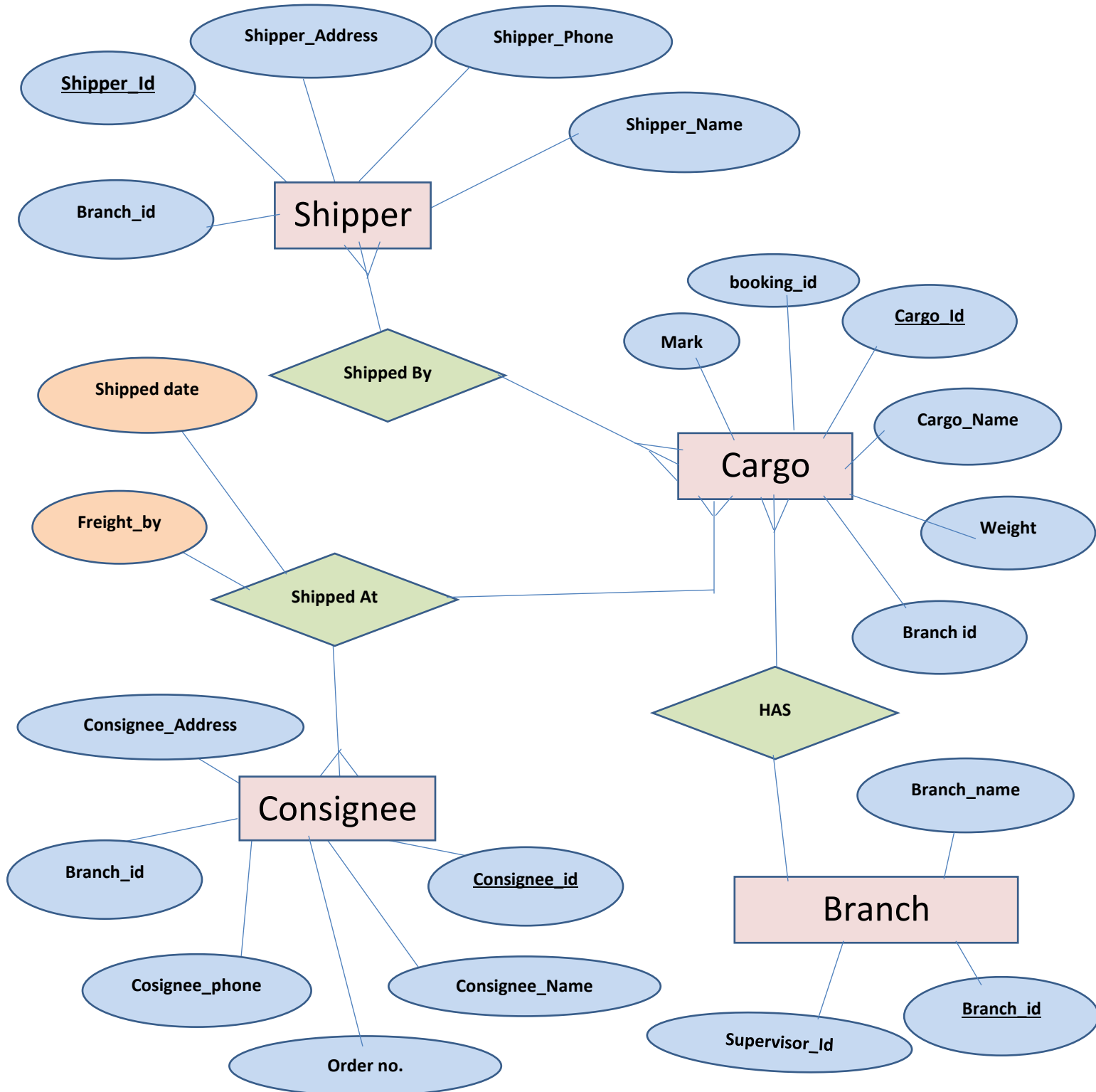
Nationality : Bangladeshi

Director, ACAD

Program : CSE

Cargo Booking Software

ER Diagram



Shipper Table:

```
CREATE TABLE shipper(  
    shipper_id int NOT NULL,  
    shipper_name varchar(50) NOT NULL,  
    shipper_address varchar(50),  
    shipper_phone varchar(20),  
    branch_id INT,  
    PRIMARY KEY(shipper_id)  
);  
  
ALTER TABLE shipper  
ADD FOREIGN KEY(branch_id) REFERENCES branch(branch_id) ON DELETE SET NULL;
```

Data:

NB:Here I inserted data in branch table also because shipper table contains a foreign key from branch table.

```
INSERT INTO shipper VALUES (201, 'Sakib','Chittagong','01812346095',NULL);
```

```
INSERT INTO branch VALUES (301,'Chittagong_branch',201);
```

```
update shipper set branch_id=301
```

```
where shipper_id=201;
```

```
INSERT INTO shipper VALUES (202, 'Emon','Chittagong','01812346196',301);
```

```
INSERT INTO shipper VALUES (203, 'Arif','Chittagong','01817846198',301);
```

```
INSERT INTO shipper VALUES (204, 'Sagor','Dhaka','01712396097',NULL);
```

```
INSERT INTO branch VALUES (302,'Dhaka_branch',204);
```

```
update shipper set branch_id=302
```

```
where shipper_id=204;
```

```
INSERT INTO shipper VALUES (205, 'Jamir','Dhaka','01817213198',302);
```

```
INSERT INTO shipper VALUES (206, 'Raihan','Khulna','01813376497',NULL);
```

```
INSERT INTO branch VALUES (303,'Khulna_branch',206);
```

```
update shipper set branch_id=303
```

```
where shipper_id=206;
```

```
INSERT INTO shipper VALUES (207, 'Kabir','Khulna','01813376497',303);
```

```
INSERT INTO shipper VALUES (208, 'Rahman','Dinajpur','01834557649',NULL);
```

```
INSERT INTO branch VALUES (304,'Dinajpur_branch',208);
```

```
update shipper set branch_id=304
```

```
where shipper_id=208;
```

```
INSERT INTO shipper VALUES (209, 'Karim','Dinajpur','01834557649',304);
```

```
INSERT INTO shipper VALUES (210, 'Mijan','Rangpur','01830945649',NULL);
```

```
INSERT INTO branch VALUES (305,'Rangpur_branch',210);
```

```
update shipper set branch_id=305
```

```
where shipper_id=210;
```

```
INSERT INTO shipper VALUES (211, 'Rimon','Rangpur','01834557649',305);
```

SHIPPER_ID	SHIPPER_NAME	SHIPER_ADDRESS	SHIPPER_PHONE	BRANCH_ID
201	Sakib	Chittagong	01812346095	301
202	Emon	Chittagong	01812346196	301
203	Arif	Chittagong	01817846198	301
204	Sagor	Dhaka	01712396097	302
205	Jamir	Dhaka	01817213198	302
206	Raihan	Khulna	01813376497	303
207	Kabir	Khulna	01813376497	303
208	Rahman	Dinajpur	01834557649	304
209	Karim	Dinajpur	01834557649	304
210	Mijan	Rangpur	01830945649	305
211	Rimon	Rangpur	01834557649	305

11 rows returned in 0.00 seconds

[CSV Export](#)

Branch Table:

```
CREATE TABLE branch(
```

```
    branch_id int PRIMARY KEY NOT NULL,
```

```
    branch_name varchar(50) NOT NULL,
```

```
    cargo_id int,
```

```
    supervisor_id int,
```

```
    FOREIGN KEY(cargo_id) REFERENCES cargo(cargo_id) ON DELETE SET NULL,
```

```
    FOREIGN KEY(supervisor_id) REFERENCES shipper(shipper_id) ON DELETE SET NULL
```

```
);
```

```
ALTER TABLE branch
```

```
DROP COLUMN cargo_id;
```

Data:

[NB:data of branch table is inserted together in shipper data section.So again the code is written here.](#)

```
INSERT INTO shipper VALUES (201, 'Sakib','Chittagong','01812346095',NULL);
```

```
INSERT INTO branch VALUES (301,'Chittagong_branch',201);
```

```
update shipper set branch_id=301
```

```
where shipper_id=201;
```

```
INSERT INTO shipper VALUES (202, 'Emon','Chittagong','01812346196',301);
```

```
INSERT INTO shipper VALUES (203, 'Arif','Chittagong','01817846198',301);
```

```
INSERT INTO shipper VALUES (204, 'Sagor','Dhaka','01712396097',NULL);
```

```
INSERT INTO branch VALUES (302,'Dhaka_branch',204);
```

```
update shipper set branch_id=302
```

```
where shipper_id=204;
```

```
INSERT INTO shipper VALUES (205, 'Jamir','Dhaka','01817213198',302);
```

```
INSERT INTO shipper VALUES (206, 'Raihan','Khulna','01813376497',NULL);
```

```
INSERT INTO branch VALUES (303,'Khulna_branch',206);
```

```
update shipper set branch_id=303
```

```
where shipper_id=206;
```

```
INSERT INTO shipper VALUES (207, 'Kabir','Khulna','01813376497',303);
```

```
INSERT INTO shipper VALUES (208, 'Rahman','Dinajpur','01834557649',NULL);
```

```
INSERT INTO branch VALUES (304,'Dinajpur_branch',208);
```

```
update shipper set branch_id=304
```

```
where shipper_id=208;
```

```
INSERT INTO shipper VALUES (209, 'Karim','Dinajpur','01834557649',304);
```

```
INSERT INTO shipper VALUES (210, 'Mijan','Rangpur','01830945649',NULL);
```

```
INSERT INTO branch VALUES (305,'Rangpur_branch',210);
```

```
update shipper set branch_id=305 where shipper_id=210;
```

```
INSERT INTO shipper VALUES (211, 'Rimon','Rangpur','01834557649',305);
```

BRANCH_ID	BRANCH_NAME	SUPERVISOR_ID
301	Chittagong_branch	201
302	Dhaka_branch	204
303	Khulna_branch	206
304	Dinajpur_branch	208
305	Rangpur_branch	210

5 rows returned in 0.02 seconds

[CSV Export](#)

Cargo Table:

```
CREATE TABLE cargo(
```

```
    cargo_id INT PRIMARY KEY NOT NULL,
```

```
    cargo_name varchar(50) NOT NULL,
```

```
    booking_id INT,
```

```
    weight varchar(50),
```

```
    mark varchar(20),
```

```
    FOREIGN KEY(booking_id) REFERENCES shipper(shipper_id) ON DELETE SET NULL
```

```
);
```

```
ALTER TABLE cargo
```

```
ADD branch_id int;
```

```
ALTER TABLE cargo
```

```
ADD FOREIGN KEY(branch_id) REFERENCES branch(branch_id) ON DELETE SET NULL;
```

```
ALTER TABLE cargo
```

```
MODIFY mark varchar(100);
```


Data:

insert into cargo values(11,'Fit Logistic Limited',204,'10000kg','Temperature Sensitive',303);

insert into cargo values(12,'BRISK LOGISTICS INTERNATIONAL LTD',211,'9800kg','Temperature Sensitive',301);

insert into cargo values(13,'MANUMA SHIPPING LINES',203,'11200kg','Fragile',305);

insert into cargo values(14,'FAMOUS CARGO LINE',208,'10000kg','Food',302);

insert into cargo values(15,'ANCHOR LOGISTICS',205,'12000kg','Protect from heat',304);

CARGO_ID	CARGO_NAME	BOOKING_ID	WEIGHT	MARK	BRANCH_ID
11	Fit Logistic Limited	204	10000kg	Temperature Sensitive	302
12	BRISK LOGISTICS INTERNATIONAL LTD	211	9800kg	Temperature Sensitive	301
13	MANUMA SHIPPING LINES	203	11200kg	Fragile	305
14	FAMOUS CARGO LINE	208	10000kg	Food	302
15	ANCHOR LOGISTICS	205	12000kg	Protect from heat	304

5 rows returned in 0.01 seconds

[CSV Export](#)

Consignee table:

```
CREATE TABLE consignee(
```

```
    consignee_id int PRIMARY KEY NOT NULL,
```

```
    consignee_name varchar(50) NOT NULL,
```

```
    consignee_address varchar(50),
```

```
    branch_id int,
```

```
    consignee_phone varchar(20),
```

```
    FOREIGN KEY(branch_id) REFERENCES branch(branch_id) ON DELETE SET NULL
```

```
);
```

```
ALTER TABLE consignee
```

```
ADD order_no int;
```

```
ALTER TABLE consignee ADD FOREIGN KEY(order_no) REFERENCES shipper(shipper_id) ON DELETE SET NULL;
```

Data:

```
insert into consignee values(501,'Amir','Dhaka',302,'01814535647',201);
```

```
insert into consignee values(502,'Mahmud','Chittagong',301,'01717436945',205);
```

```
insert into consignee values(503,'Rifat','Chittagong',301,'01864746679',207);
```

```
insert into consignee values(504,'Jahir','Khulna',303,'01835140838',202);
```

```
insert into consignee values(505,'Minhaz','Rangpur',305,'01853746582',208);
```

CONSIGNEE_ID	CONSIGNEE_NAME	CONSIGNEE_ADDRESS	BRANCH_ID	CONSIGNEE_PHONE	ORDER_NO
501	Amir	Dhaka	302	01814535647	201
502	Mahmud	Chittagong	301	01717436945	205
503	Rifat	Chittagong	301	01864746679	207
504	Jahir	Khulna	303	01835140838	202
505	Minhaz	Rangpur	305	01853746582	208

5 rows returned in 0.03 seconds

[CSV Export](#)

DML:

A)Searching data from individual table:

a)Find the details of all shipper:

```
select * from shipper;
```

SHIPPER_ID	SHIPPER_NAME	SHIPER_ADDRESS	SHIPPER_PHONE	BRANCH_ID
201	Sakib	Chittagong	01812346095	301
202	Emon	Chittagong	01812346196	301
203	Arif	Chittagong	01817846198	301
204	Sagor	Dhaka	01712396097	302
205	Jamir	Dhaka	01817213198	302
206	Raihan	Khulna	01813376497	303
207	Kabir	Khulna	01813376497	303
208	Rahman	Dinajpur	01834557649	304
209	Karim	Dinajpur	01834557649	304
210	Mijan	Rangpur	01830945649	305
211	Rimon	Rangpur	01834557649	305

11 rows returned in 0.00 seconds

[CSV Export](#)

b)Show shippes names whose branch id is 303:

select shipper_name from shipper where branch_id=303;

SHIPPER_NAME
Raihan
Kabir

c)Find the details of All cargo:

select * from cargo;

CARGO_ID	CARGO_NAME	BOOKING_ID	WEIGHT	MARK	BRANCH_ID
11	Fit Logistic Limited	204	10000kg	Temperature Sensitive	302
12	BRISK LOGISTICS INTERNATIONAL LTD	211	9800kg	Temperature Sensitive	301
13	MANUMA SHIPPING LINES	203	11200kg	Fragile	305
14	FAMOUS CARGO LINE	208	10000kg	Food	302
15	ANCHOR LOGISTICS	205	12000kg	Protect from heat	304

5 rows returned in 0.01 seconds

[CSV Export](#)

d)Find cargo name and cargo id from cargo table whose mark is 'Temperature Sensitive':

select cargo_name,booking_id from cargo where mark='Temperature Sensitive';

CARGO_NAME	BOOKING_ID
Fit Logistic Limited	204
BRISK LOGISTICS INTERNATIONAL LTD	211

2 rows returned in 0.00 seconds

[CSV Export](#)

e) Finds details of all branches:

select * from branch;

BRANCH_ID	BRANCH_NAME	SUPERVISOR_ID
301	Chittagong_branch	201
302	Dhaka_branch	204
303	Khulna_branch	206
304	Dinajpur_branch	208
305	Rangpur_branch	210

5 rows returned in 0.02 seconds

[CSV Export](#)

f) Find branch id of the supervisor with id 206 from branch table:

select branch_id from branch where supervisor_id=206;

BRANCH_ID
303

g) Find details of all consignee:

select * from consignee;

CONSIGNEE_ID	CONSIGNEE_NAME	CONSIGNEE_ADDRESS	BRANCH_ID	CONSIGNEE_PHONE	ORDER_NO
501	Amir	Dhaka	302	01814535647	201
502	Mahmud	Chittagong	301	01717436945	205
503	Rifat	Chittagong	301	01864746679	207
504	Jahir	Khulna	303	01835140838	202
505	Minhaz	Rangpur	305	01853746582	208

5 rows returned in 0.03 seconds

[CSV Export](#)

h) Find consignee id and name from consignee table whose branch id is larger than 302:

select consignee_id,consignee_address from consignee where branch_id>302;

CONSIGNEE_ID	CONSIGNEE_ADDRESS
504	Khulna
505	Rangpur

i)Find consignee id and phone from consignee whose id is between 502 and 504:

SELECT consignee_id,consignee_phone FROM consignee WHERE consignee_id BETWEEN 502 AND 504;

CONSIGNEE_ID	CONSIGNEE_PHONE
502	01717436945
503	01864746679
504	01835140838

j) find weight and mark from cargo table whose cargo id is not belongs to 12 and 14:

SELECT weight,mark FROM cargo WHERE cargo_id NOT IN(12,14);

WEIGHT	MARK
10000kg	Temperature Sensitive
11200kg	Fragile
12000kg	Protect from heat

B)Searching data from multiple table:

a)Find branch name,consignee name from branch and consignee table if the branch id are same in two tables:

SELECT branch.branch_name,consignee.consignee_name FROM
branch,consignee WHERE branch.branch_id= consignee.branch_id;

BRANCH_NAME	CONSIGNEE_NAME
Dhaka_branch	Amir
Chittagong_branch	Mahmud
Chittagong_branch	Rifat
Khulna_branch	Jahir
Rangpur_branch	Minhaz

b) Show shipper Address, cargo name, consignee name from shipper, cargo and consignee table in same column named as multiple data (using UNION):

```
SELECT shipper_address AS multiple_data from shipper
```

```
UNION
```

```
SELECT cargo_name from cargo
```

```
UNION
```

```
SELECT consignee_name from consignee;
```

MULTIPLE_DATA
ANCHOR LOGISTICS
Amir
BRISK LOGISTICS INTERNATIONAL LTD
Chittagong
Dhaka
Dinajpur
FAMOUS CARGO LINE
Fit Logistic Limited
Jahir
Khulna
MANUMA SHIPPING LINES
Mahmud
Minhaz
Rangpur
Rifat

c)Find all shipper phone from shipper and branch id from cargo table if shipper id and cargo booking id is same.(using INNER JOIN):

```
SELECT shipper.shipper_phone,cargo.branch_id
```

```
FROM shipper
```

```
INNER JOIN cargo
```

```
ON shipper.shipper_id = cargo.booking_id;
```


SHIPPER_PHONE	BRANCH_ID
01712396097	302
01834557649	301
01817846198	305
01834557649	302
01817213198	304

d)Find branch name from branch table and cargo name from cargo table if branch id of two tables are same.(using RIGHT JOIN):

```
SELECT branch.branch_name,cargo.cargo_name FROM branch RIGHT JOIN cargo
ON branch.branch_id =cargo.branch_id;
```

BRANCH_NAME	CARGO_NAME
Dhaka_branch	Fit Logistic Limited
Chittagong_branch	BRISK LOGISTICS INTERNATIONAL LTD
Rangpur_branch	MANUMA SHIPPING LINES
Dhaka_branch	FAMOUS CARGO LINE
Dinajpur_branch	ANCHOR LOGISTICS

e)Find shipper name and consignee id from shipper,consignee table if shipper id of shipper and order no of consignee is same(using LEFT JOIN):

```
SELECT shipper.shipper_name,consignee.consignee_id FROM shipper LEFT JOIN consignee
ON shipper.shipper_id =consignee.order_no;
```


SHIPPER_NAME	CONSIGNEE_ID
Sakib	501
Emon	504
Arif	-
Sagor	-
Jamir	502
Raihan	-
Kabir	503
Rahman	505
Karim	-
Mijan	-
Rimon	-

C)Sub query:

a)Find shipper name whose branch name is Chittagong or Dhaka branch:

```
select shipper_name from shipper where branch_id IN(select branch_id from branch where branch_name IN('Chittagong_branch','Dhaka_branch'));
```

SHIPPER_NAME
Sakib
Emon
Arif
Sagor
Jamir

b)Find cargo name and branch id from cargo and branch table if branch id of those tables are same and branch id of branch table is greater than the branch id of the cosignee with id 502:

select cargo.cargo_name,branch.branch_id from cargo,branch where cargo.branch_id=branch.branch_id and branch.branch_id>

(select branch_id from consignee where consignee_id=502);

CARGO_NAME	BRANCH_ID
Fit Logistic Limited	302
MANUMA SHIPPING LINES	305
FAMOUS CARGO LINE	302
ANCHOR LOGISTICS	304

c)Find consignee name from consignee whose order id are not exists in those shipper_id whose branch id is greater than or equal to 303:

select consignee_name from consignee where order_no NOT IN(select shipper_id from shipper where branch_id>=303);

CONSIGNEE_NAME
Amir
Mahmud
Jahir

d)Find branch name,branch id from branch table whose branch id is less than the branch id of 'ANCHOR LOGISTICS' cargo:

select branch_name,branch_id from branch where branch_id<(select branch_id from cargo where cargo_name='ANCHOR LOGISTICS');

BRANCH_NAME	BRANCH_ID
Chittagong_branch	301
Dhaka_branch	302
Khulna_branch	303

e)Find details of those shipper from shipper table whose shipper id lies between the booking id of 'Fit Logistic Limited' and 'FAMOUS CARGO LINE' cargo:

```
select * from shipper where shipper_id BETWEEN (select booking_id from cargo where cargo_name='Fit Logistic Limited')AND(select booking_id from cargo where cargo_name='FAMOUS CARGO LINE');
```

SHIPPER_ID	SHIPPER_NAME	SHIPER_ADDRESS	SHIPPER_PHONE	BRANCH_ID
204	Sagor	Dhaka	01712396097	302
205	Jamir	Dhaka	01817213198	302
206	Raihan	Khulna	01813376497	303
207	Kabir	Khulna	01813376497	303
208	Rahman	Dinajpur	01834557649	304

D)Any types of query(optional):

a)Find total number of rows of shipper table:

```
select count(*) AS total_shipper from shipper;
```

TOTAL_SHIPPER
11

b)Find cargo name from cargo table whose name exists 'gis' or 'GIS' as a substring:

```
select cargo_name from cargo where cargo_name LIKE '%gis%' OR cargo_name LIKE '%GIS%';
```

CARGO_NAME
Fit Logistic Limited
BRISK LOGISTICS INTERNATIONAL LTD
ANCHOR LOGISTICS

c)Find details of all shipper by sorting their name in descending order:

```
select * from shipper ORDER BY shipper_name DESC;
```

SHIPPER_ID	SHIPPER_NAME	SHIPER_ADDRESS	SHIPPER_PHONE	BRANCH_ID
201	Sakib	Chittagong	01812346095	301
204	Sagor	Dhaka	01712396097	302
211	Rimon	Rangpur	01834557649	305
206	Raihan	Khulna	01813376497	303
208	Rahman	Dinajpur	01834557649	304
210	Mijan	Rangpur	01830945649	305
209	Karim	Dinajpur	01834557649	304
207	Kabir	Khulna	01813376497	303
205	Jamir	Dhaka	01817213198	302
202	Emon	Chittagong	01812346196	301
203	Arif	Chittagong	01817846198	301