CI5310 Database & UML Modelling –
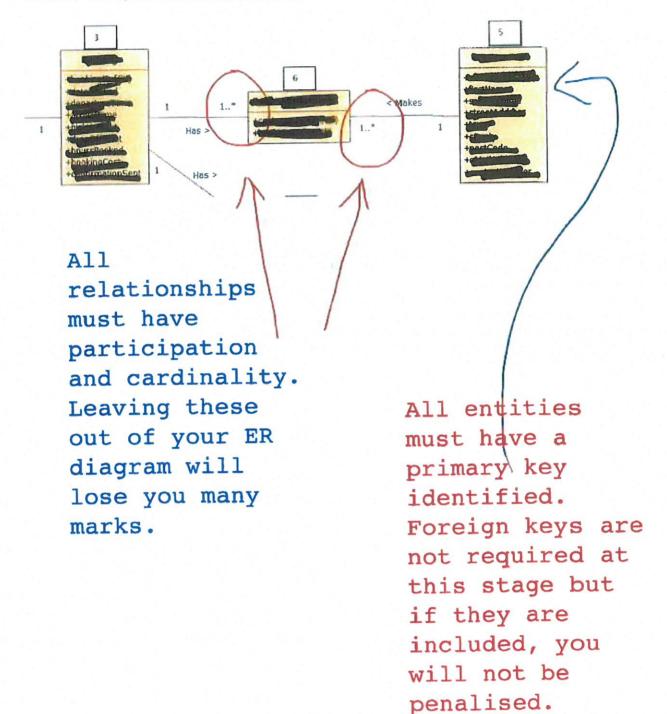
Coursework 1 -

This document outlines what is required for each section.

All relationships must have participation and cardinality. Leaving these out of your ER diagram will lose you many marks.

All entities must have a primary key identified. Foreign keys are not required at this stage but if they are included, you will not be penalised.

Note also that if you have a composite primary key then they are also foreign keys.
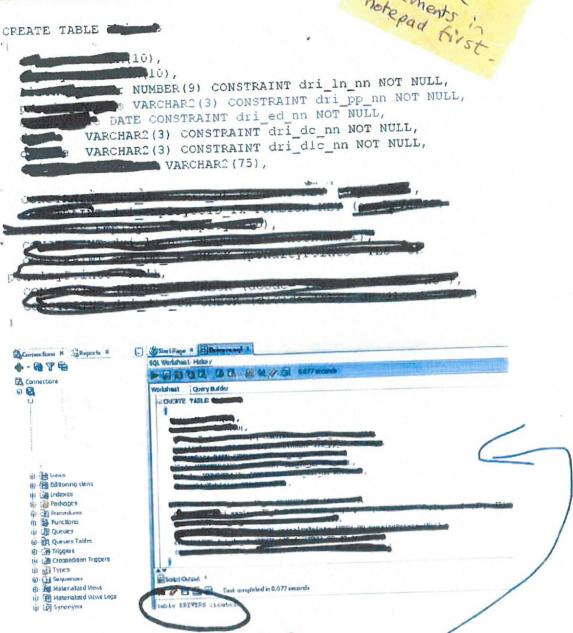
Task 2: Data Dictionary

Relation Name	Attribute Name	Data Type	Length	PK/FK	NOT NULL	Other Constr.
▓▓▓▓	▓▓▓▓	▓▓▓▓	10	PK	▓▓▓▓	
	firstName	VARCHAR2	15		NOT NULL	
	secondName	VARCHAR2	15		NOT NULL	
	streetAddress	VARCHAR2	25		NOT NULL	
	town	VARCHAR2	15			
	county	VARCHAR2	15			
	postCode	VARCHAR2	8		NOT NULL	
	homeTelephoneNumber	▓▓▓▓	11		NOT NULL	
	dateOfBirth	DATE				
	gender	▓▓▓▓	1			CHECK (gender='M' OR gender='F')
	jobDescription	VARCHAR	75			
	nationalInsuranceNumber	▓▓▓▓	9		NOT NULL	
	currentAnnualSalary	NUMBER	7, 2		NOT NULL	CHECK (currentAnnualSalary>0)
▓▓▓▓	▓▓▓▓	▓▓▓▓	10	PK	▓▓▓▓	
	employeeID	▓▓▓▓	10	FK	NOT NULL	
	department	VARCHAR2	25			
	extensionNumber	CHAR	5			
▓▓▓▓	▓▓▓▓	▓▓▓▓	10	PK	▓▓▓▓	
	dateBooked	DATE			▓▓▓▓	DEFAULT SYSDATE
	departureTime	DATE			▓▓▓▓	
	arrivalTime	DATE			NOT NULL	
	pickUpPoint	VARCHAR2	25		NOT NULL	
	dropOffPoint	VARCHAR2	25		NOT NULL	
	hoursBooked	NUMBER	2		NOT NULL	CHECK (hoursBooked>0)
	bookingCost	NUMBER	6, 2		NOT NULL	CHECK (bookingCost>0)
	confirmationSent	VARCHAR2	3		NOT NULL	CHECK (confirmationSent='YES' OR confirmationSent='NO')

All primary keys and foreign keys should be identified. Many marks will be knocked off if these are omitted. Every table should have a primary key.

Include all other constraints too

Task 3: CREATE TABLE statements

```
CREATE TABLE ████████
 ████████████████ 10),
 ████████████████ 10),
 ████████ NUMBER(9) CONSTRAINT dri_ln_nn NOT NULL,
 ████████ VARCHAR2(3) CONSTRAINT dri_pp_nn NOT NULL,
 ████████ DATE CONSTRAINT dri_ed_nn NOT NULL,
 ████████ VARCHAR2(3) CONSTRAINT dri_dc_nn NOT NULL,
 ████████ VARCHAR2(3) CONSTRAINT dri_dlc_nn NOT NULL,
 ████████ VARCHAR2(75),
```
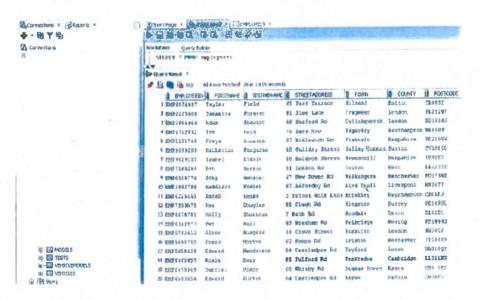

You must include a
screenshot that
shows that your
table has been
created in the
database No marks
will be given for
this section if
the screenshots
are not included.

Task 4: Screenshot of populated data

Employees Table

```
SELECT * FROM employees;
```


How much data should you enter?

(handwritten) you need to enter data that demonstrates that your constraints work.

For each one to many (parent child) relationship that you have, enter many rows in the child table for each row in the parent table.

Task 5: Discussion of constraints used

This is the section where many students lose valuable marks.

These are the types of constraints you may have placed on your database tables:

- Primary key
- Foreign Key
- Not Null
- Check
- Unique

Do not copy and paste a general definition of what these constraints are. If you do this, then it is likely that you will get zero marks.

Go through all your tables and constraints and describe the function of each.

For example:

Table Employee

Primary key is employee_id. This is used to uniquely identify an employee.

Foreign key is clinic_id. This ensures that a clinic entered for an employee exists in the clinic table.

Check constraint on gender column.(to ensure that only the two values of male or female can be entered).
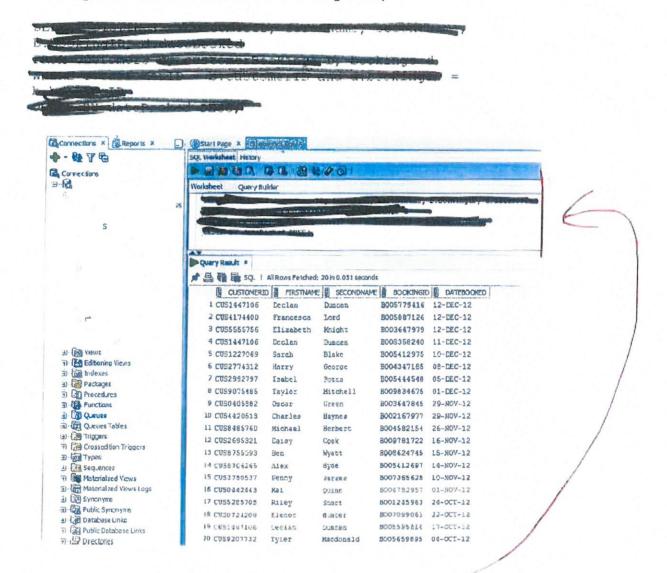
The composite primary keys are the most challenging constraints to discuss.

Heed this advice and you should gain high marks for this section.

Task 6 (i): Query 1

3 queries

Query 1: List all customers along with their booking ID's and the date the booking was created (join the 'Customers' table with the 'Bookings' table).

	CUSTOMERID	FIRSTNAME	SECONDNAME	BOOKINGID	DATEBOOKED
1	CUS1447106	Declan	Duncan	B005779416	12-DEC-12
2	CUS4174400	Francesca	Lord	B005887126	12-DEC-12
3	CUS5555756	Elizabeth	Knight	B003647979	12-DEC-12
4	CUS1447106	Declan	Duncan	B003358240	11-DEC-12
5	CUS1227069	Sarah	Blake	B005412975	10-DEC-12
6	CUS2774312	Harry	George	B004347185	08-DEC-12
7	CUS2992797	Isabel	Potts	B005444548	05-DEC-12
8	CUS9035485	Taylor	Mitchell	B009834675	01-DEC-12
9	CUS0405982	Oscar	Green	B003647845	29-NOV-12
10	CUS4420613	Charles	Haynes	B002167977	29-NOV-12
11	CUS8485760	Michael	Herbert	B004582154	26-NOV-12
12	CUS2695321	Daisy	Cook	B009781722	16-NOV-12
13	CUS8755593	Ben	Wyatt	B009624745	15-NOV-12
14	CUS5837C4265	Alex	Hyde	B005412697	14-NOV-12
15	CUS3750537	Penny	Parona	B007365628	10-NOV-12
16	CUS0342443	Kai	Quinn	B004792957	01-NOV-12
17	CUS5285708	Riley	Short	B001245963	26-OCT-12
18	CUS0724209	Elenor	Hunter	B007099061	23-OCT-12
19	CUS1447106	Declan	Duncan	B008595814	17-OCT-12
20	CUS9207732	Tyler	Macdonald	B005659895	04-OCT-12

A screenshot of your query being executed **and** the results must be included in your report.

As for Query 1

Task 6 (iii): Query 3

As for query 1