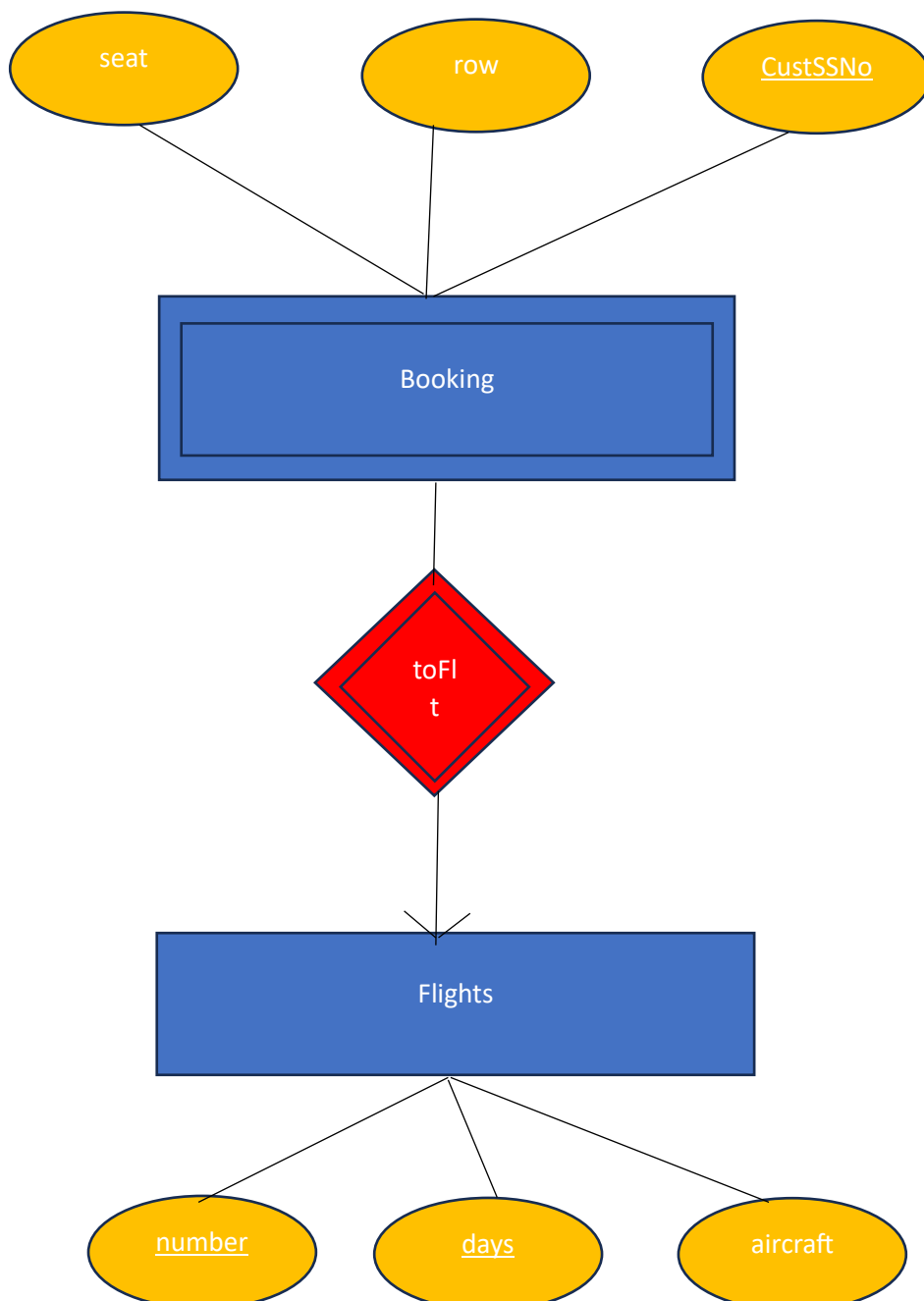


I Mo Danthuluru declare that I have completed this assignment completely and entirely on my own, without any consultation with others. I understand that any breach of the UAB Academic Honor Code may result in severe penalties.

Exercise 4.5.2 : There is another E /R diagram that could describe the weak entity set *Bookings* in Fig. 4.29. Notice that a booking can be identified uniquely by the flight number, day of the flight, the row, and the seat; the customer is not then necessary to help identify the booking.

a) Revise the diagram of Fig. 4.29 to reflect this new viewpoint.



- b) Convert your diagram from (a) into relations. Do you get the same a) database schema as in Exercise 4.5.1?

toFlt:

Bookings (CustSSNo, row, seat, flightnumber, flightday)

toFlt(Bookings, Flights)

Flights (number, day, aircraft)

No, the database schema is different from fig 4.29.

Exercise 4.6.2 : Convert the E/R diagram of Fig. 4.33 to a relational database schema, using:

a) The straight-E/R method.

1. Person(name, address)
2. Child(name, address)
3. Father(name, address)
4. Mother(name, address)
5. FatherOf(childname, childaddress, fathername, fatheraddress)
6. Married(fathername, fatheraddress, mothername, motheraddress)
7. MotherOf(childname, childaddress, mothername, motheraddress)

b) The object-oriented method.

1. Person(name, address)
2. PersonChild(name, address)
3. PersonFather(name, address)
4. PersonMother(name, address)
5. PersonChildFather(childname, childaddress, fathername, fatheraddress)
6. PersonChildMother(childname, childaddress, mothername, motheraddress)
7. PersonFatherMother(fathername, fatheraddress, mothername, motheraddress)
8. MotherOf(childname, childaddress, mothername, motheraddress)
9. FatherOf(childname, childaddress, fathername, fatheraddress)

c) The nulls method.

1. Person(name, address, childname, childaddress, fathername, fatheraddress, mothername, motheraddress)

SQL Exercise:

- a. Insert at least 5 tuples each into 'Ships' and 'Battles' you created in the previous Assignment.

```
[mvdanthu@cs-vulcan-1:~$ psql -h cisdb -U mvdanthuweb -d mvdanthu ]
[Password for user mvdanthuweb: ]
psql (13.11 (Debian 13.11-0+deb11u1))
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, bits: 256, co
mpression: off)
Type "help" for help.

[mvdanthu=> insert into ships values('Nevada',2000,'USA',7,10,54000); ]
INSERT 0 1
[mvdanthu=> insert into ships values('New York',2001,'USA',8,11,76000); ]
INSERT 0 1
[mvdanthu=> insert into ships values('New Jersey',1999,'USA',6,9,62000); ]
INSERT 0 1
[mvdanthu=> insert into ships values('Alabama',2009,'USA',10,10,88000); ]
INSERT 0 1
[mvdanthu=> insert into ships values('Georgia',2014,'USA',11,9,78000); ]
INSERT 0 1
[mvdanthu=> select * from ships; ]
mvdanthu=> 
```

```
mvdanthu=> insert into battles values('USS Virginia','Virginia','sunk');
INSERT 0 1
mvdanthu=> insert into battles values('USS Indiana','Indiana','OK');
ERROR:  invalid input value for enum result_type: "OK"
LINE 1: insert into battles values('USS Indiana','Indiana','OK');
                        ^
mvdanthu=> insert into battles values('USS Indiana','Indiana','ok');
INSERT 0 1
mvdanthu=> insert into battles values('USS Alabama','Alabama','ok');
INSERT 0 1
mvdanthu=> insert into battles values('USS California','California','damaged');
INSERT 0 1
mvdanthu=> insert into battles values('USS Nevada','Nevada','ok');
INSERT 0 1
mvdanthu=> 
```

- b. List the tuples in each table by using a SQL query statement – ‘select * from TableName;’ Print out the result.

country	name	numguns	yearlaunched	gunsizesize	displacement
Nevada		7	2000	10	54000
New York		8	2001	11	76000
New Jersey		6	1999	9	62000
Alabama		10	2009	10	88000
Georgia		11	2014	9	78000
(5 rows)					
(END)					

ship	battlename	result
USS Virginia	Virginia	sunk
USS Indiana	Indiana	ok
USS Alabama	Alabama	ok
USS California	California	damaged
USS Nevada	Nevada	ok
(5 rows)		

- c. Update one or more tuples in each table and print out the results after the modification.

```
mvdanthu=> update ships set numguns=numguns-1 where displacement<60000
mvdanthu-> ;
UPDATE 1
mvdanthu=>
```

name	yearlaunched	country	numguns	gunsize	displacement
New York	2001	USA	8	11	76000
New Jersey	1999	USA	6	9	62000
Alabama	2009	USA	10	10	88000
Georgia	2014	USA	11	9	78000
Nevada	2000	USA	6	10	54000
(5 rows)					

- d. Delete all the tuples from 'Ships' and print out the results after the deletion.

```
mvdanthu=> delete from ships;
DELETE 5
mvdanthu=> select * from ships;
 name | yearlaunched | country | numguns | gunsize | displacement
-----+-----+-----+-----+-----+-----
(0 rows)

mvdanthu=> █
```

- e. Import a few data records to 'Ships' from a flat-text file by using '\copy' (see previous assignment) command. This time you need to prepare the text file yourself. Print out the table content after import.

```
mvdanthu=> \COPY ships(name, yearlaunched, country, numguns, gunsize, displacement) from '/home/ad.uab.edu/mvdanthu/ship.txt';
COPY 2
mvdanthu=> select * from ships;
mvdanthu=> █
```

...uab.edu — ssh mvdanthu@moat.cs.uab.edu

~/Desktop — -zsh

+

untry	name	numguns	gunsize	displacement	yearlaunched	co
Nevada		7	10	54000	2000	USA
Alabama		8	11	76000	2001	USA

(2 rows)

(END)