**COSC 344 Assignment 2**

Group 5

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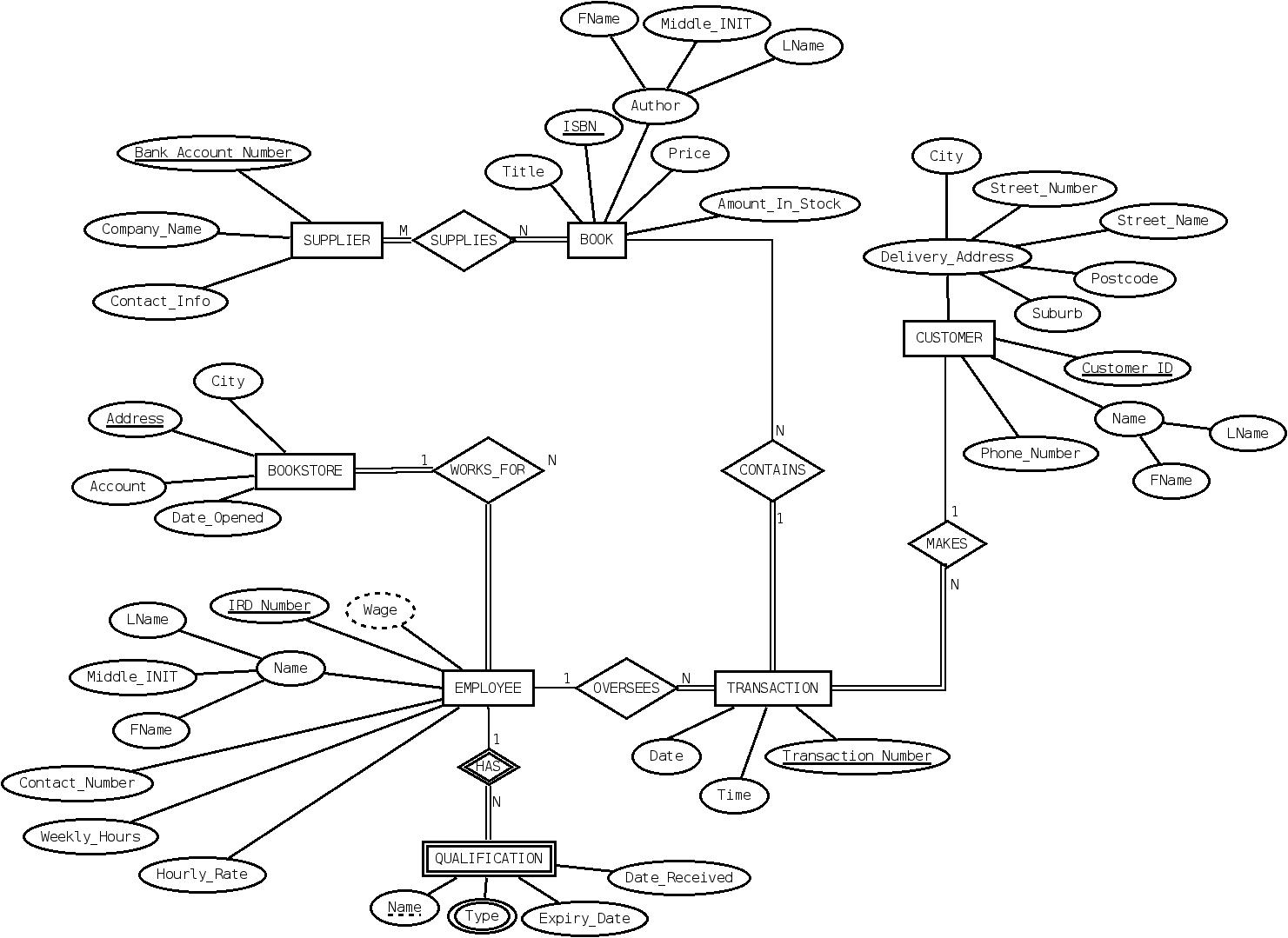
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1. **Revised ER Diagram**



1. **Relational Schema**



**3. Normalization**

SUPPLIER

|  |  |  |
| --- | --- | --- |
| **Bank\_Account\_Number** | Company\_Name | Contact\_number |

This relation is already in BCNF.

**1NF:**

All attributes values are atomic, this relation satisfies 1NF criteria.

**2NF:**

FD1: Bank\_Account\_Number -> Company\_Name, Contact\_Number

FD2: Contact\_Number -> Bank\_Account\_Number, Company\_Name

The PK contains a single attribute, which is Bank\_Account\_Number, there is nothing to be done.

**3NF:** Company\_name and Contact\_number is non-transitively dependent on the primary key Bank\_Account\_Number

**BCNF:** The relation is in BCNF

BOOKSTORE

|  |  |  |  |
| --- | --- | --- | --- |
| City | **Address** | Account | Date\_opened |

This relation is already a BCNF

**1NF**: All attribute values are atomic.

**2NF:** The PK contains only one attribute. There is no partial dependency.

**3NF:** There is no transitive dependency in this relation.

**BCNF:** This relation is in BCNF.

BOOK

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Title | **ISBN** | FName | Middle\_INIT | LName | Price | Amount\_In\_Stock | TTransaction\_Number |

**1NF:**

All attribute values are atomic, so it is already in 1NF.

**2NF:**

FD1: ISBN -> Title, FName,Middle\_INIT,LName,Price,Amount\_in\_Stock

FD2: {Title,FName,Middle\_INIT,LName} -> ISBN,Price,Amount\_in\_Stock

**3NF:**

The relation is in 3NF because there is no transitive dependency.

**BCNF:**

The relation is in BCNF.

TRANSACTION

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | Time | **Transaction\_Number** | EIRD\_Number | Ccustomer\_ID |

**1NF:**

All attributes are atomic values.

**2NF:**

FD1: Transaction\_Number -> Time,Date,EIRD\_Number,Ccustomer\_ID

FD2: {Date,Time,EIRD} -> Transaction\_Number, Ccustomer\_ID

FD3: {Ccustomer\_ID, Date,Time} -> Transaction\_Number, EIRD\_Number

**3NF:**

The relation is in 3NF because all attributes are prime attributes.

**BCNF**

The relation is in BCNF, as all attributes are prime attributes.

EMPLOYEE

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| FNAME | Middle\_INIT | LName | **IRD\_Number** | Contact\_Number | Weekly\_Hours | Hourly\_Rate | BAddress | Wage |

**1NF:**

All attributes are atomic, thus the relation is in 1NF.

**2NF:**

FD1: IRD\_Number -> FNAME, Middle\_INIT, LName, Contact\_Number, Weekly\_Hours, Hourly\_Rate,BAddress,Wage

FD2: {Weekly\_Hours,Hourly\_Rate} -> Wage

**3NF:**

FD2 in EMPLOYEE relation violates 3NF because Wage is not a prime attribute and {Weekly\_Hours , Hourly\_Rate} is not a superkey of R.

Post-Normalization:

EMPLOYEE

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| FNAME | Middle\_INIT | LName | **IRD\_Number** | Contact\_Number | Weekly\_Hours | Hourly\_Rate | BAddress |

EMPLOYEE\_WAGE

|  |  |  |
| --- | --- | --- |
| **Weekly\_Hours** | **Hourly\_Rate** | wage |

**BCNF:**

Both relations satisfy the conditions of BCNF.

CUSTOMER

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Street\_Number | Street\_Name | Suburb | City | Postcode | **Customer\_ID** | FName | LName | Phone\_Number |

**1NF:**

All attributes are atomic in this relation.

**2NF:**

FD1: Customer\_ID -> Street\_Number,Street\_Name, Suburb, City, Postcode, FName, LName, Phone\_Number

FD2: Postcode-> {City, Suburb}

FD1 has a single attribute, and FD2 cannot be reduced further.

**3NF:**

FD2 in CUSTOMER violates 3NF because Postcode is not a superkey; and the set {City, Suburbs} is not a primary attribute.

Post normalization:

CUSTOMER

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Street\_Number | Street\_Name | Postcode | **Customer\_ID** | FName | LName | Phone\_Number |

POSTCODE

|  |  |  |
| --- | --- | --- |
| **Postcode** | Suburb | City |

Step 4: BCNF

Both relations satisfy the conditions of BCNF.

QUALIFICATIONS

|  |  |  |  |
| --- | --- | --- | --- |
| **EIRD\_Number** | **Name** | Date\_Received | Expiry\_Date |

**1NF:**

All attributes are atomic values.

**2NF:**

FD1: {EIRD\_Number, Name} -> Date\_Received, Expiry\_Date

The relation is already in 2NF because the Primary Key cannot be reduced further.

**3NF:**

The relation is in 3NF because there are no other functional dependencies.

**BCNF**

The relation satisfies all conditions of BCNF because the left hand side of the FD1 is a superkey.

QUALIFICATIONS\_TYPE

|  |  |  |
| --- | --- | --- |
| **EIRD\_Number** | **QName** | **QType** |

**1NF:**

All values are atomic; this relation is already in 1NF.

**2NF:**

FD1: {EIRD\_Number, Name} -> Date\_Received, Expiry\_Date

**3NF / BCNF:**

This relation satisfies the criteria both 3NF and BCNF.

SUPPLIES

|  |  |
| --- | --- |
| **SBank\_Acount\_Number** | **BISBN** |

**BCNF:**

This relation is already in BCNF because the combinations of its attributes form the primary key.

**4. Load.sql**

DROP TABLE qualifications\_type;

DROP TABLE qualifications;

DROP TABLE book\_tran;

DROP TABLE transactions;

DROP TABLE customer;

DROP TABLE postcode;

DROP TABLE employee;

DROP TABLE employee\_wage;

DROP TABLE supplies;

DROP TABLE supplier;

DROP TABLE book;

DROP TABLE bookstore;

CREATE TABLE bookstore

(city VARCHAR2(20) NOT NULL,

address VARCHAR2(30) PRIMARY KEY,

account CHAR(14) NOT NULL,

date\_opened DATE);

INSERT INTO bookstore VALUES

('Milton', '33 Union Street', '0234-9871-8373', TO\_DATE('22-05-1999','DD-MM-YYYY'));

INSERT INTO bookstore VALUES

('Bluff', '99 Oyster Road', '0453-1543-8532', TO\_DATE('08-01-1998','DD-MM-YYYY'));

INSERT INTO bookstore VALUES

('Invercargill', '33 Dee Street', '0324-9553-8443', TO\_DATE('14-06-1997','DD-MM-YYYY'));

INSERT INTO bookstore VALUES

('Waihola', '21 Lake Road', '0334-9321-7673', TO\_DATE('14-12-2003','DD-MM-YYYY'));

INSERT INTO bookstore VALUES

('Gore', '11 Bogan Street', '0854-6354-9142', TO\_DATE('24-12-2001','DD-MM-YYYY'));

INSERT INTO bookstore VALUES

('Temuka', '69 Kina Ave', '0534-9143-6453', TO\_DATE('31-10-2009','DD-MM-YYYY'));

CREATE TABLE book

(title VARCHAR2(30) NOT NULL,

isbn CHAR(17) PRIMARY KEY,

fname VARCHAR2(15) NOT NULL,

middle\_init CHAR,

lname VARCHAR2(15) NOT NULL,

price NUMBER(5), /\*Currency\*/

amount\_in\_stock NUMBER(2));

INSERT INTO book VALUES

('Rusty Bed Springs', '326-1-234923-21-2', 'I','P','Knightley','2950', '2');

INSERT INTO book VALUES

('Snakes of the World', '321-1-234333-21-8', 'Anna','','Conda','2250', '5');

INSERT INTO book VALUES

('Tyrrants of the Potatoes', '336-1-285647-32-6', 'Dic','','Tater','1900', '12');

INSERT INTO book VALUES

('Trees', '284-1-573847-98-4', 'I','M','Board','2950', '5');

INSERT INTO book VALUES

('Robotics Handbook', '634-2-125445-65-2', 'Anne','D','Roid','7600', '3');

INSERT INTO book VALUES

('Windy Nights', '343-1-234352-21-2', 'Gale','','Force','4590', '5');

INSERT INTO book VALUES

('Lion Tamming', '323-3-323434-76-7', 'Claud','B','Ottem','2950', '20');

CREATE TABLE supplier

(bank\_account\_number CHAR(18) PRIMARY KEY,

company\_name VARCHAR2(30) NOT NULL,

contact\_number CHAR(10));

INSERT INTO supplier VALUES

('39-6443-9454523-48','National Scholastic','034191123');

INSERT INTO supplier VALUES

('33-3456-9482743-32','Mills and Boon','035763832');

INSERT INTO supplier VALUES

('26-6843-4856284-68','Paperback Writers','04457484');

CREATE TABLE supplies

(sbank\_account\_number CHAR(18) REFERENCES supplier (bank\_account\_number),

bisbn CHAR(17) REFERENCES book(isbn),

CONSTRAINT supplies\_pk PRIMARY KEY(sbank\_account\_number, bisbn));

INSERT INTO supplies VALUES

('39-6443-9454523-48','326-1-234923-21-2');

INSERT INTO supplies VALUES

('39-6443-9454523-48','321-1-234333-21-8');

CREATE TABLE employee\_wage

(weekly\_hours NUMBER(2),

hourly\_rate NUMBER(5),

wage NUMBER (8) default 1000,

CONSTRAINT employee\_wage\_pk PRIMARY KEY(weekly\_hours, hourly\_rate));

INSERT INTO employee\_wage VALUES('38', '1525','57950');

INSERT INTO employee\_wage VALUES('38', '1600','60800');

INSERT INTO employee\_wage VALUES('38', '1700','64600');

INSERT INTO employee\_wage VALUES('32', '1800','57600');

INSERT INTO employee\_wage VALUES('32', '1900','60800');

INSERT INTO employee\_wage VALUES(40, 1500, 60000);

INSERT INTO employee\_wage VALUES(40, 1700, 68000);

INSERT INTO EMPLOYEE\_WAGE VALUES(35, 1750, 61250);

INSERT INTO EMPLOYEE\_WAGE VALUES(35, 1850, 64750);

CREATE TABLE employee

(fname VARCHAR2(15) NOT NULL,

middle\_init CHAR,

lname VARCHAR2(15) NOT NULL,

ird\_number CHAR(11) PRIMARY KEY,

contact\_number CHAR(10),

weekly\_hours NUMBER(2),

hourly\_rate NUMBER(5) NOT NULL, /\*Currency\*/

baddress VARCHAR2(30) CONSTRAINT baddress\_constraint REFERENCES bookstore(address),

CONSTRAINT wage\_constraint FOREIGN KEY(weekly\_hours, hourly\_rate) REFERENCES employee\_wage(weekly\_hours, hourly\_rate));

INSERT INTO employee VALUES

('John','B','Good', '024-613-323', '0212344505', 38, 1525, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Debbie','D','Dallas', '023-543-765', '0215739542', 32, 1800, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Tom','N','Mates', '013-643-923', '0273938492', 38, 1600, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Rebbecca','B','Smith', '075-142-345', '0214847395', 40, 1700, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Greg','T','Somerville', '087-681-765', '0270394722', 40, 1500, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Todd','A','BlackAdder', '091-813-913', '0215738375', 35, 1750, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Wayne','','Kerr', '023-842-366', '0273231043', 35, 1850, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Leroy','J','Brown', '073-834-552', '0215551234', 32, 1900, (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

INSERT INTO employee VALUES

('Ying','G','Brown', '055-923-819', '0214984833', 38, '1600', (select address from (select \* from bookstore order by DBMS\_RANDOM.RANDOM) WHERE rownum < 2));

CREATE TABLE postcode

(postcode NUMBER (4) PRIMARY KEY,

suburb VARCHAR (15),

city VARCHAR (15));

INSERT INTO postcode VALUES

(9016, 'Dunedin City', 'Dunedin');

INSERT INTO postcode VALUES

(9012, 'South Dunedin', 'Dunedin');

CREATE TABLE customer

(street\_number NUMBER(5),

Street\_name VARCHAR2(30),

postcode NUMBER(4) NOT NULL REFERENCES postcode(postcode),

customer\_id CHAR (7) PRIMARY KEY,

fname VARCHAR(15) NOT NULL,

lname VARCHAR(15) NOT NULL,

phone CHAR (10)

);

INSERT INTO customer VALUES

(22, 'Strawberry Lane', 9016, '0007365','Chubby','Checker', '0212546798');

INSERT INTO customer VALUES

(16, 'Princes Street', 9012, '0046290','Slim','Dusty', '0279843873');

INSERT INTO customer VALUES

(11, 'Boiling Down Road',9012,'0002233','Jimmy','Johns','');

INSERT INTO customer VALUES

(17,'Duchess Ave',9016,'0000010','Callum','Grimmer','0223280679');

INSERT INTO customer VALUES

(14,'Findlayson Road',9012,'0022056','Tim','Shadbolt','0272524455');

INSERT INTO customer VALUES

(25,'River Street',9016,'0024789','Joseph','Parker','');

INSERT INTO customer VALUES

(560,'George Street',9016,'0001010','David','Clark','');

INSERT INTO customer VALUES

(34, 'Midland Street',9012,'0033210','Dave','Brubeck','');

INSERT INTO customer VALUES

(131,'Queen Street',9016,'0035670','Trent','Brown','0223220987');

INSERT INTO customer VALUES

(11,'Pitt Street',9016,'0668220','Sammy','Dee','0274429824');

INSERT INTO customer VALUES

(2,'Wigan Street',9012,'0096210','Michael','Peterson','0211197862');

INSERT INTO customer VALUES

(62,'Robertson Street',9016,'0000223','Foxy','Brown','0274542211');

CREATE TABLE transactions

(TDATE DATE NOT NULL,

TTIME DATE NOT NULL,

transaction\_number CHAR (17) PRIMARY KEY,

eird\_number CHAR(11) REFERENCES employee (ird\_number),

ccustomer\_id CHAR (7) REFERENCES customer (customer\_id)

);

INSERT INTO transactions VALUES

(TO\_DATE('22-05-2013','DD-MM-YYYY'), TO\_DATE('13:34:23','hh24:mi:ss'),'000-0000-1234-124',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

INSERT INTO transactions VALUES

(TO\_DATE('24-06-2013','DD-MM-YYYY'), TO\_DATE('09:49:11','hh24:mi:ss'), '000-0000-1234-125',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

INSERT INTO transactions VALUES

(TO\_DATE('02-08-2013','DD-MM-YYYY'), TO\_DATE('11:40:57','hh24:mi:ss'), '000-0000-1234-126',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

INSERT INTO transactions VALUES

(TO\_DATE('13-09-2013','DD-MM-YYYY'), TO\_DATE('15:23:31','hh24:mi:ss'), '000-0000-1234-127',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

INSERT INTO transactions VALUES

(TO\_DATE('17-11-2013','DD-MM-YYYY'), TO\_DATE('12:43:04','hh24:mi:ss'), '000-0000-1234-128',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

INSERT INTO transactions VALUES

(TO\_DATE('30-11-2013','DD-MM-YYYY'), TO\_DATE('16:31:23','hh24:mi:ss'), '000-0000-1234-200',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

INSERT INTO transactions VALUES

(TO\_DATE('22-01-2014','DD-MM-YYYY'), TO\_DATE('12:59:29','hh24:mi:ss'), '000-0000-1234-203',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

INSERT INTO transactions VALUES

(TO\_DATE('22-03-2014','DD-MM-YYYY'), TO\_DATE('14:03:40','hh24:mi:ss'), '000-0000-1234-204',

(select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

(select customer\_id from (select \* from customer order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2));

CREATE TABLE book\_tran

(bisbn CHAR (17) REFERENCES book(isbn),

ttransaction\_number CHAR (17) REFERENCES transactions(transaction\_number),

CONSTRAINT book\_tran\_pk PRIMARY KEY(bisbn, ttransaction\_number));

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=1)

);

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=2)

);

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=3)

);

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=4)

);

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=5)

);

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=6)

);

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=7)

);

INSERT INTO book\_tran VALUES(

(select isbn from (select \* from book order by dbms\_random.random) where rownum < 2),

(select TRANSACTION\_NUMBER from (select TRANSACTION\_NUMBER, rownum as rn from transactions order by dbms\_random.random) where rn=8)

);

CREATE TABLE qualifications (

eird\_number CHAR (11) REFERENCES EMPLOYEE(ird\_number),

qname VARCHAR(30),

date\_received DATE,

expiry\_date DATE,

CONSTRAINT qualifications\_pk PRIMARY KEY(eird\_number, qname));

INSERT INTO qualifications VALUES

((select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

'First Aid', TO\_DATE('22-05-2013','DD-MM-YYYY'), TO\_DATE('22-05-2015','DD-MM-YYYY'));

INSERT INTO qualifications VALUES

((select IRD\_NUMBER from (select \* from employee order by DBMS\_RANDOM.RANDOM) WHERE ROWNUM < 2),

'BSci', TO\_DATE('25-10-1999','DD-MM-YYYY'), TO\_DATE(''));

CREATE TABLE qualifications\_type

(eird\_number CHAR(11),

qname VARCHAR(30),

qtype VARCHAR(20),

CONSTRAINT qualifications\_type\_pk PRIMARY KEY (eird\_number, qname, qtype),

CONSTRAINT qualifications\_foreign\_key FOREIGN KEY (eird\_number, qname) REFERENCES QUALIFICATIONS(eird\_number, qname));

INSERT INTO qualifications\_type VALUES

( (select eird\_number from QUALIFICATIONS where rownum = 1),

(select qname from QUALIFICATIONS where rownum = 1),

'Health and Safety');

INSERT INTO qualifications\_type VALUES

( (select eird\_number from QUALIFICATIONS where rownum = 1),

(select qname from QUALIFICATIONS where rownum = 1),

'bachelors degree');

COMMIT;

**5. Queries**

/\*\*

q01

\*/

SELECT title FROM book

WHERE title LIKE 'S%';

/\*\*

q02

\*/

select \* from bookstore

where date\_opened = TO\_DATE('22-05-1999', 'dd-mm-yyyy');

/\*\*

q03

\*/

select max(hourly\_rate), weekly\_hours

from employee\_wage

group by weekly\_hours

having max(hourly\_rate) < 1800;

/\*\*

q04

show employee and their hourly\_rate which is smaller than average hourly\_rate

\*/

select fname, lname, hourly\_rate

from employee

where hourly\_rate < (

select avg(hourly\_rate)

from employee\_wage);

/\*\*

q05

show first name, last name of customer who purchase item at '22-05-2013'

\*/

select fname, lname from customer c

where to\_date('22-05-2013', 'dd-mm-yyyy')

IN (select t.tdate

from transactions t

where c.CUSTOMER\_ID = t.CCUSTOMER\_ID);

/\*\*

q06

show sale number of books according to book\_tran info

\*/

select count(BISBN), BISBN from book\_tran group by BISBN;

/\*\*

q07

\*/

DELETE FROM customer

WHERE STREET\_NUMBER = 22

AND lname LIKE 'C%';

/\*\*

q08

select fname, lname of employee who handled transactions involve customer lives in "9012 South Dunedin"

\*/

select e.fname, e.lname

from employee e, transactions t, customer c

where c.postcode=9012 and c.CUSTOMER\_ID = t.CCUSTOMER\_ID and t.EIRD\_NUMBER = e.IRD\_NUMBER;

**6. Teamwork Summary**

Throughout the assignment the group met up regularly and had frequent discussion regarding the assignment tasks. It was agreed that it would be more productive to work on the tasks as a collective due to reduced cost of communication. As a result, the group worked on bulk of the assignment together and then individuals championed various elements of the assignment and saw them completed. Another aspect we found useful was the use of version control, uploading the latest version on Github for the group to review as changes were made. This ensured that we’re always working with the current version and any changes would be visible to the entire group.