



# ADVANCE DATABASE SYSTEM

## DEVELOPMENT

### CC6001

URL

[URL for website](#)

<http://focserver.lodonmet.ac.uk/cc6001srr0081>

LECTURER: MR. SHARJEEL ASLAM  
YEAR 2017/18

Student ID: 11061290

Student name: srikanthan Ramakrishnan

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## **INTRODUCTION**

My Library is a medium sized limited company which provides educational resources e.g. books, CDs etc. to students in different subjects (computing, business etc). They have decided to develop online library management system

## 2.1 Normalization

### UNNORMALIZED DATA

UNNORMALIZED DATA

(Assumption)

#### Booked /cd issued reference invoice

|             |            |                |                      |
|-------------|------------|----------------|----------------------|
|             |            | member name    | jhon                 |
| ref code    | 1          | member address | london west ac23 5rr |
| issud date  | 20/05/2010 | member contact | 2084512365           |
| return date | 03/06/2010 |                |                      |
| admin id    |            |                |                      |

#### **product issued**

| cd                   | runtime      | subject   | author      | qty        |
|----------------------|--------------|-----------|-------------|------------|
| database development | 2 hours      | ERD       | kevin       | 1          |
| book                 | book_name    | isbn      | author name | book title |
| software engineering | coding in c# | isbn-3341 | jhon        | coding     |

#### **Product reserved**

| cd                  | runtime          | name      | subject     | qty    | reserve_expire  |
|---------------------|------------------|-----------|-------------|--------|-----------------|
| nill                | null             | null      | null        | null   | null            |
| book                | book_name        | isbn      | author name | author | reserver expire |
| hardwae engineering | procceers design | isbn-3424 | kavin       | bitsas | 03/06/2010      |

## Unnormalized data

| ref-code | memer information | admin information | product information | issued date | reserve date | reserved ex date | qty | resered item | return it | return date |
|----------|-------------------|-------------------|---------------------|-------------|--------------|------------------|-----|--------------|-----------|-------------|
| 1        | jhon peter londn  | mike david        | cd                  | 10/04/2010  | 10/04/2010   | 17/04/2010       | 1   | null         | null      | null        |
| 2        | jhon peter london | mike david        | book                | 10/04/2010  | 10/04/2010   | 17/04/2010       | 1   | null         | null      | null        |
| 3        | jhon peter london | mike david        | cd                  | null        | 10/04/2010   | 17/04/2010       | 1   | cd           | null      | null        |
| 4        | david kaha        | julia amzaon      | book                | null        | null         | null             | 1   | null         | book      | #####       |
| 5        | mike kuch         | viera davsa       | cd                  | null        | 10/04/2010   | 21/04/2010       | 1   | null         | null      | null        |

## 1NF NORMALIZATION

One of 1NF Rule finding primary key

**Issuno (primary key)**

Ref\_cod  
Member information  
Admin information  
Product information  
Issued date  
Reserved date  
Reserved date expired  
Qty  
Reserved item  
Return item  
Return date

**1NF (Another 1NF RULE ATTRIBUTES MUST BE UNIQUE) SO SPLITTING ATTRIBUTES FURTHR TO BE UNIQUE AND ATTOMIC**

**issued no (primary key)**

issud date  
return date  
admin id  
cd  
**runtime**  
cd name  
qty  
book  
isbn

book author fname  
book author lname  
book author mnme  
book name

book title  
**subject**  
cd  
runtime  
cd name  
cd subject  
cd qty  
reserver expire date  
book name  
book isbn  
book author  
book title  
book subject  
book reserve expire date  
member fname  
member mname  
member lname  
member address  
member postcode

#### **1NF (ONE OF 1NF RULE -NO REPETITIVE DATA)**

| <b><u>Issued table</u></b>     |
|--------------------------------|
| <b>issued no (primary key)</b> |
| issud date                     |
| return date                    |
| admin id                       |
| cd id (primary key)            |
| qty                            |
| auth id                        |
| cd qty issued                  |
| reserver expire date           |
| book resrve exprie date        |
| menber fname                   |
| member mname                   |
| member lname                   |
| member address                 |
| member postcode                |

| <b><u>cd table</u></b>     |
|----------------------------|
| <b>cd id (primary key)</b> |
| cd name                    |
| cd runtime                 |
| cd subject                 |
| cd qty                     |

| <b><u>Author table</u></b>     |
|--------------------------------|
| <b>author ID (PRIMARY KEY)</b> |
| book                           |
| isbn                           |
| book author fname              |
| book author lname              |
| book author mnme               |
| book name                      |

| <b><u>book_table</u></b> |
|--------------------------|
|--------------------------|

|              |
|--------------|
|              |
| book_id      |
| book_title   |
| book_subject |
| book_name    |
| book_isbn    |

**2NF RULE EACH ATTRIBUTE SHOULD NOT PARTIALLY DEPEND ON  
PRIMARY KEY**

|                                |                            |                        |
|--------------------------------|----------------------------|------------------------|
| <b>Issue table</b>             | <b>cd table</b>            | <b>Return table</b>    |
| <b>issued no (primary key)</b> | <b>cd id (primary key)</b> | return id              |
| issud date                     | cd name                    | return date            |
|                                | cd runtime                 |                        |
|                                | cd subject                 |                        |
|                                | cd qty                     |                        |
|                                |                            | <b>admin table</b>     |
| <b>member table</b>            | <b>book table</b>          | admin_id               |
| mem id                         |                            | admin fname            |
| mem fname                      |                            | admin mname            |
| mem lname                      |                            | admin lname            |
| mem mname                      |                            | admin address          |
| mem address                    |                            | admin postcode         |
| mem postcode                   |                            |                        |
| <b>auth table</b>              | <b>book_table</b>          | <b>cd issued table</b> |
| auth id                        | book_id                    | issued id              |
| auth fname                     | book                       | issued date            |
| auth mname                     | isbn                       | qty issued             |
| auth lname                     | book name                  |                        |
|                                |                            | <b>reserved table</b>  |
|                                | book_id                    | reserved id            |
|                                | book_title                 | reserved date          |
|                                | book_subject               |                        |
|                                | book_name                  |                        |
|                                | book_isbn                  |                        |

**3NF**

**RULE (Form must be in 2NF, and transitive functional dependency on non-prime attributes on any super key should be removed)**

| <b>author1 table</b> |
|----------------------|
|                      |
| authorid(pk)         |
| fname                |
| lname                |
| mname                |
| address              |

| <b>admin1 table</b> |
|---------------------|
|                     |
| adminid             |
| admin name          |
| admin address       |
| admin contact       |

| <b>book author1</b> |
|---------------------|
|                     |
| authorid (fk)       |
| bookid(fk)          |

| <b>book_issue1</b> |
|--------------------|
|                    |
| issueid(pk)        |
| issue date         |
| book_id(fk)        |
| adminid(fk)        |

| <b>book reserve1</b> |
|----------------------|
|                      |
| reserve id           |
| reserve date         |
| book_id(fk)          |
| mem_id(fk)           |

| <b>book_return1<br/>table</b> |
|-------------------------------|
|                               |
| return_id                     |
| date                          |
| book_id(fk)                   |
| mem_id(fk)                    |

| <b>book_type1 table</b> |
|-------------------------|
|                         |
| book_typeid             |
| book_type_name          |

| <b>book1 table</b> |
|--------------------|
|                    |
| bookid(pk)         |
| bookname           |
| book isbn          |
| available          |
| total              |
| book_typeid(fk)    |

| <b>cd issued</b> |
|------------------|
| issued id        |
| issued date      |
| admin id 9(fk)   |
| cd_id(fk)        |

| <b>cd_reserve1<br/>table</b> |
|------------------------------|
|                              |
| id                           |
| reserve date                 |
| memid(fk)                    |
| reserve_exp_date             |
| cd_id(fk)                    |

|                         |
|-------------------------|
| <b>cd return1 table</b> |
|                         |
| id                      |
| date return             |
| cdid(fk)                |

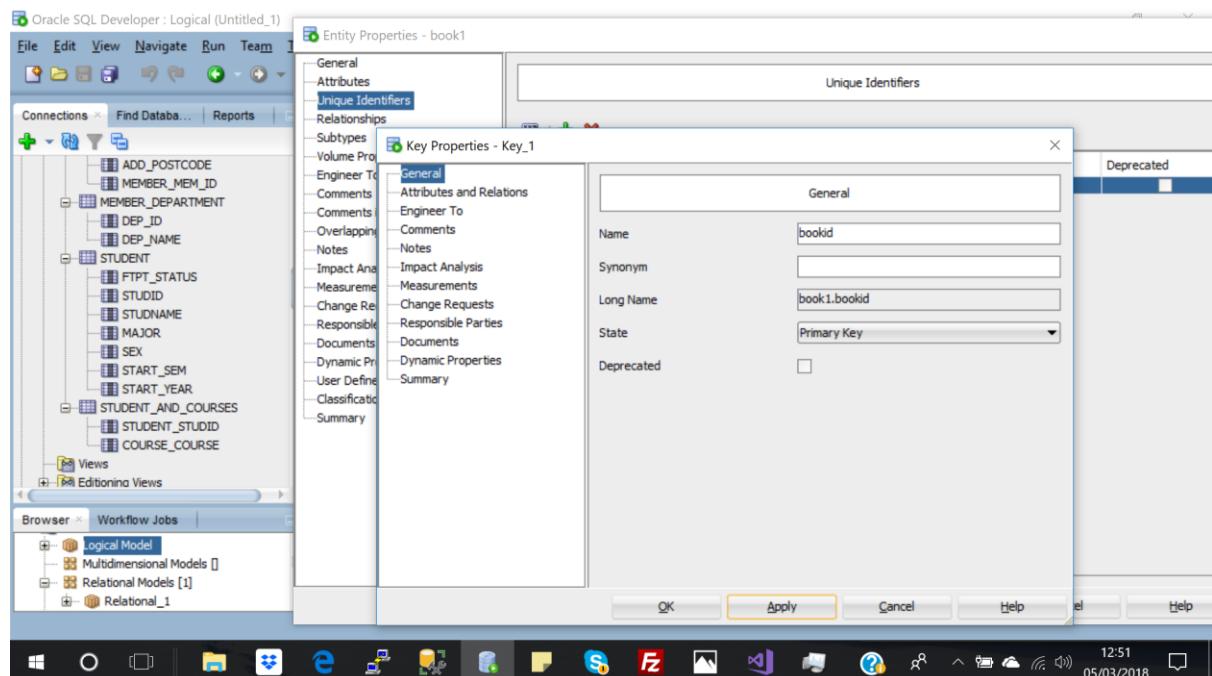
---

|                 |
|-----------------|
| <b>cd type1</b> |
|                 |
| id              |
| type            |

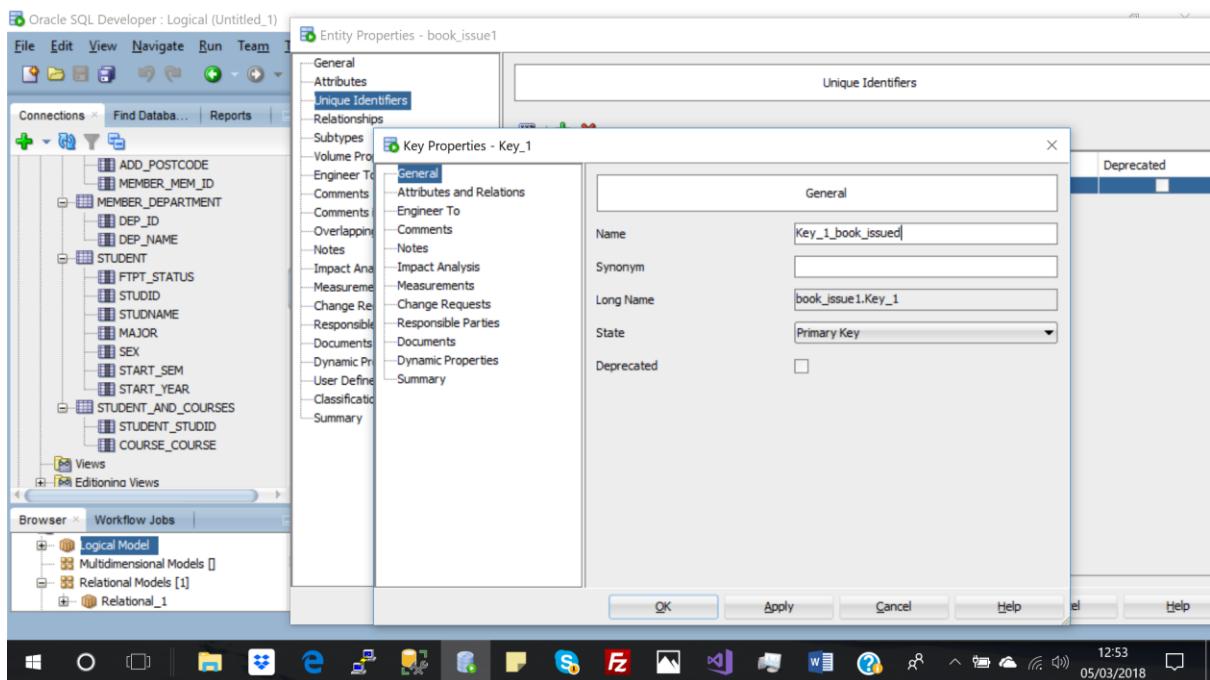
|                  |
|------------------|
| <b>cd1 table</b> |
|                  |
| cdid             |
| cdname           |
| cd subject       |
| qty available    |
| total qty        |
| cd_type_id(fk)   |

|                  |
|------------------|
| <b>mem dept1</b> |
| table            |
|                  |
| id               |
| dept             |

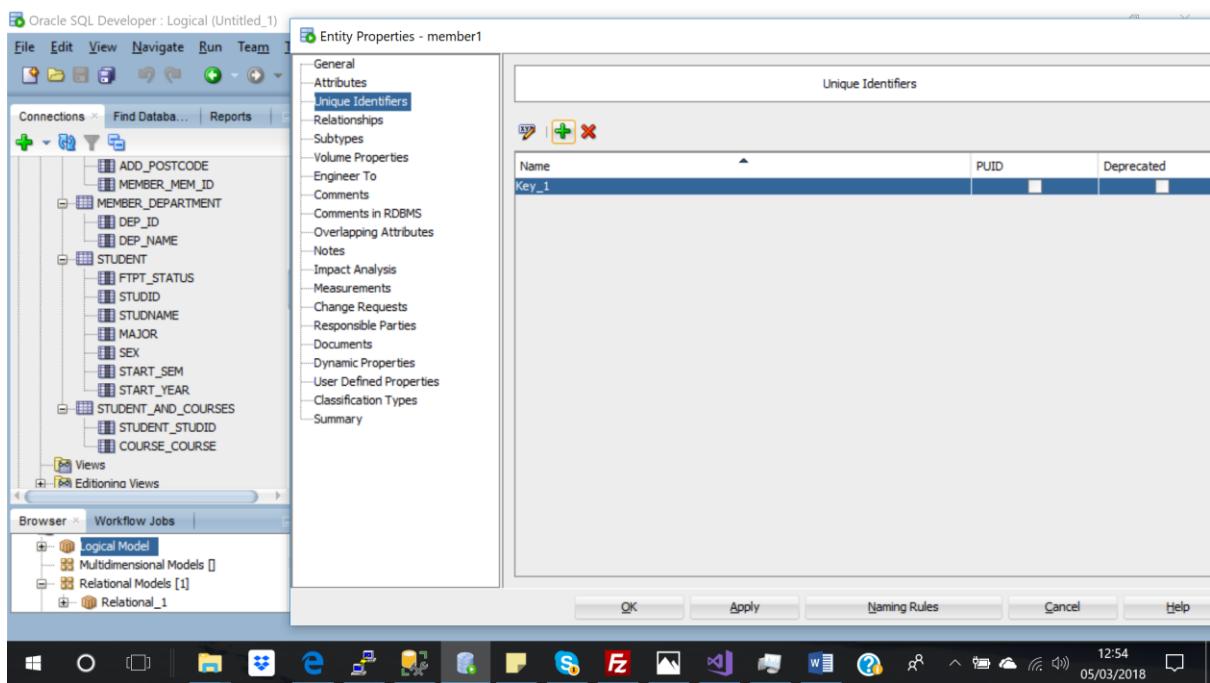
## Assigning primary key to tables

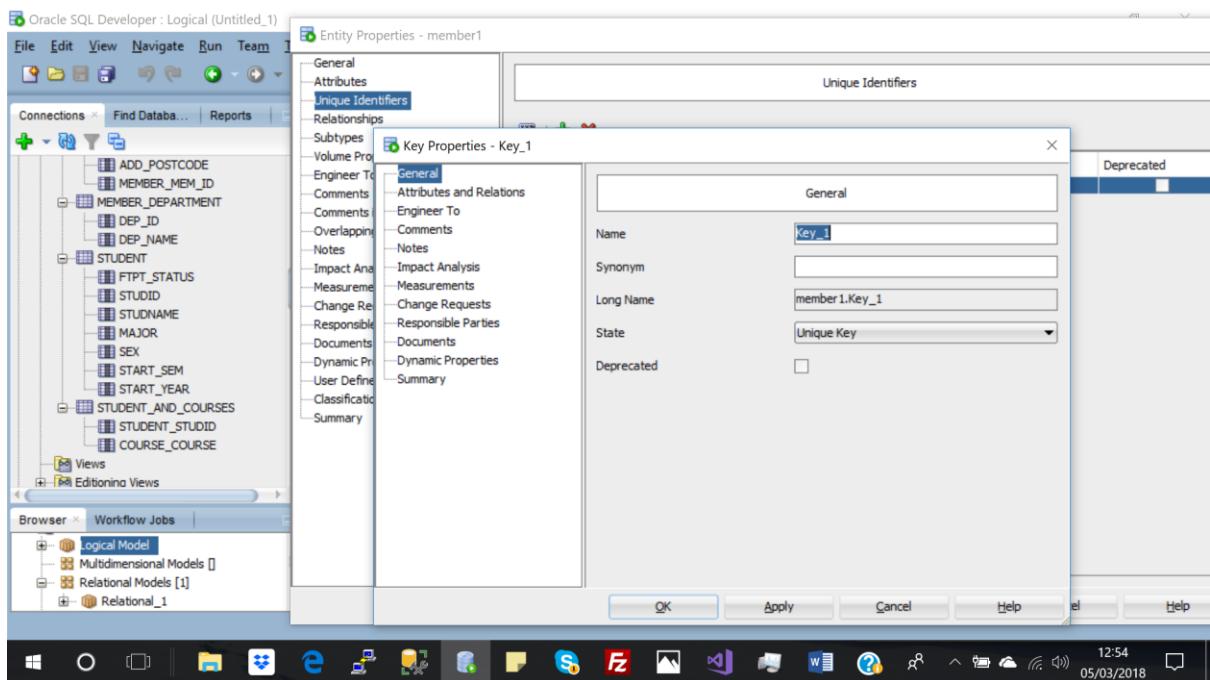


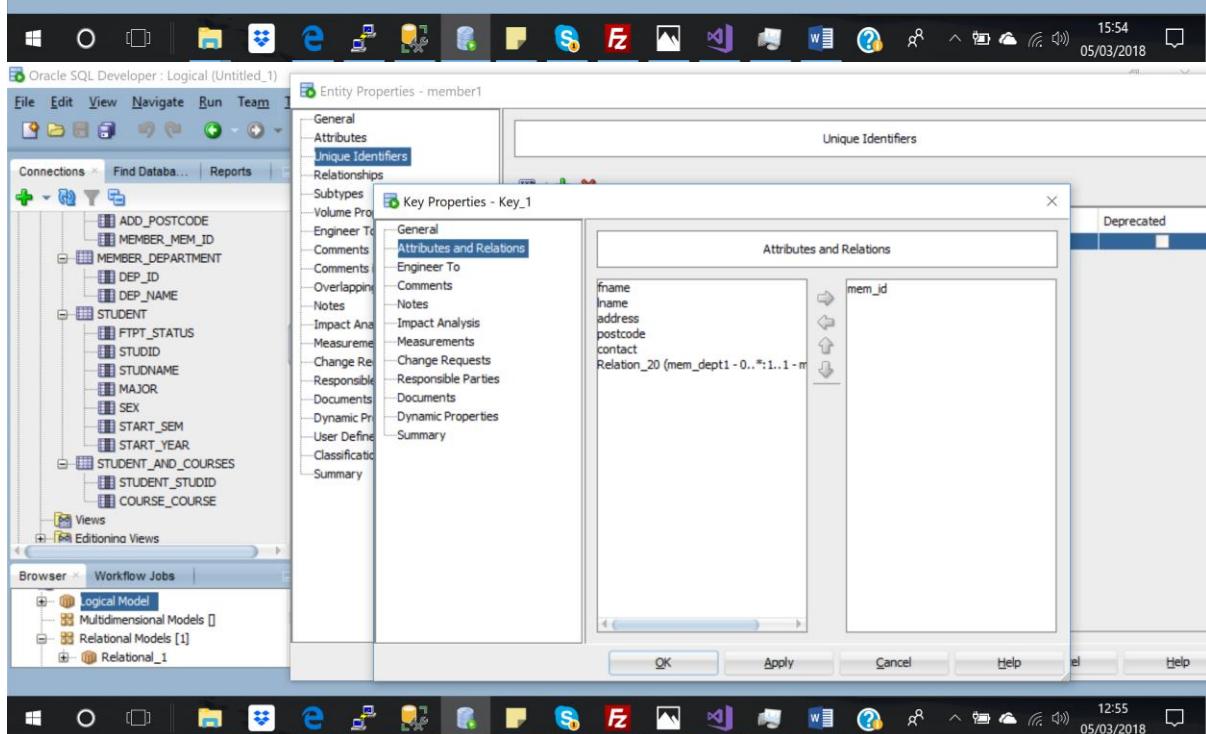
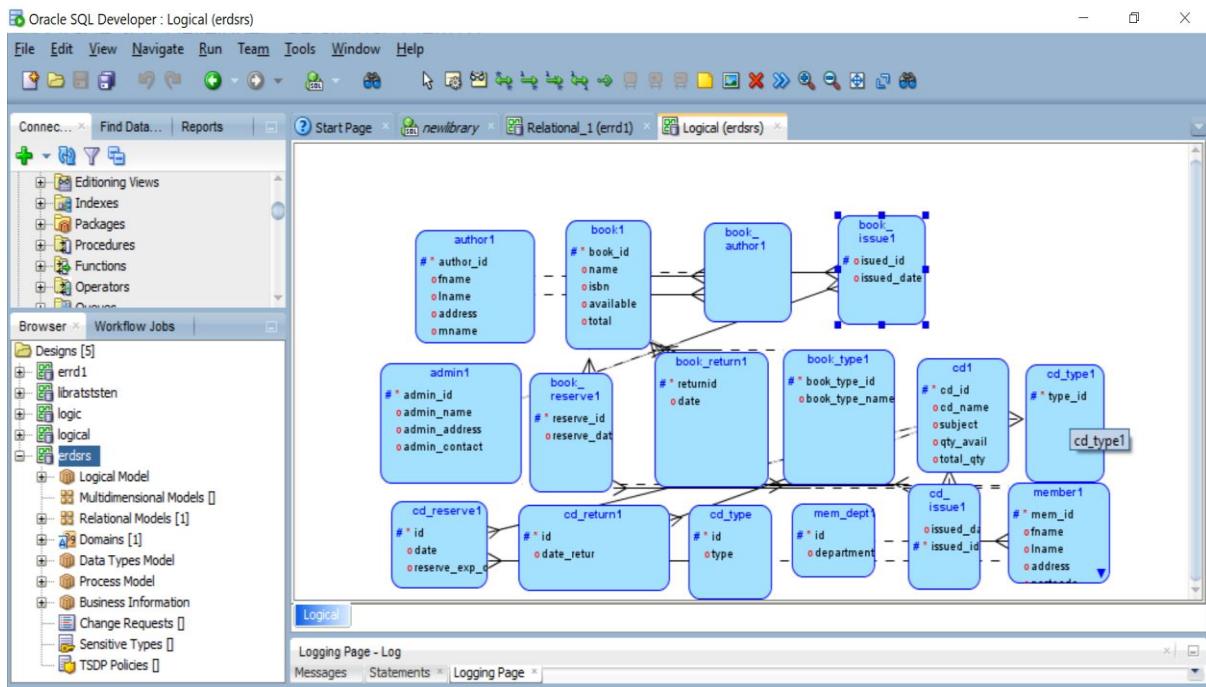
Book issued

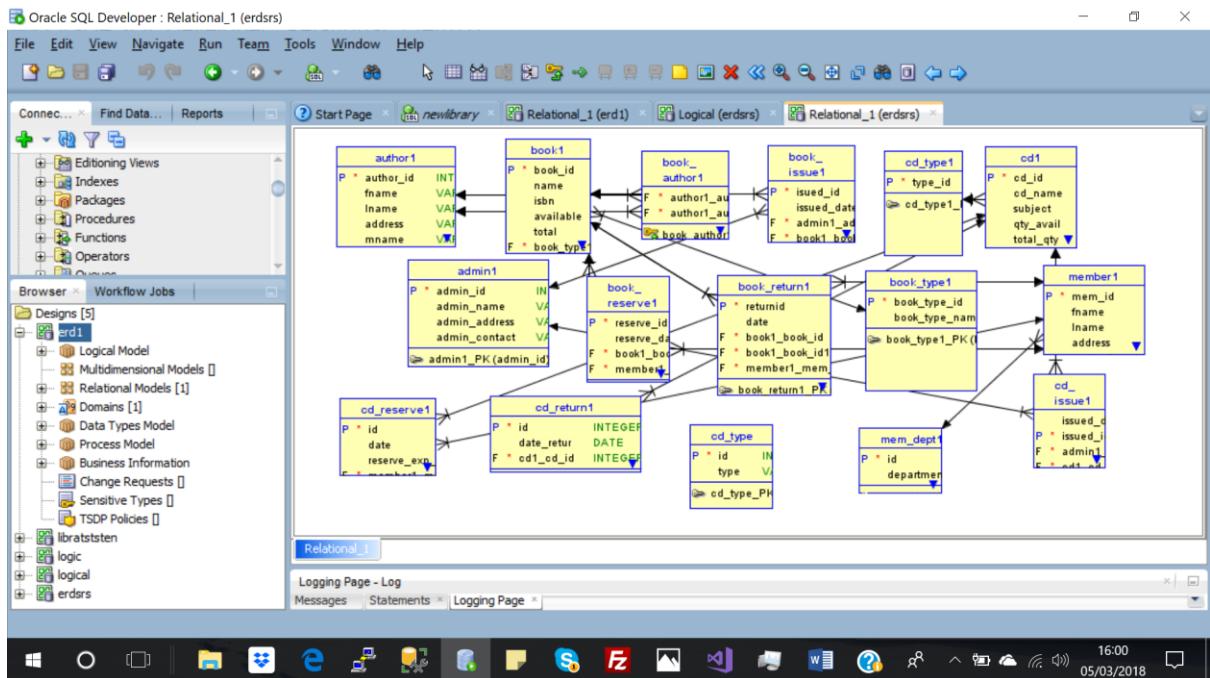


## Assigning primary key to member table









## 2.4 Data dictionary

### TABLE ADMIN1 ATTRIBUTE

Script Output

| Name          | Null?    | Type          |
|---------------|----------|---------------|
| ADMIN_ID      | NOT NULL | NUMBER (38)   |
| ADMIN_NAME    |          | VARCHAR2 (50) |
| ADMIN_ADDRESS |          | VARCHAR2 (50) |
| ADMIN_CONTACT |          | VARCHAR2 (30) |

## Author1 table attributes

The screenshot shows a table structure for the 'Author1' table. The columns are listed with their names, whether they can be null, and their data types. The table has five columns: AUTHOR\_ID, FNAME, LNAME, ADDRESS, and MNAME.

| Name      | Null?    | Type          |
|-----------|----------|---------------|
| AUTHOR_ID | NOT NULL | NUMBER (38)   |
| FNAME     |          | VARCHAR2 (30) |
| LNAME     |          | VARCHAR2 (30) |
| ADDRESS   |          | VARCHAR2 (30) |
| MNAME     |          | VARCHAR2 (30) |

## BOOK\_AUTHOR1 TABLE ATTRIBUTES

The screenshot shows a table structure for the 'BOOK\_AUTHOR1' table. It contains two columns: AUTHOR1\_AUTHOR\_ID1 and AUTHOR1\_AUTHOR\_ID.

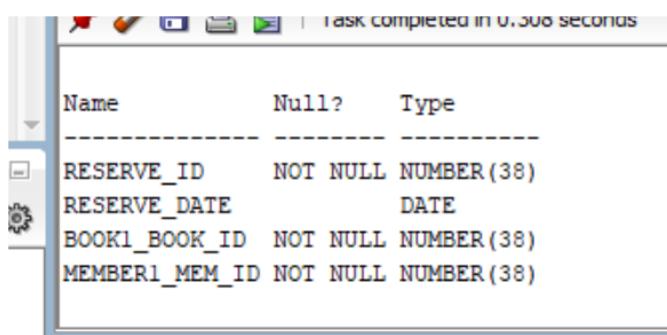
| AUTHOR1_AUTHOR_ID1 | NOT NULL NUMBER (38) |
|--------------------|----------------------|
| AUTHOR1_AUTHOR_ID  | NOT NULL NUMBER (38) |

## BOOK\_ISSUE1 TABLE ATTRIBUTES

The screenshot shows a table structure for the 'BOOK\_ISSUE1' table. It contains four columns: ISSUED\_ID, ISSUED\_DATE, ADMIN1\_ADMIN\_ID, and BOOK1\_BOOK\_ID.

| Name            | Null?    | Type        |
|-----------------|----------|-------------|
| ISSUED_ID       | NOT NULL | NUMBER (38) |
| ISSUED_DATE     |          | DATE        |
| ADMIN1_ADMIN_ID | NOT NULL | NUMBER (38) |
| BOOK1_BOOK_ID   | NOT NULL | NUMBER (38) |

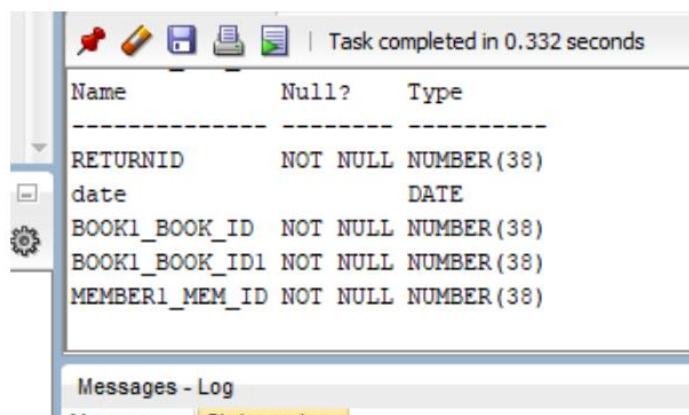
## BOOK\_RESERVE1 TABLE ATTRIBUTES



The screenshot shows a database interface with a red border. At the top, there's a toolbar with icons and the text "Task completed in 0.300 seconds". Below the toolbar is a table titled "BOOK\_RESERVE1 TABLE ATTRIBUTES". The table has three columns: "Name", "Null?", and "Type". The data in the table is as follows:

| Name           | Null?    | Type       |
|----------------|----------|------------|
| RESERVE_ID     | NOT NULL | NUMBER(38) |
| RESERVE_DATE   |          | DATE       |
| BOOK1_BOOK_ID  | NOT NULL | NUMBER(38) |
| MEMBER1_MEM_ID | NOT NULL | NUMBER(38) |

## BOOK\_RETURN1 TABLE ATTRIBUTES



The screenshot shows a database interface with a red border. At the top, there's a toolbar with icons and the text "Task completed in 0.332 seconds". Below the toolbar is a table titled "BOOK\_RETURN1 TABLE ATTRIBUTES". The table has three columns: "Name", "Null?", and "Type". The data in the table is as follows:

| Name           | Null?    | Type       |
|----------------|----------|------------|
| RETURNID       | NOT NULL | NUMBER(38) |
| date           |          | DATE       |
| BOOK1_BOOK_ID  | NOT NULL | NUMBER(38) |
| BOOK1_BOOK_ID1 | NOT NULL | NUMBER(38) |
| MEMBER1_MEM_ID | NOT NULL | NUMBER(38) |

At the bottom of the interface, there's a "Messages - Log" section with tabs for "Messages" and "Statements".

## BOOK\_TYPE1 TABLE ATTRIBUTES

| NAME           | TYPE                |
|----------------|---------------------|
| BOOK_TYPE_ID   | NOT NULL NUMBER(38) |
| BOOK_TYPE_NAME | VARCHAR2(50)        |

## Book1 table attributes

Script Output x | Task completed in 0.281 seconds

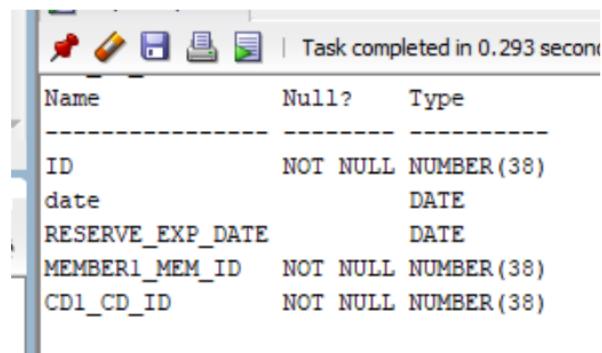
|                         |                     |
|-------------------------|---------------------|
| BOOK_ID                 | NOT NULL NUMBER(38) |
| NAME                    | VARCHAR2(30)        |
| ISBN                    | VARCHAR2(50)        |
| AVAILABLE               | NUMBER(38)          |
| TOTAL                   | NUMBER(38)          |
| BOOK_TYPE1_BOOK_TYPE_ID | NOT NULL NUMBER(38) |

Messages - Log

## cd\_issue1 table attributes

| NAME            | TYPE                |
|-----------------|---------------------|
| ISSUED_DATE     | DATE                |
| ISSUED_ID       | NOT NULL NUMBER(38) |
| ADMIN1_ADMIN_ID | NOT NULL NUMBER(38) |
| CD1_CD_ID       | NOT NULL NUMBER(38) |

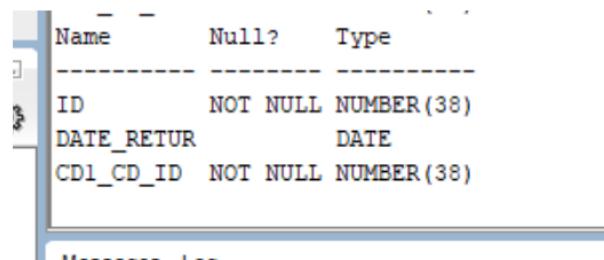
### cd\_reserve1 table attributes



A screenshot of the Oracle SQL Developer interface showing the attributes of the cd\_reserve1 table. The table has five columns: ID, date, RESERVE\_EXP\_DATE, MEMBER1\_MEM\_ID, and CD1\_CD\_ID. All columns are NOT NULL NUMBER(38) type.

| Name             | Null?    | Type       |
|------------------|----------|------------|
| ID               | NOT NULL | NUMBER(38) |
| date             |          | DATE       |
| RESERVE_EXP_DATE |          | DATE       |
| MEMBER1_MEM_ID   | NOT NULL | NUMBER(38) |
| CD1_CD_ID        | NOT NULL | NUMBER(38) |

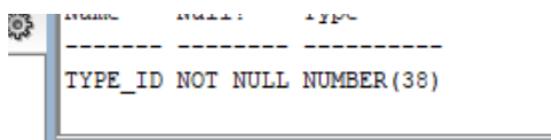
### cd\_return1 table attributes



A screenshot of the Oracle SQL Developer interface showing the attributes of the cd\_return1 table. The table has three columns: ID, DATE\_RETUR, and CD1\_CD\_ID. All columns are NOT NULL NUMBER(38) type.

| Name       | Null?    | Type       |
|------------|----------|------------|
| ID         | NOT NULL | NUMBER(38) |
| DATE_RETUR |          | DATE       |
| CD1_CD_ID  | NOT NULL | NUMBER(38) |

### cd\_type1 table attributes



A screenshot of the Oracle SQL Developer interface showing the attributes of the cd\_type1 table. The table has one column: TYPE\_ID, which is NOT NULL NUMBER(38).

| TYPE_ID | NOT NULL | NUMBER(38) |
|---------|----------|------------|
|         |          |            |

## cd1 table attributes

The screenshot shows the 'cd1' table attributes in Oracle SQL Developer. The table has six columns:

|   | Name             | Type                 |
|---|------------------|----------------------|
| 1 | CD_ID            | NOT NULL NUMBER (38) |
| 2 | CD_NAME          | VARCHAR2 (30)        |
| 3 | SUBJECT          | VARCHAR2 (30)        |
| 4 | QTY_AVAIL        | NUMBER (38)          |
| 5 | TOTAL_QTY        | NUMBER (38)          |
| 6 | CD_TYPE1_TYPE_ID | NOT NULL NUMBER (38) |

## mem\_dept1 table attributes

The screenshot shows the 'mem\_dept1' table attributes in Oracle SQL Developer. The table has two columns:

|   | Name       | Null?    | Type          |
|---|------------|----------|---------------|
| 1 | ID         | NOT NULL | NUMBER (38)   |
| 2 | DEPARTMENT |          | VARCHAR2 (50) |

## Member1 table attributes

The screenshot shows the 'Member1' table attributes in Oracle SQL Developer. The table has eight columns:

|   | Name         | Null?    | Type          |
|---|--------------|----------|---------------|
| 1 | DEPARTMENT   |          | VARCHAR2 (50) |
| 2 | MEM_ID       | NOT NULL | NUMBER (38)   |
| 3 | FNAME        |          | VARCHAR2 (50) |
| 4 | LNAME        |          | VARCHAR2 (30) |
| 5 | ADDRESS      |          | VARCHAR2 (30) |
| 6 | POSTCODE     |          | VARCHAR2 (30) |
| 7 | CONTACT      |          | VARCHAR2 (30) |
| 8 | MEM_DEPT1_ID | NOT NULL | NUMBER (38)   |

## **2.5 Generation of the database**

### **DDL SCRIPT FOR TABLE CREATION**

```
-- Generated by Oracle SQL Developer Data Modeler 17.4.0.355.2131
-- at: 2018-03-05 16:02:38 GMT
-- site: Oracle Database 11g
-- type: Oracle Database 11g
```

```
CREATE TABLE admin1 (
    admin_id      INTEGER NOT NULL,
    admin_name    VARCHAR2(50),
    admin_address VARCHAR2(50),
    admin_contact VARCHAR2(30)
);
```

```
CREATE TABLE author1 (
    author_id    INTEGER NOT NULL,
    fname        VARCHAR2(30),
    lname        VARCHAR2(30),
    address      VARCHAR2(30),
    mname        VARCHAR2(30)
```

);

```
CREATE TABLE book_author1 (
    author1_author_id1  INTEGER NOT NULL,
    author1_author_id   INTEGER NOT NULL
);
```

```
CREATE TABLE book_issue1 (
    issued_id      INTEGER NOT NULL,
    issued_date    DATE,
    admin1_admin_id  INTEGER NOT NULL,
    book1_book_id   INTEGER NOT NULL
);
```

```
CREATE TABLE book_reserve1 (
    reserve_id     INTEGER NOT NULL,
    reserve_date   DATE,
    book1_book_id  INTEGER NOT NULL,
    member1_mem_id INTEGER NOT NULL
);
```

```
CREATE TABLE book_return1 (
    returnid       INTEGER NOT NULL,
    "date"         DATE,
    book1_book_id  INTEGER NOT NULL,
```

```
book1_book_id1 INTEGER NOT NULL,  
member1_mem_id INTEGER NOT NULL  
);
```

```
CREATE TABLE book_type1 (  
    book_type_id    INTEGER NOT NULL,  
    book_type_name  VARCHAR2(50)  
);
```

```
CREATE TABLE book1 (  
    book_id          INTEGER NOT NULL,  
    name             VARCHAR2(30),  
    isbn             VARCHAR2(50),  
    available        INTEGER,  
    total            INTEGER,  
    book_type1_book_type_id  INTEGER NOT NULL  
);
```

```
CREATE TABLE cd_issue1 (  
    issued_date      DATE,  
    issued_id        INTEGER NOT NULL,  
    admin1_admin_id  INTEGER NOT NULL,  
    cd1_cd_id        INTEGER NOT NULL  
);
```

```
CREATE TABLE cd_reserve1 (  
    id               INTEGER NOT NULL,
```

```
"date"      DATE,  
reserve_exp_date DATE,  
member1_mem_id  INTEGER NOT NULL,  
cd1_cd_id     INTEGER NOT NULL  
);
```

```
CREATE TABLE cd_return1 (  
    id      INTEGER NOT NULL,  
    date_retur DATE,  
    cd1_cd_id  INTEGER NOT NULL  
);
```

```
CREATE TABLE cd_type (  
    id    INTEGER NOT NULL,  
    type  VARCHAR2(30)  
);
```

```
CREATE TABLE cd_type1 (  
    type_id  INTEGER NOT NULL  
);
```

```
CREATE TABLE cd1 (  
    cd_id      INTEGER NOT NULL,  
    cd_name    VARCHAR2(30),  
    subject    VARCHAR2(30),  
    qty_avail  INTEGER,  
    total_qty   INTEGER,
```

```
cd_type1_type_id INTEGER NOT NULL  
);
```

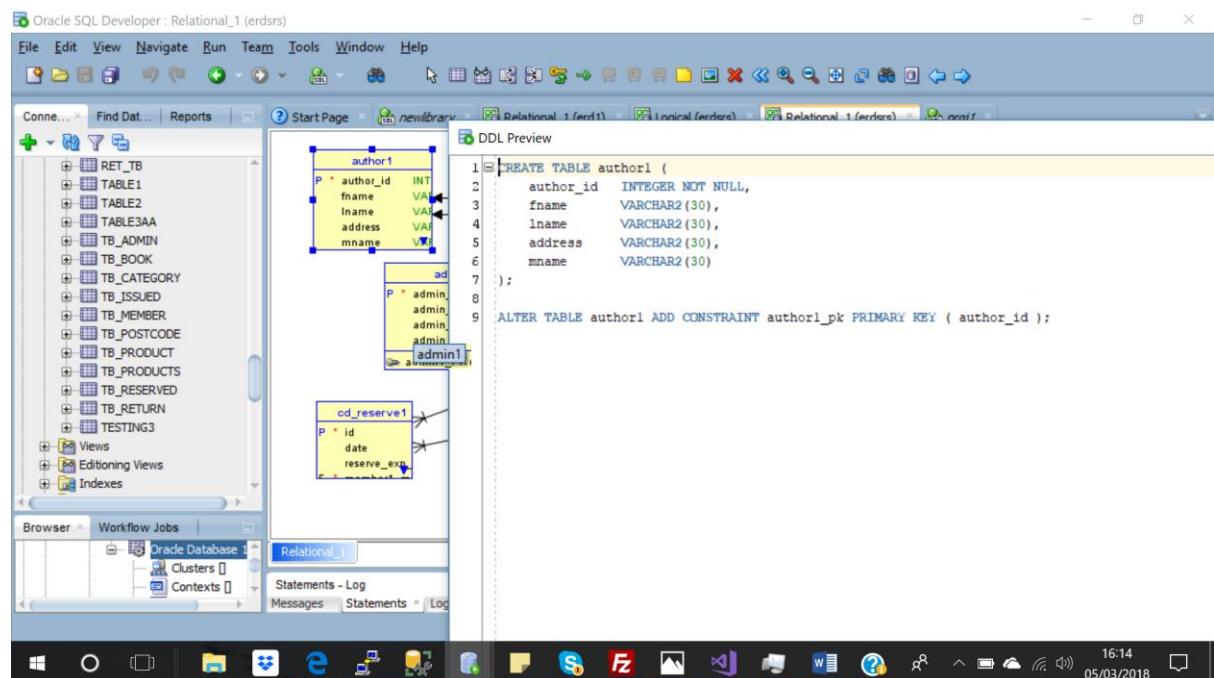
```
CREATE TABLE mem_dept1 (  
    id      INTEGER NOT NULL,  
    department  VARCHAR2(50)  
);
```

```
CREATE TABLE member1 (  
    mem_id      INTEGER NOT NULL,  
    fname      VARCHAR2(50),  
    lname      VARCHAR2(30),  
    address     VARCHAR2(30),  
    postcode    VARCHAR2(30),  
    contact     VARCHAR2(30),  
    mem_dept1_id  INTEGER NOT NULL  
);
```

|

## INSERTING DATA INTO TABLES AND RETRIVING

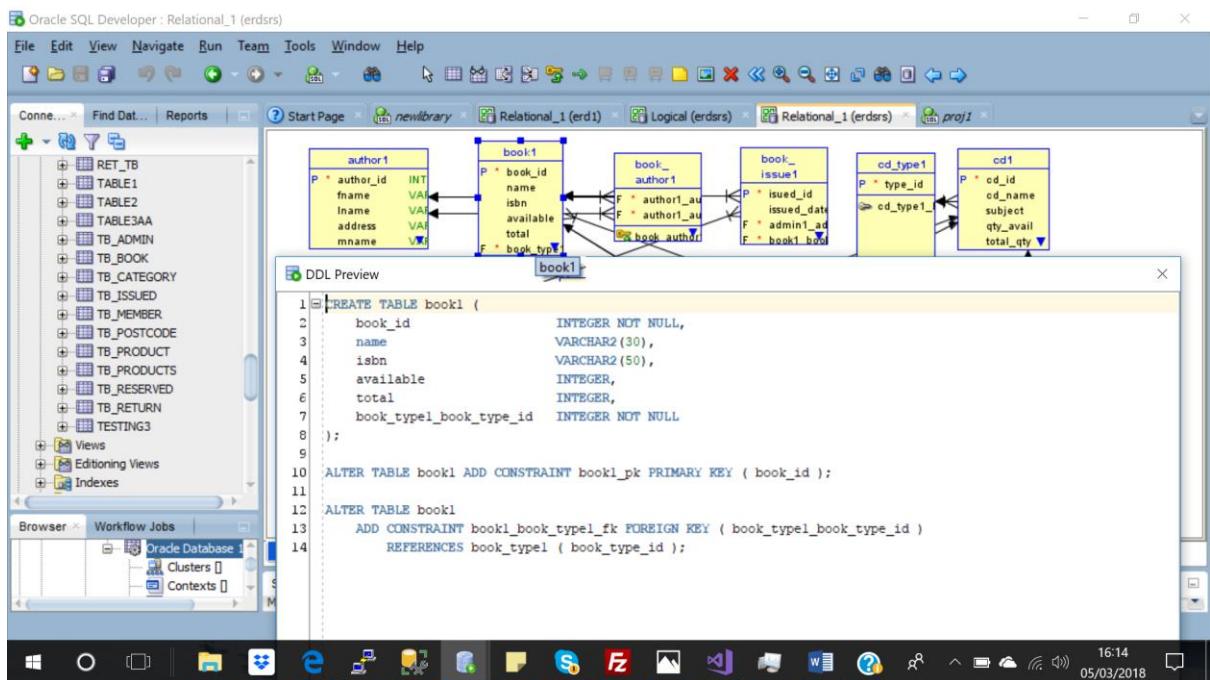
### DDL FOR AUTHOR TABLE



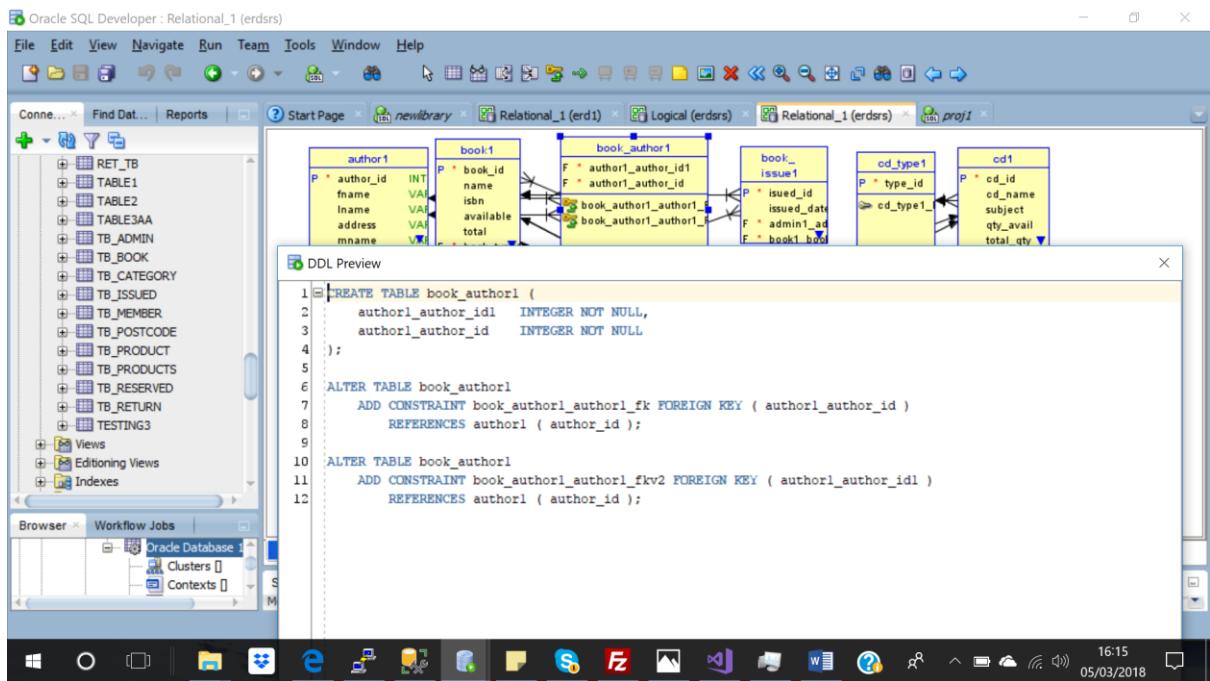
The screenshot shows the Oracle SQL Developer interface. On the left, the Database Navigator displays various tables and objects. In the center, the 'author1' table is selected, showing its schema with columns: author\_id (PK), fname, lname, address, and mname. Below the table diagram, the 'DML Preview' pane shows the SQL DDL code:

```
1 CREATE TABLE author1 (
2     author_id  INTEGER NOT NULL,
3     fname      VARCHAR2(30),
4     lname      VARCHAR2(30),
5     address    VARCHAR2(30),
6     mname      VARCHAR2(30)
7 );
8
9 ALTER TABLE author1 ADD CONSTRAINT author1_pk PRIMARY KEY ( author_id );
```

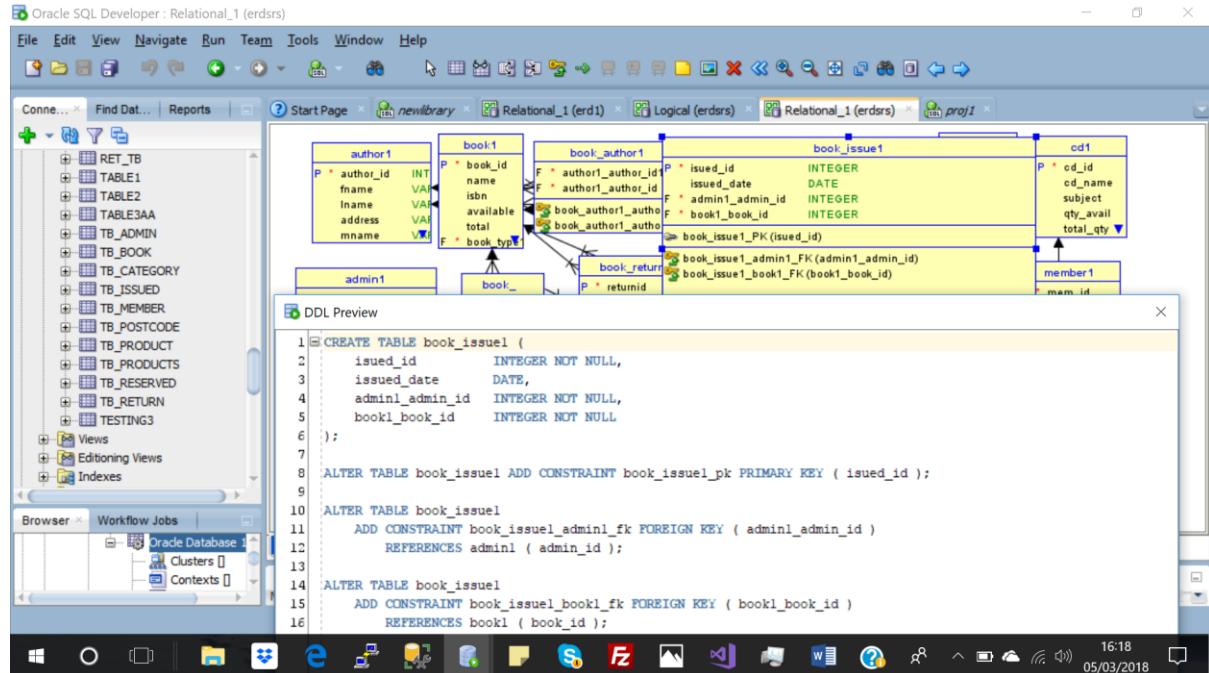
### DDL FOR BOOK TABLE



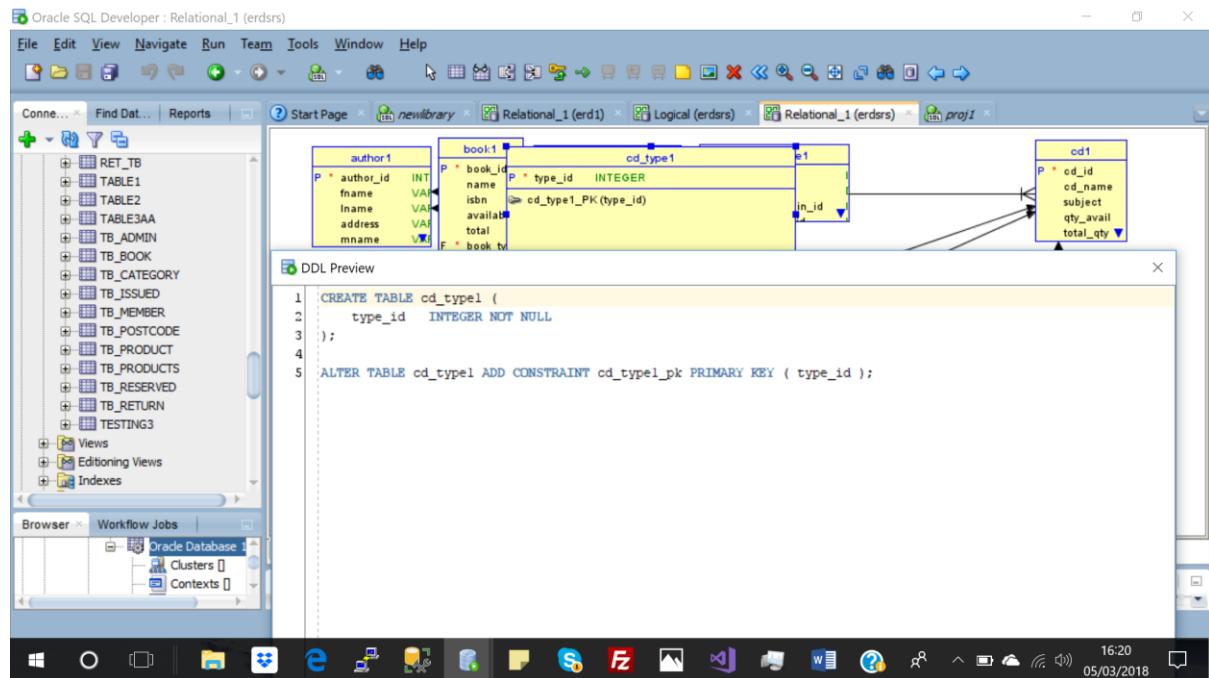
## DDL FOR BOOK AUTHOR1



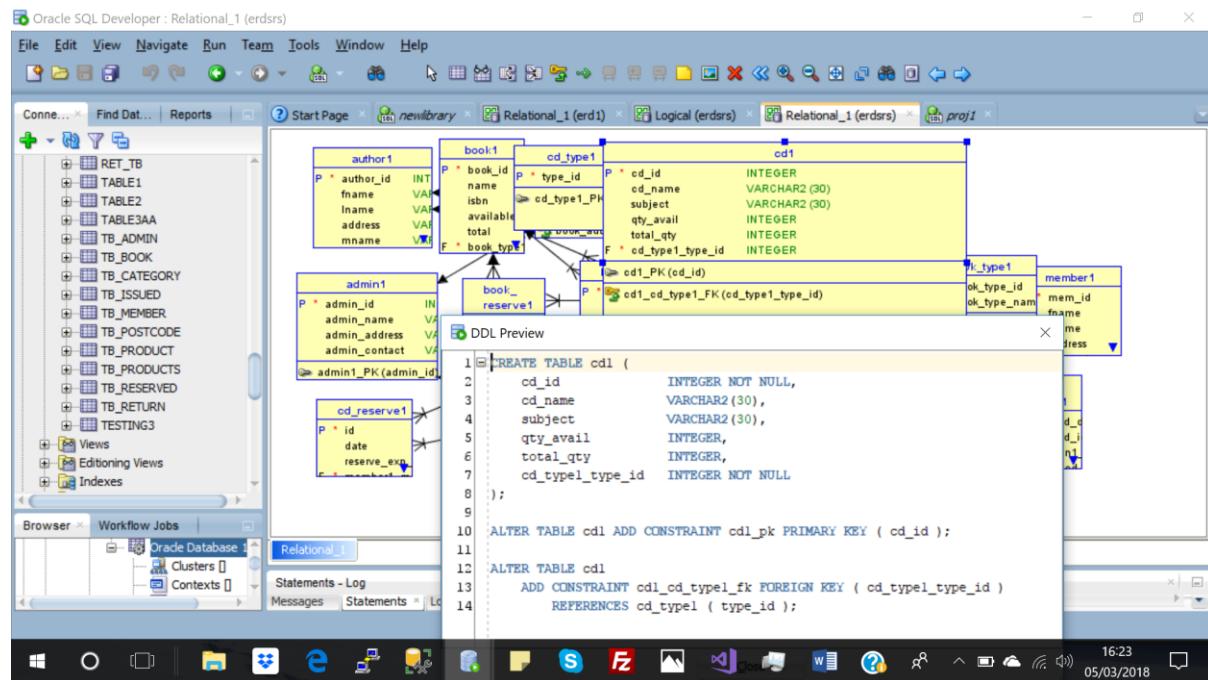
## BOOK ISSUE1 DDL



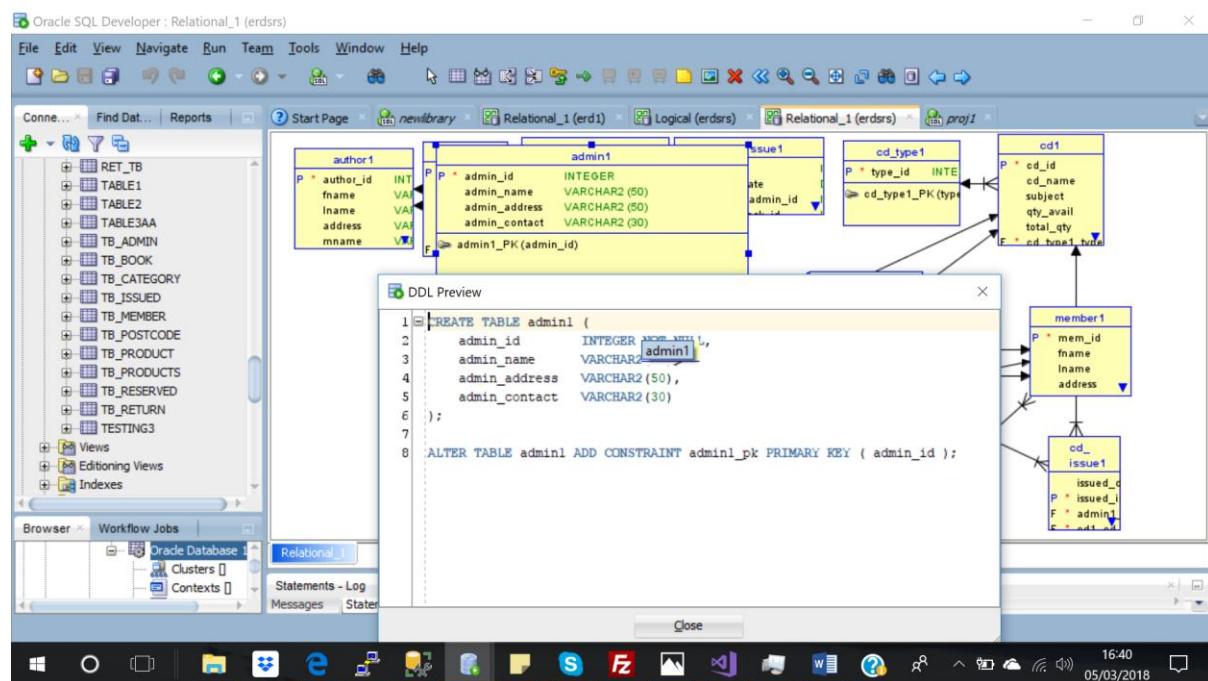
## CD\_TYPE DDL



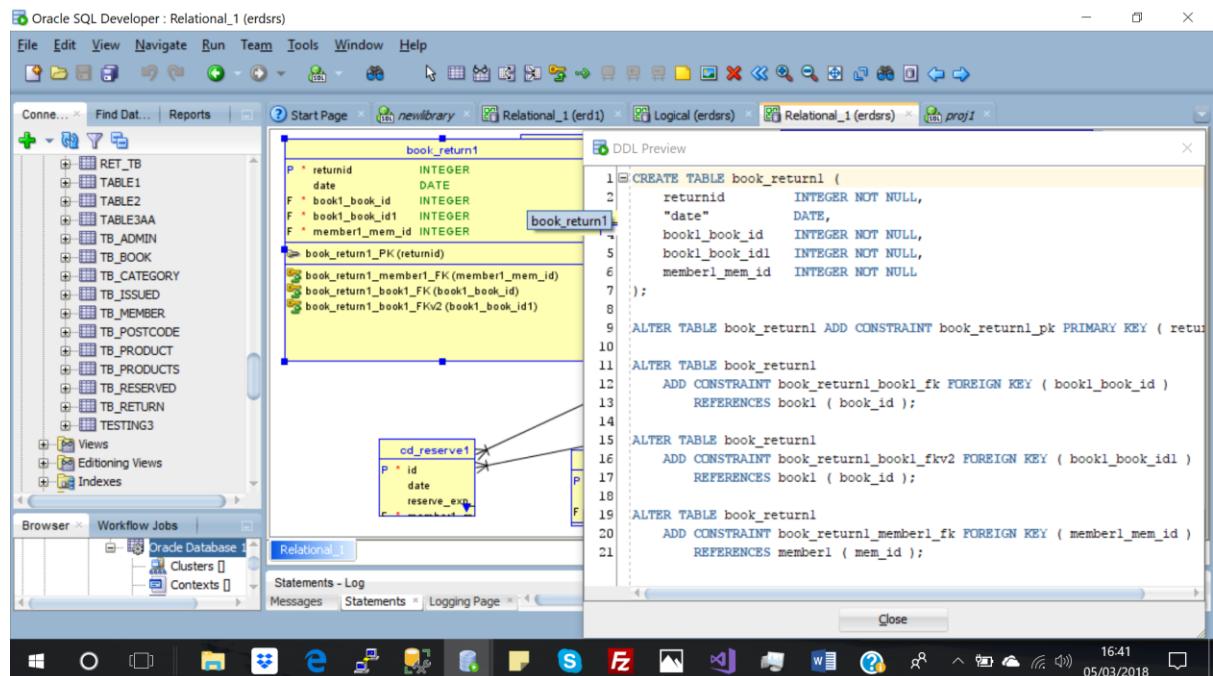
## CD TABLE DDL



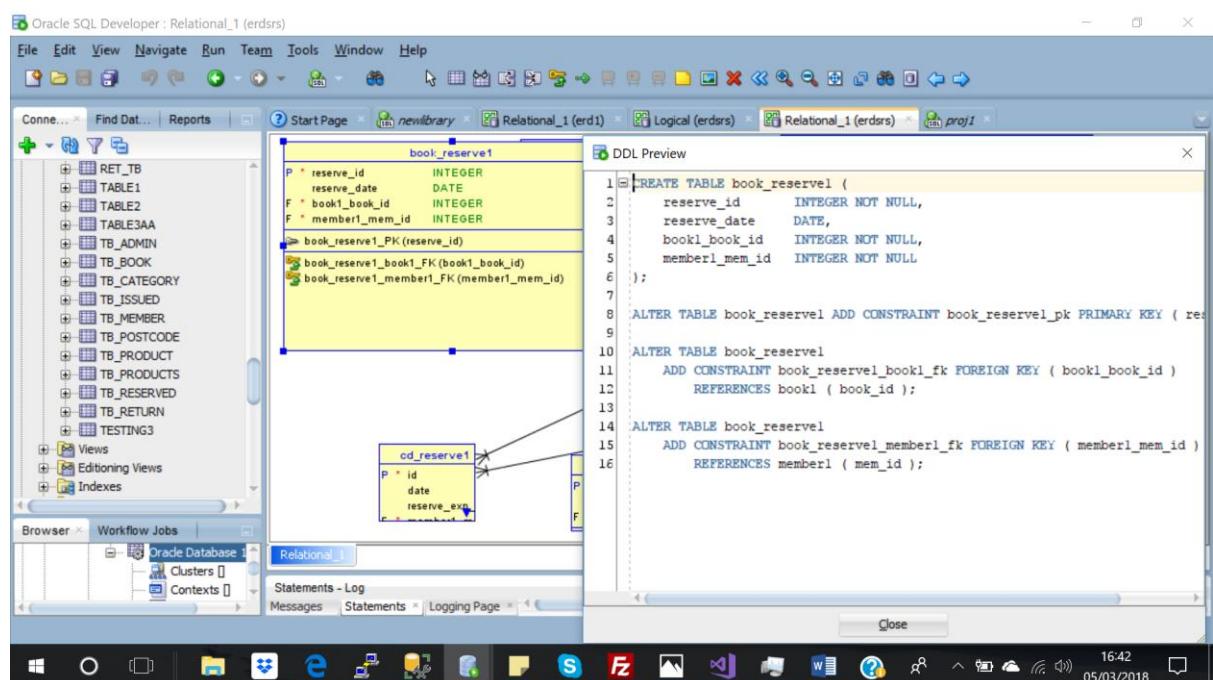
## Admin table DDL



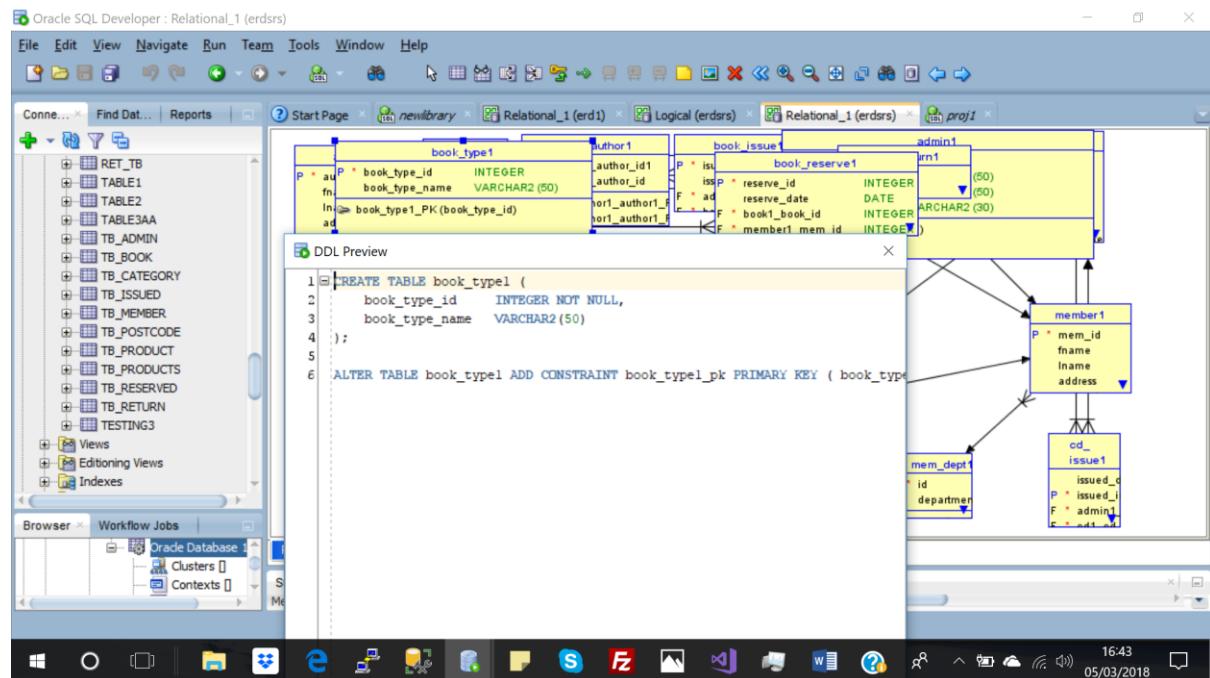
## BOOK RETURN TABLE DDL



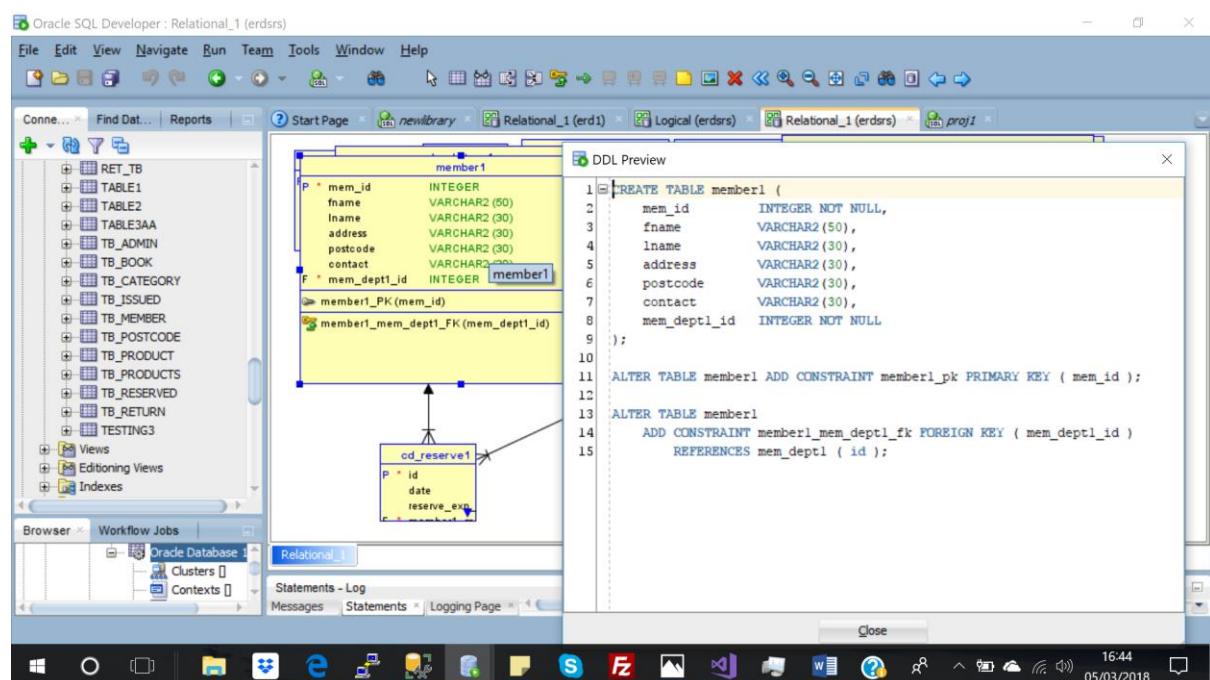
## Book reserve DDL



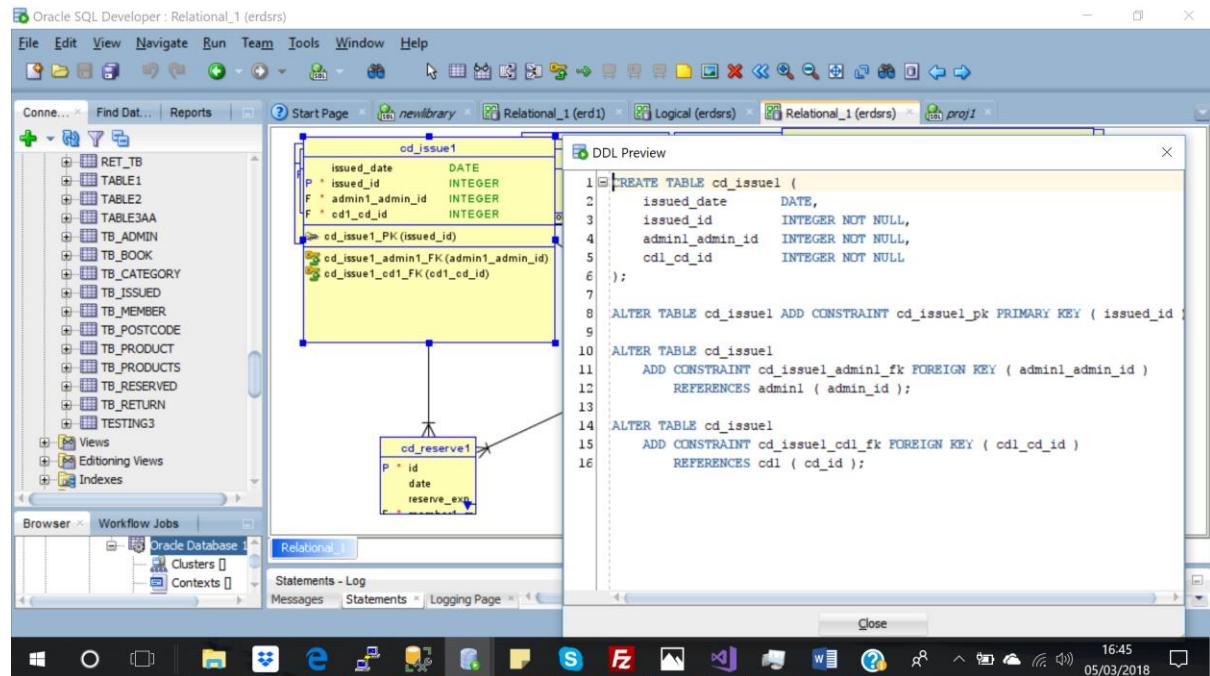
## Book type DDL



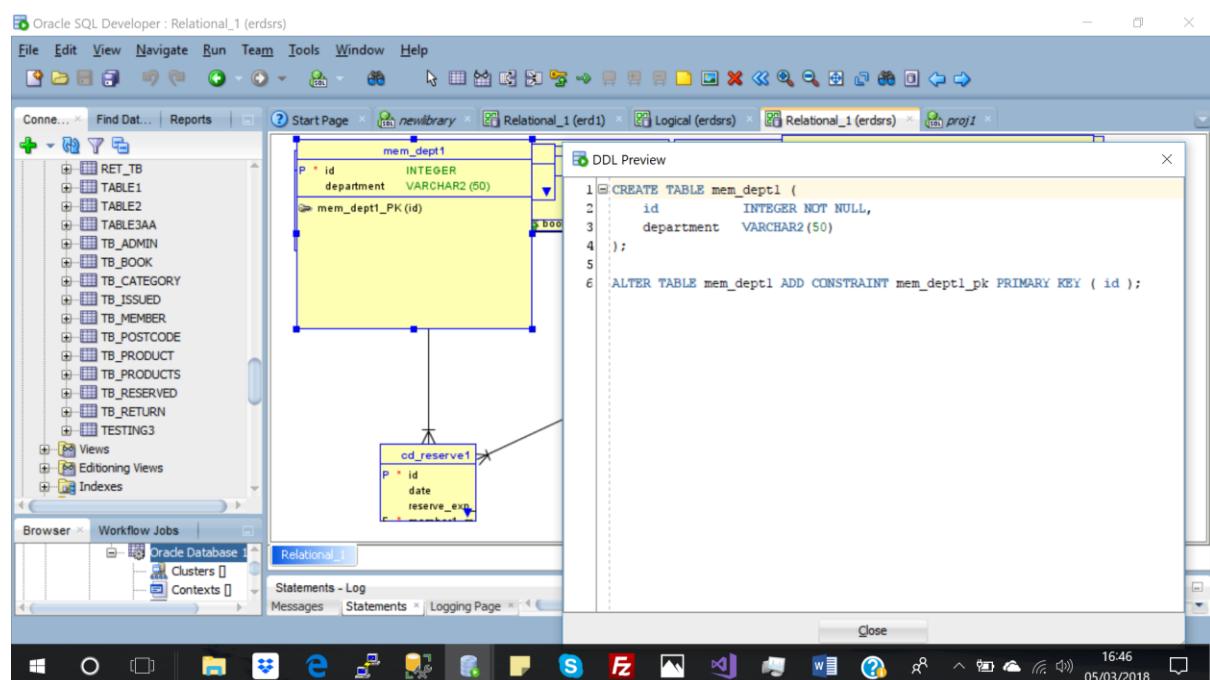
## Member Table DDL



## cd-issue DDL



## Member Dept table DDL



## CD RESERVE DDL

The screenshot shows the Oracle SQL Developer interface with the 'Relational\_1 (erdsrs)' connection selected. In the central workspace, the 'cd\_reserve1' table is highlighted in yellow. The table has the following structure:

```

P * id          INTEGER
      date        DATE
      reserve_exp_date DATE
F * member1_mem_id INTEGER
F * cd1_cd_id   INTEGER

```

Constraints shown are:

- `cd_reserve1_PK(id)`: PRIMARY KEY constraint on column `id`.
- `cd_reserve1_member1_FK(member1_mem_id)`: FOREIGN KEY constraint on column `member1_mem_id`, referencing `member1` table.
- `cd_reserve1_cd1_FK(cd1_cd_id)`: FOREIGN KEY constraint on column `cd1_cd_id`, referencing `cd1` table.

The right-hand panel displays the generated DDL code:

```

1 CREATE TABLE cd_reserve1 (
2     id          INTEGER NOT NULL,
3     "date"      DATE,
4     reserve_exp_date DATE,
5     member1_mem_id INTEGER NOT NULL,
6     cd1_cd_id   INTEGER NOT NULL
7 );
8
9 ALTER TABLE cd_reserve1 ADD CONSTRAINT cd_reserve1_pk PRIMARY KEY ( id );
10
11 ALTER TABLE cd_reserve1
12     ADD CONSTRAINT cd_reserve1_cd1_fk FOREIGN KEY ( cd1_cd_id )
13         REFERENCES cd1 ( cd_id );
14
15 ALTER TABLE cd_reserve1
16     ADD CONSTRAINT cd_reserve1_member1_fk FOREIGN KEY ( member1_mem_id )
17         REFERENCES member1 ( mem_id );

```

## Cd RETURN DDL

The screenshot shows the Oracle SQL Developer interface with the 'Relational\_1 (erdsrs)' connection selected. In the central workspace, the 'cd\_return1' table is highlighted in yellow. The table has the following structure:

```

P * id          INTEGER
      date_retur DATE
F * cd1_cd_id   INTEGER

```

Constraints shown are:

- `cd_return1_PK(id)`: PRIMARY KEY constraint on column `id`.
- `cd_return1_cd1_FK(cd1_cd_id)`: FOREIGN KEY constraint on column `cd1_cd_id`, referencing `cd1` table.

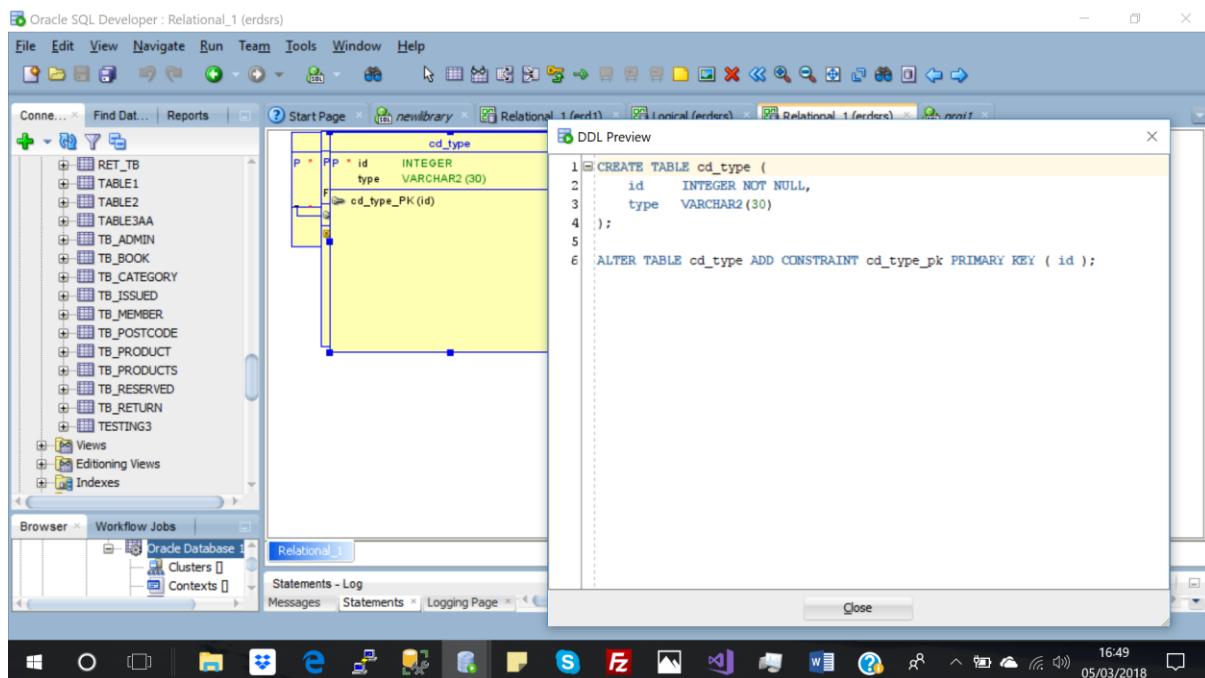
The right-hand panel displays the generated DDL code:

```

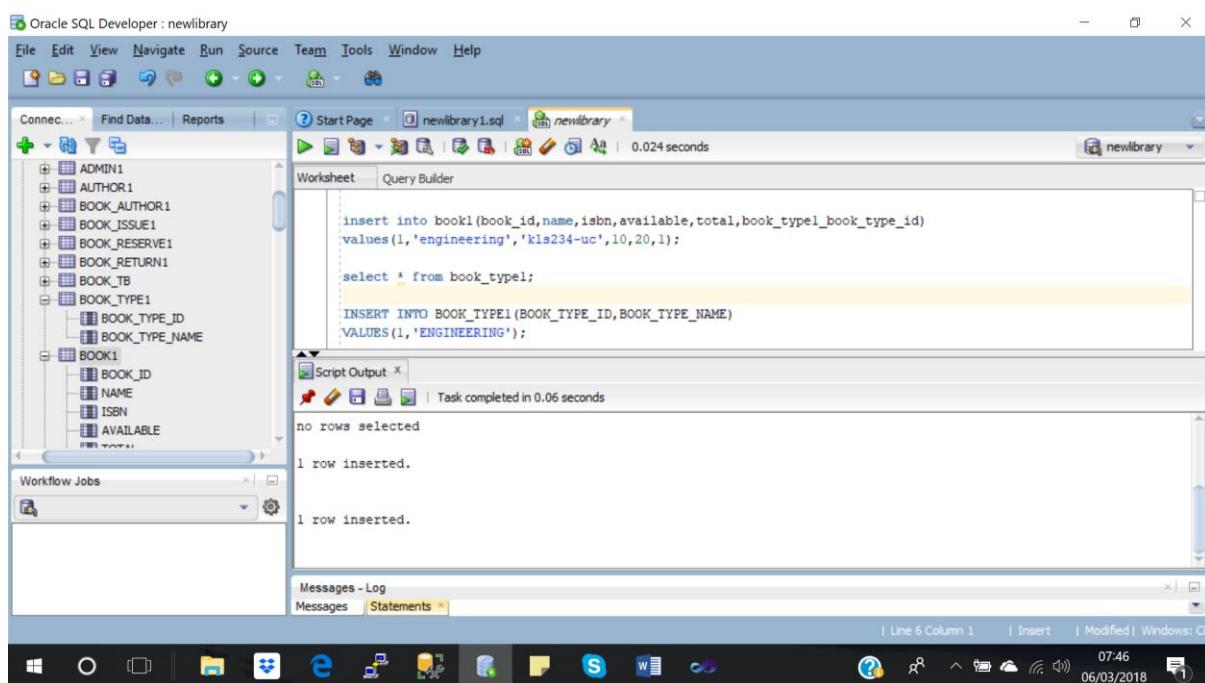
1 CREATE TABLE cd_return1 (
2     id          INTEGER NOT NULL,
3     date_retur DATE,
4     cd1_cd_id   INTEGER NOT NULL
5 );
6
7 ALTER TABLE cd_return1 ADD CONSTRAINT cd_return1_pk PRIMARY KEY ( id );
8
9 ALTER TABLE cd_return1
10    ADD CONSTRAINT cd_return1_cd1_fk FOREIGN KEY ( cd1_cd_id )
11        REFERENCES cd1 ( cd_id );

```

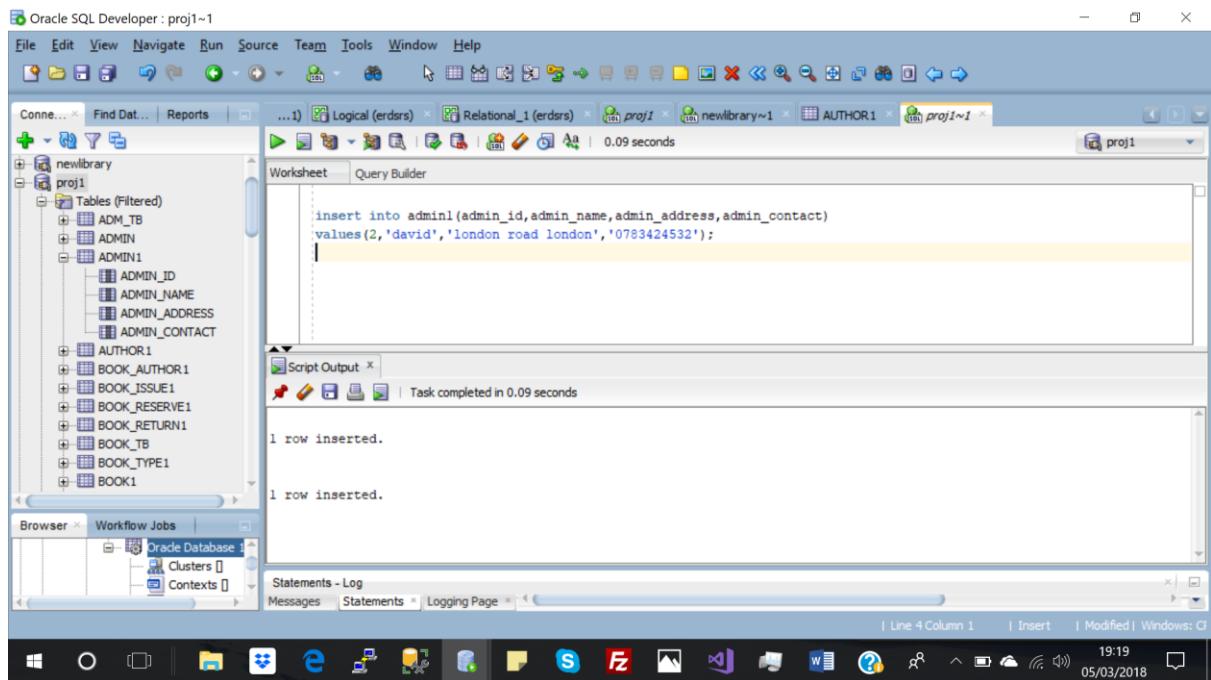
## CD TYPE DDL



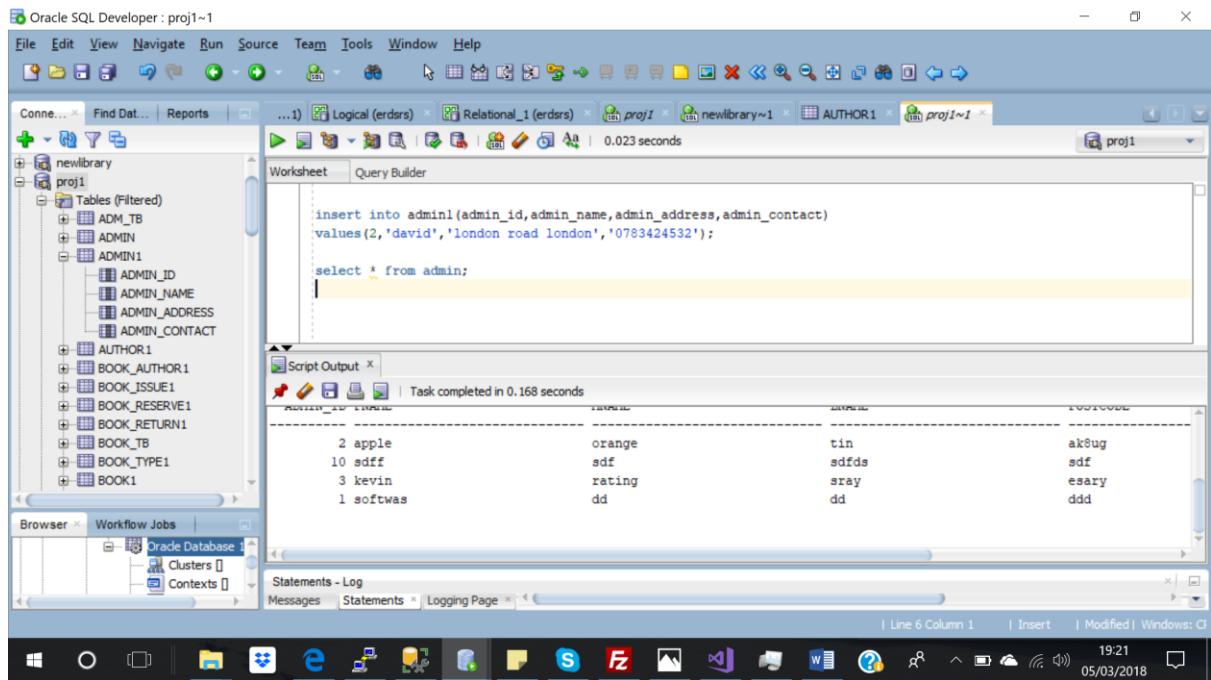
## Insert into book table



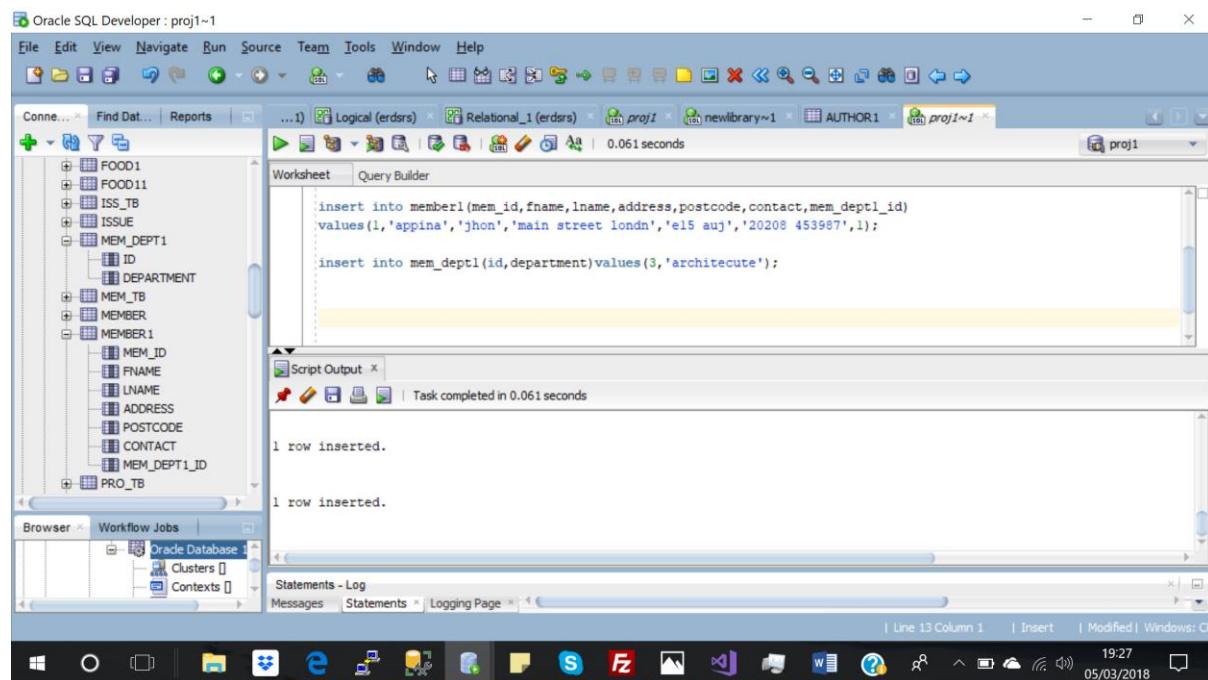
## Insert data into admin table



## Retrieving data from admin table



## Inserting data into department table



The screenshot shows the Oracle SQL Developer interface. In the central workspace, there is a 'Worksheet' tab with the following SQL code:

```
insert into member1(mem_id, fname, lname, address, postcode, contact, mem_dept1_id)
values(1,'appina','jhon','main street londn','e15 auj','20208 453987',1);

insert into mem_dept1(id,department)values(3,'architecute');
```

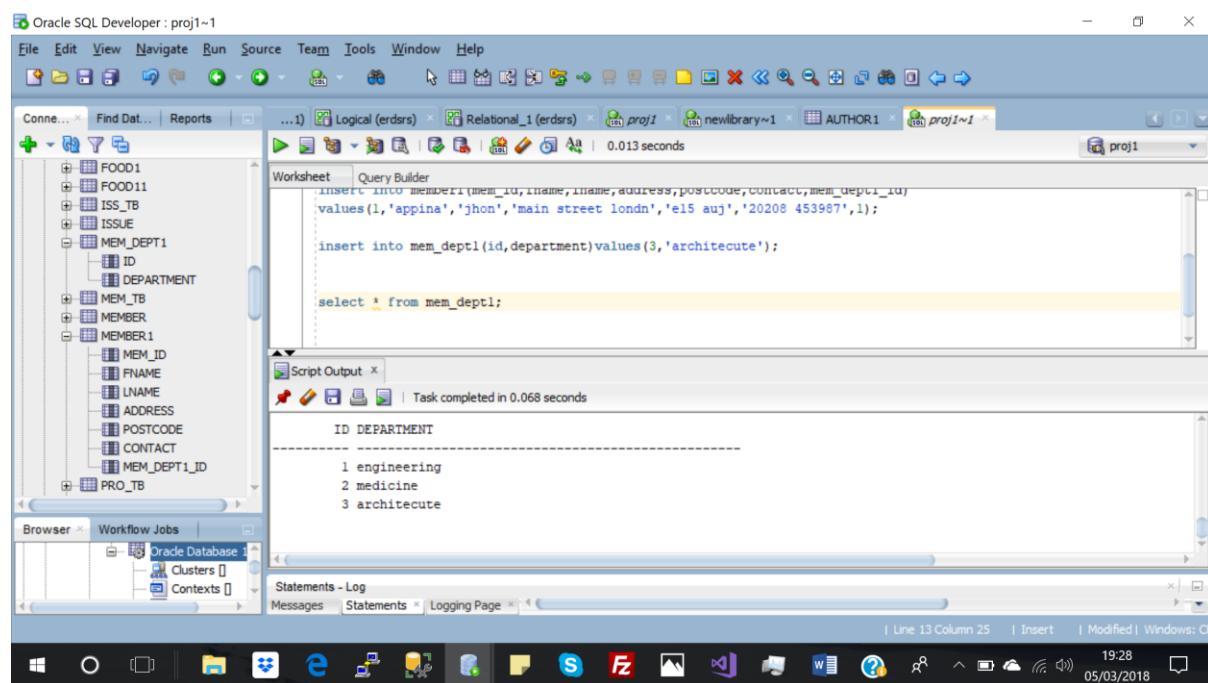
Below the worksheet, the 'Script Output' pane displays the results of the execution:

```
1 row inserted.

1 row inserted.
```

The status bar at the bottom right indicates the task completed in 0.061 seconds.

## Retrieving data from department table



The screenshot shows the Oracle SQL Developer interface. In the central workspace, there is a 'Worksheet' tab with the following SQL code:

```
insert into member1(mem_id, fname, lname, address, postcode, contact, mem_dept1_id)
values(1,'appina','jhon','main street londn','e15 auj','20208 453987',1);

insert into mem_dept1(id,department)values(3,'architecute');

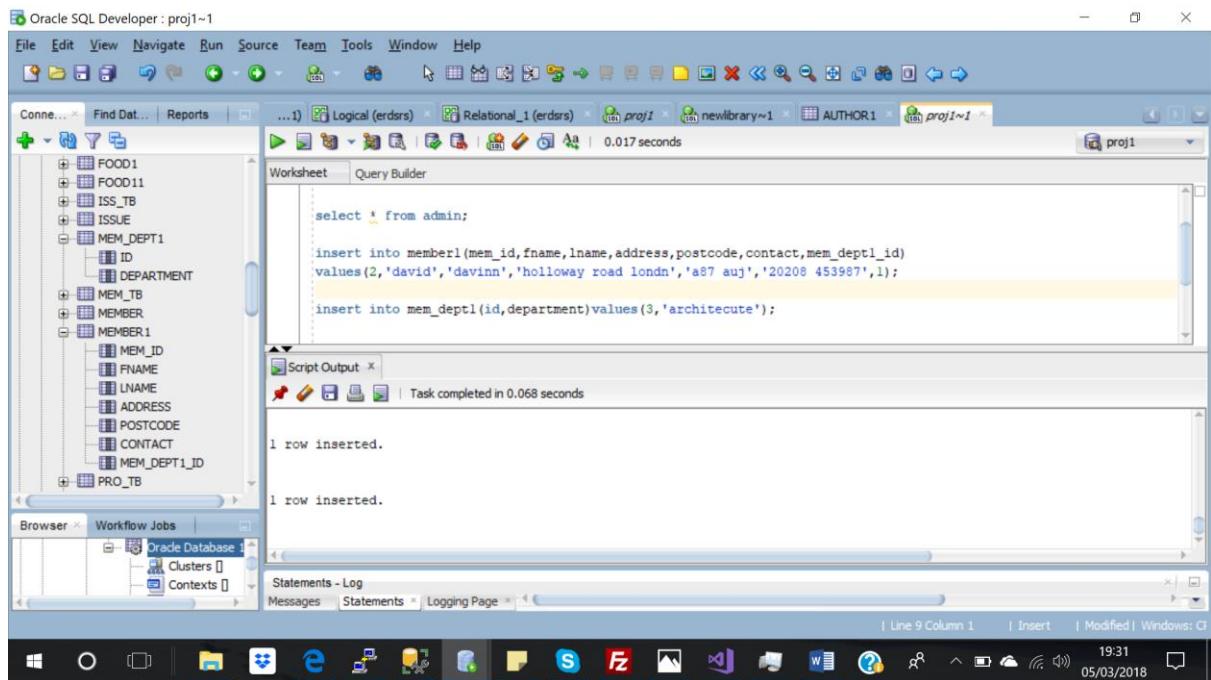
select * from mem_dept1;
```

Below the worksheet, the 'Script Output' pane displays the results of the execution:

| ID | DEPARTMENT  |
|----|-------------|
| 1  | engineering |
| 2  | medicine    |
| 3  | architecute |

The status bar at the bottom right indicates the task completed in 0.068 seconds.

## Inserting data into member table



The screenshot shows the Oracle SQL Developer interface. The left pane displays a database browser with tables like FOOD1, FOOD11, ISS\_TB, ISSUE, MEM\_DEPT1, MEMBER, and MEMBER1. The MEMBER1 table is expanded, showing columns: MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. The central workspace contains a query builder window with the following SQL code:

```
select * from admin;

insert into member1(mem_id,fname,lname,address,postcode,contact,mem_dept1_id)
values(2,'david','davinn','holloway road londn','a87 auj','20208 453987',1);

insert into mem_dept1(id,department)values(3,'architecte');
```

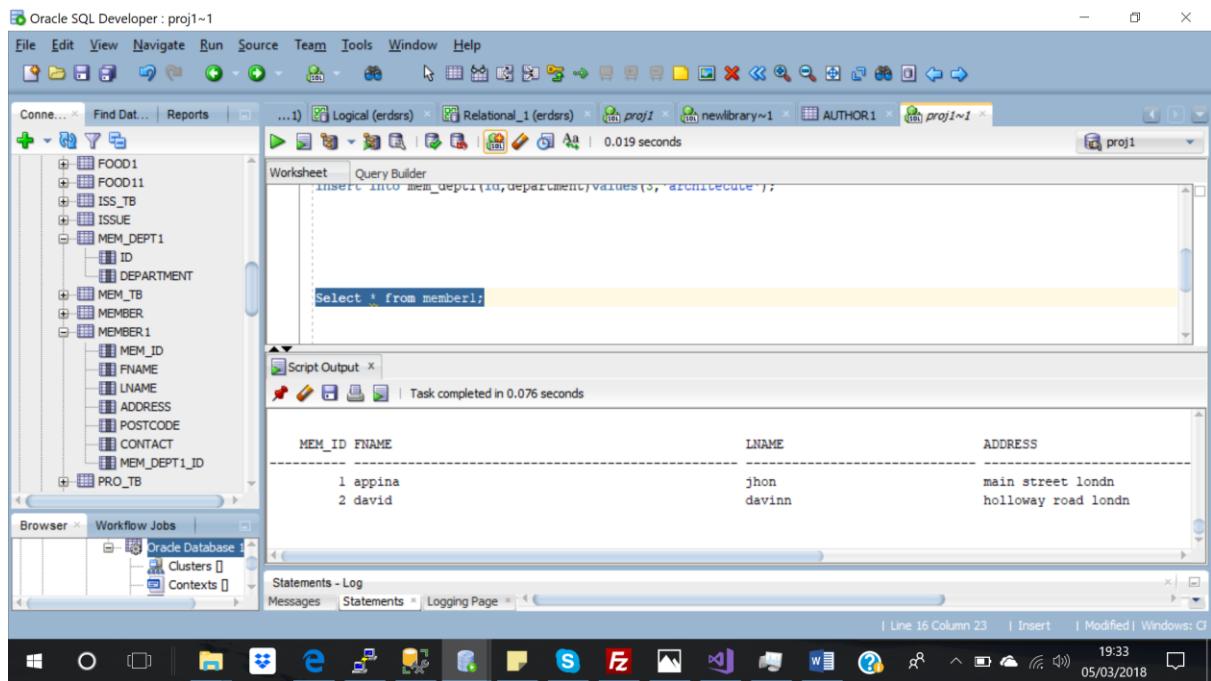
The script output window shows the results of the execution:

```
1 row inserted.

1 row inserted.
```

The status bar at the bottom right indicates the date and time: 05/03/2018 19:31.

## Retrieving data from member table



The screenshot shows the Oracle SQL Developer interface. The left pane displays a database browser with tables like FOOD1, FOOD11, ISS\_TB, ISSUE, MEM\_DEPT1, MEMBER, and MEMBER1. The MEMBER1 table is expanded, showing columns: MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. The central workspace contains a query builder window with the following SQL code:

```
insert into mem_dept1(id,department)values(3,'architecte');

Select * from member1;
```

The script output window shows the results of the execution:

| MEM_ID | FNAME  | LNAME  | ADDRESS             |
|--------|--------|--------|---------------------|
| 1      | appina | jhon   | main street londn   |
| 2      | david  | davinn | holloway road londn |

The status bar at the bottom right indicates the date and time: 05/03/2018 19:33.

Inserting and retrieving data from author table

```
insert into author1(author_id, fname, lname, address, mname)
values(1, 'louis', 'lwisham', '23 kevin road london', 'e4 4up');

select * from author1;
```

Inserted data into book\_type table

The screenshot shows the Oracle SQL Developer interface. The top window is titled "Worksheet" and contains the following SQL code:

```
insert into BOOK1(book_id, name, isbn, available, total, BOOK_TYPE1_BOOK_TYPE_ID)
values(1, 'software engineering', '123sds', 10, 20, 1);
select * from book type1;
insert into book_type1(book_type_id, book_type_name)
values(1, 'engineering');
```

The bottom window is titled "Script Output" and displays the results of the execution:

```
Task completed in 0.053 seconds
01756. 00000 -  "quoted string not properly terminated"
*Cause:
*Action:
1 row inserted.
```

Retrieving data from book\_type table

The screenshot shows the Oracle SQL Developer interface. In the top-left pane, there is a code editor window containing the following SQL script:

```
select * from book_type1;
insert into book_type1(book_type_id,book_type_name)
values(1,'engineering');
select * from book_type1;
```

In the bottom-right pane, there is a "Script Output" window with the message "Task completed in 0.069 seconds". Below it, the "Query Result" window displays the output of the query:

| BOOK_TYPE_ID | BOOK_TYPE_NAME |
|--------------|----------------|
| 1            | engineering    |

### Provide a printout of contents for all the tables

Admin table contents using select \* command

The screenshot shows the Oracle SQL Developer interface. In the top-left pane, there is a tree view of the database schema under the connection "newlibrary". The "Tables (Filtered)" section shows the following tables: ADM\_TB, ADMIN, and ADMIN1. The ADMIN1 table is expanded to show columns: ADMIN\_ID, ADMIN\_NAME, ADMIN\_ADDRESS, and ADMIN\_CONTACT.

In the middle-left pane, there is a "Worksheet" window with the following SQL query:

```
select * from admin;
```

In the bottom-right pane, there is a "Query Result" window displaying the contents of the ADMIN table:

| ADMIN_ID | ADMIN_NAME | ADMIN_ADDRESS      | ADMIN_CONTACT |
|----------|------------|--------------------|---------------|
| 1        | 1 kevin    | london road london | 0783424532    |
| 2        | 2 david    | london road london | 0783424532    |
| 3        | 33 testing | testing            | 073546123     |
| 4        | 44 alan    | comes              | 0208976542    |
| 5        | 11 george  | london             | 07564927443   |

### Content from author table

The screenshot shows the Oracle SQL Developer interface. The 'Connections' tree on the left shows a connection to 'newlibrary'. The 'Tables (Filtered)' section under 'newlibrary' lists 'ADM\_TB', 'ADMIN', 'ADMIN1', 'AUTHOR1', 'BOOK\_AUTHOR1', and 'AUTHOR1\_AUTHOR\_ID1'. The 'Worksheet' tab in the center contains the SQL query: 'select \* from author1;'. The 'Query Result' tab shows the output:

| AUTHOR_ID | FNAME | LNAME   | ADDRESS                     | MNAME |
|-----------|-------|---------|-----------------------------|-------|
| 1         | Ious  | Iwisham | 23 kevin road london e4 4up |       |

The status bar at the bottom right indicates the date as 21/03/2018 and the time as 21:41.

### Contents from book types table

The screenshot shows the Oracle SQL Developer interface. The 'Connections' tree on the left shows a connection to 'newlibrary'. The 'Tables (Filtered)' section under 'newlibrary' lists 'BOOK\_RESERVE1', 'BOOK\_RETURN1', 'BOOK\_TB', and 'BOOK1'. The 'Worksheet' tab in the center contains the SQL query: 'select \* from book\_type1;'. The 'Query Result' tab shows the output:

| BOOK_TYPE_ID | BOOK_TYPE_NAME |
|--------------|----------------|
| 1            | 1 ENGINEERING  |
| 2            | 2 Database     |
| 3            | 3 science      |
| 4            | 4 mathematics  |

The status bar at the bottom right indicates the date as 21/03/2018 and the time as 21:43.

### Contents from book table

Oracle SQL Developer : newlibrary~1

File Edit View Navigate Run Source Team Tools Window Help

Start Page newlibrary~1 BOOK1

Worksheet Query Builder

```
select * from book1;
```

Script Output x Query Result x

All Rows Fetched: 10 in 0.017 seconds

| BOOK_ID | NAME                     | ISBN         | AVAILABLE | TOTAL | BOOK_TYPE1_BOOK_TYPE_ID |
|---------|--------------------------|--------------|-----------|-------|-------------------------|
| 1       | 2 database               | db abc-123   | 12        | 15    | 2                       |
| 2       | 9 how to database        | 11ks-234-908 | 3         | 4     | 2                       |
| 3       | 1 engineering            | kls234-uc    | 30        | 40    | 1                       |
| 4       | 3 science                | fhhf-6758    | 4         | 5     | 3                       |
| 5       | 4 Science                | lmm-344w     | 4         | 44    | 3                       |
| 6       | 5 algebra                | kk1987-99    | 4         | 22    | 4                       |
| 7       | 6 geometry               | slk-908      | 33        | 34    | 4                       |
| 8       | 7 electrical engineering | elssk-ete98  | 1         | 9     | 1                       |
| 9       | 8 and database           | andk-nq8     | 8         | 99    | 2                       |

Messages - Log

Messages Statements Logging Page

Line 2 Column 1 Insert Modified Windows: G 21/03/2018 21:44

## Contents from cd table

Oracle SQL Developer : newlibrary~1

File Edit View Navigate Run Source Team Tools Window Help

Start Page newlibrary~1 CD\_TYPE1

Worksheet Query Builder

```
select * from cdl;
```

Script Output x Query Result x

All Rows Fetched: 6 in 2.37 seconds

| CD_ID | CD_NAME       | SUBJECT          | QTY_AVAIL | TOTAL_QTY | CD_TYPE1_TYPE_ID |
|-------|---------------|------------------|-----------|-----------|------------------|
| 1     | 5 computing   | software design  | 34        | 55        | 2                |
| 2     | 6 mathematics | pure maths       | 4         | 4         | 1                |
| 3     | 1 algebra     | algebra          | 8         | 169       | 1                |
| 4     | 2 number      | mathematics      | 5         | 5         | 1                |
| 5     | 3 computing   | design principal | 3         | 12        | 2                |
| 6     | 4 computing   | programming      | 4         | 44        | 2                |

Messages - Log

Messages Statements Logging Page

Line 1 Column 19 Insert Modified Windows: G 21/03/2018 21:45

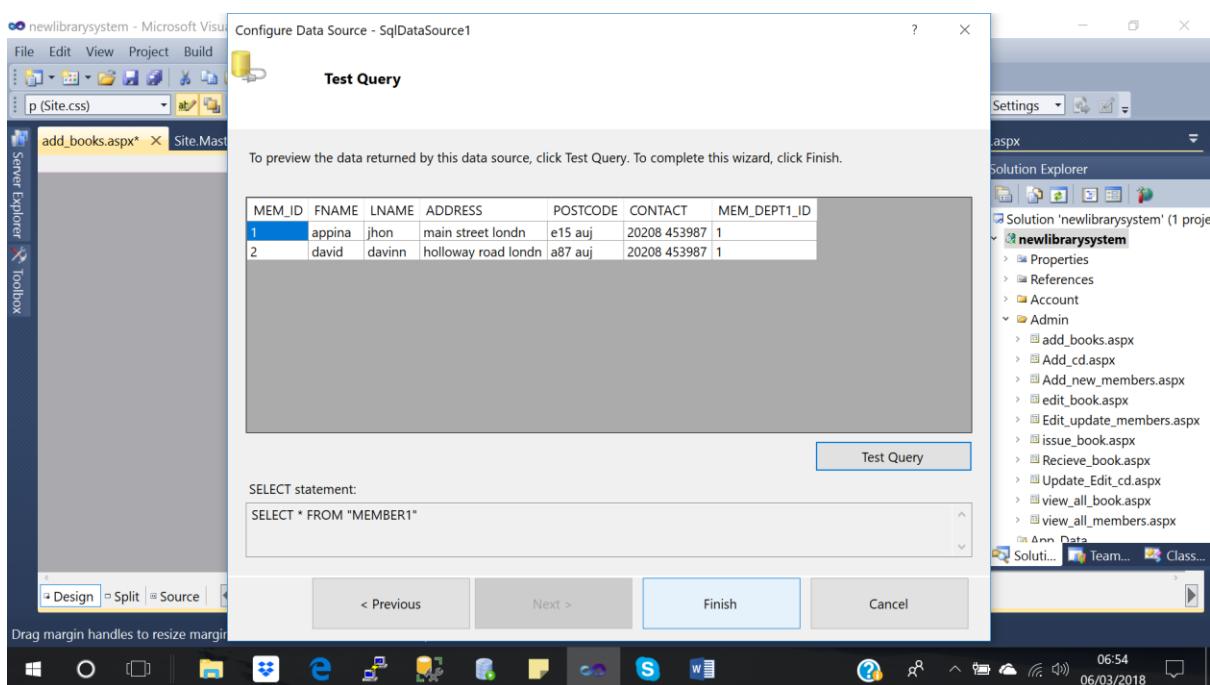
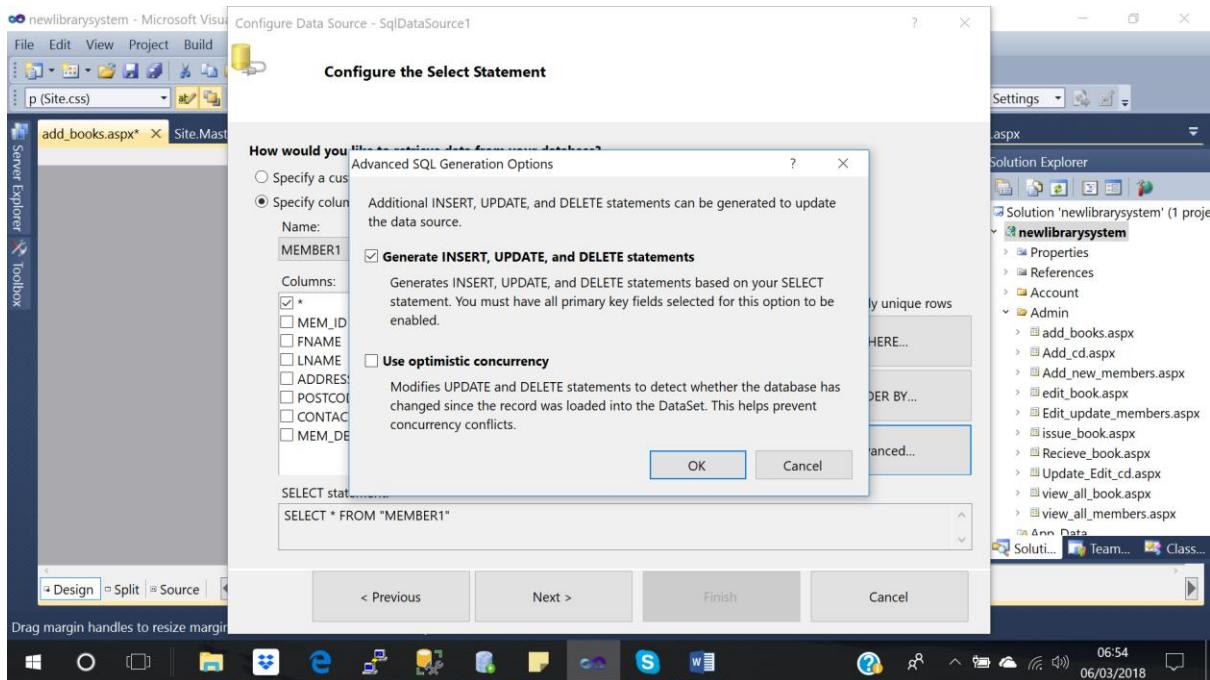
## Contents from member table

The screenshot shows the Oracle SQL Developer interface. On the left, the schema browser displays a tree structure of tables and views, including CD\_TYPE1\_TYPE\_ID, CUSTOMER, FOOD, FOOD1, FOOD11, ISS\_TB, ISSUE, MEM\_DEPT1, MEMBER, MEMBER1, and MEMBER1\_ID. The central area shows a worksheet with the query `select * from member1;`. Below the worksheet is a script output window showing the results of the query. The results are presented in a table with columns: MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. The data consists of 12 rows. The bottom right corner of the screen shows the Windows taskbar with the date and time.

| MEM_ID | FNAME     | LNAME  | ADDRESS                | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|-----------|--------|------------------------|----------|---------------|--------------|
| 1      | 3 Kevin   | rooals | london road west londn | e34 3ls  | 02028 487 234 | 2            |
| 2      | 4 david   | davin  | high street wales      | ac13 ulk | 0089 3424 343 | 3            |
| 3      | 6 KEVIA   | ROGET  | LONDON                 | E6 8UD   | 089834533     | 3            |
| 4      | 7 ROTIS   | RAVIS  | LONDON                 | LK43 4UK | 02028 4548    | 1            |
| 5      | 1 salpina | jhn    | main street londn      | e15 auj  | 20208 453987  | 2            |
| 6      | 2 david   | davinn | holloway road londn    | a87 auj  | 20208 453987  | 1            |
| 7      | 9 FOYS    | KEYS   | LONDON                 | AR98 TSS | 0208 4597     | 1            |
| 8      | 10 falm   | kai    | londn not londn        | at23 u23 | 089345098     | 2            |
| 9      | 11 wirase | urtaga | london wales           | ew9g_wk2 | 0089 3424 343 | 3            |

## Selecting Member table to add new members

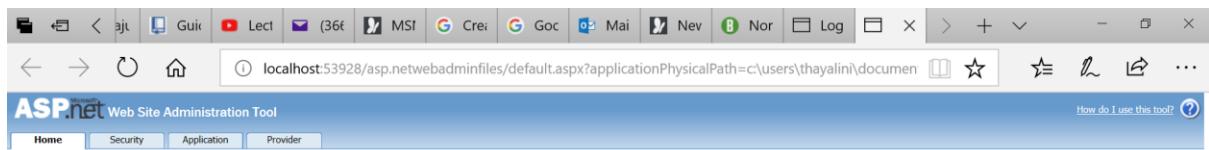
The screenshot shows Microsoft Visual Studio with a project named 'newlibrarysystem'. In the center, a dialog box titled 'Configure Data Source - SqlDataSource1' is open, specifically the 'Configure the Select Statement' step. The dialog asks how to retrieve data from the database, with the option 'Specify columns from a table or view' selected. A dropdown menu shows 'MEMBER1' as the name. Below it, a list of columns is shown with checkboxes: 'MEM\_ID' (checked), 'FNAME', 'LNAME', 'ADDRESS', 'POSTCODE', 'CONTACT', and 'MEM\_DEPT1\_ID'. To the right of the list are buttons for 'WHERE...', 'ORDER BY...', and 'Advanced...'. At the bottom of the dialog, there is a 'SELECT statement:' section containing the query `SELECT * FROM "MEMBER1"`. Navigation buttons at the bottom include '< Previous', 'Next >', 'Finish', and 'Cancel'. The bottom right corner of the screen shows the Windows taskbar with the date and time.



## 2.7 Documentation of the developed system

### Implementation document

#### Login Setup for Admin and registered members using ASP.NET CONFIGURATION



#### Welcome to the Web Site Administration Tool

Application:/

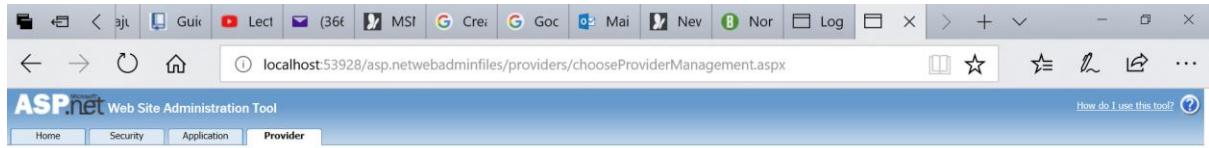
Current User Name:LAPTOP-LEB10GB1\THAYALINI

Security Enables you to set up and edit users, roles, and access permissions for your site.

Application Configuration Enables you to manage your application's configuration settings.

Provider Configuration Enables you to specify where and how to store administration data used by your Web site.

#### ASPNET DEFAULT MEMBERSHIP PROVIDER



Use this page to configure how Web site management data such as membership is stored. You can use a single provider for all the management data for your site or you can specify a different provider for each feature.

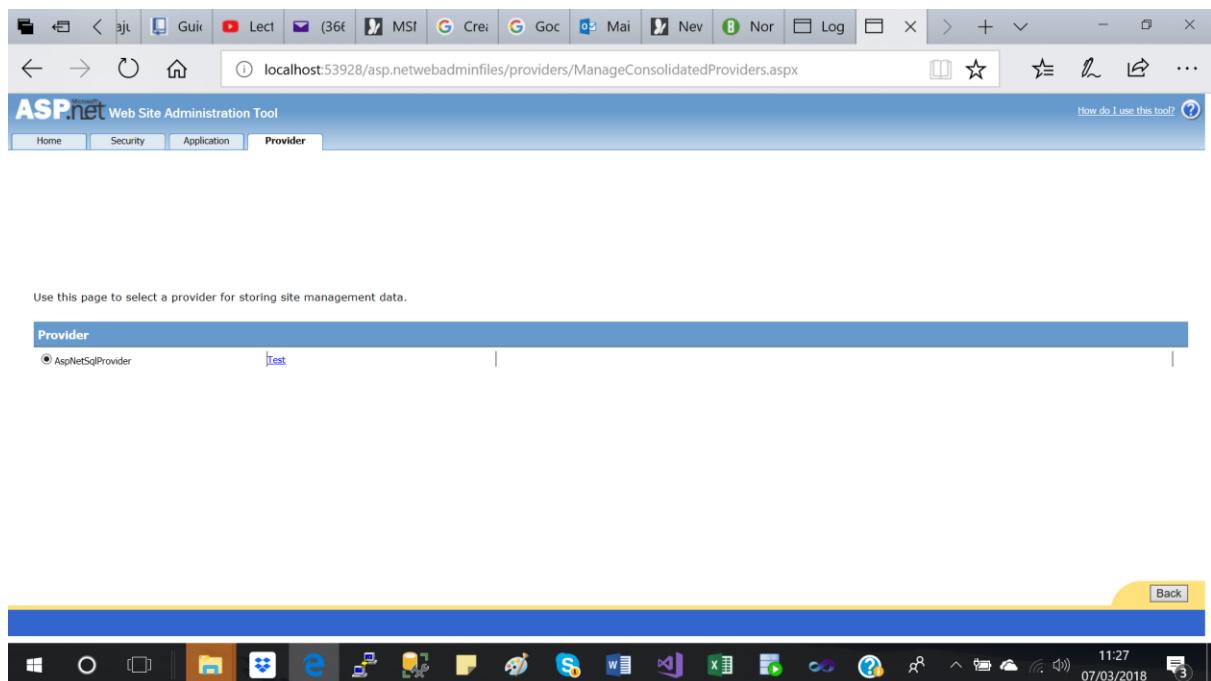
Your application is currently configured to use the provider: **AspNetSqlProvider**

Select a single provider for all site management data

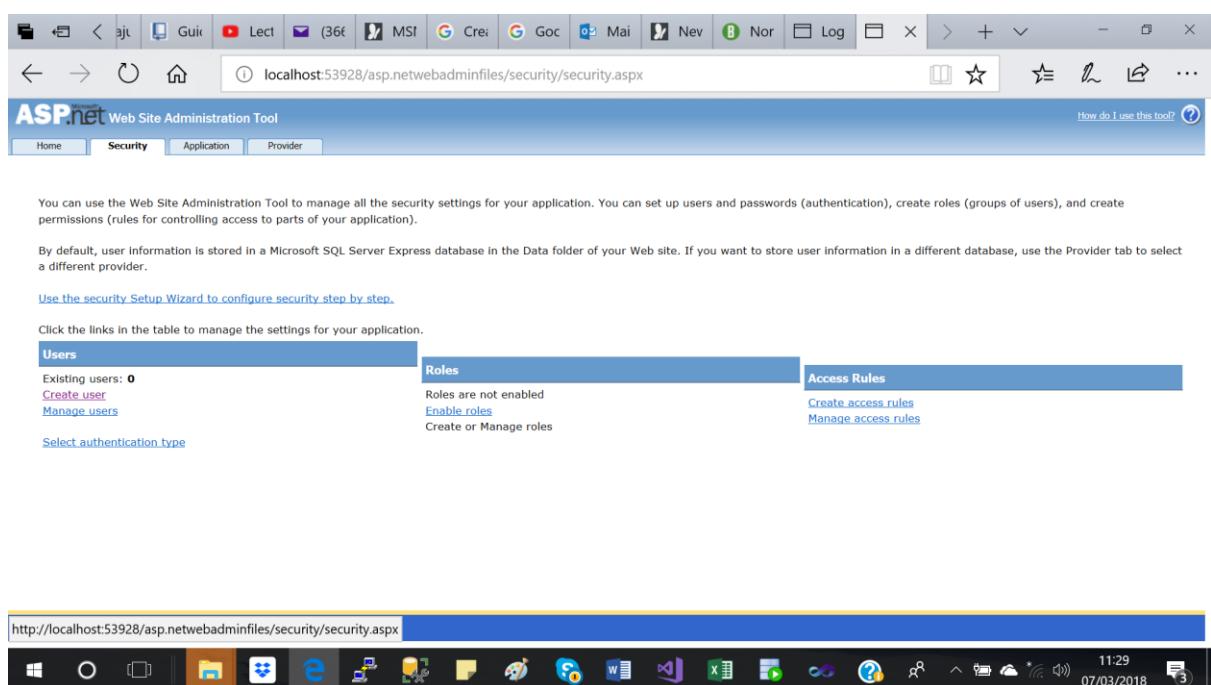
Select a different provider for each feature (advanced)



## Verifying asqlprovider



## Interface to create roles and users



## Creating administrator for system

The screenshot shows the 'Create User' page of the ASP.NET Web Site Administration Tool. The URL in the browser is `localhost:53928/asp.netwebadminfiles/security/users/addUser.aspx`. The page has a header 'ASP.NET Web Site Administration Tool' with tabs for Home, Security, Application, and Provider. A message at the top says 'Add a user by entering the user's ID, password, and e-mail address on this page.' The 'Create User' form contains fields for 'User Name' (kevin@hotmail.com), 'Password' (\*\*\*\*\*), 'Confirm Password' (\*\*\*\*\*), and 'E-mail' (kevin@hotmail.com). A 'Roles' section indicates 'Roles are not enabled.' A 'Create User' button is at the bottom. A checked checkbox 'Active User' is also present.

## Creating member for online access

The screenshot shows the 'Create User' page of the ASP.NET Web Site Administration Tool. The URL in the browser is `localhost:53928/asp.netwebadminfiles/security/users/addUser.aspx`. The page has a header 'ASP.NET Web Site Administration Tool' with tabs for Home, Security, Application, and Provider. A message at the top says 'Add a user by entering the user's ID, password, and e-mail address on this page.' The 'Create User' form contains fields for 'User Name' (krish1117@live.co.uk), 'Password' (\*\*\*\*\*), 'Confirm Password' (\*\*\*\*\*), and 'E-mail' (krish1117@live.co.uk). A 'Roles' section indicates 'Roles are not enabled.' A 'Create User' button is at the bottom. A checked checkbox 'Active User' is also present.

## Creating Roles for administrator and members to control access

The screenshot shows the 'Create New Role' page of the ASP.NET Web Site Administration Tool. The 'New role name:' field contains 'administrator'. Below the form, a table lists the role with its details.

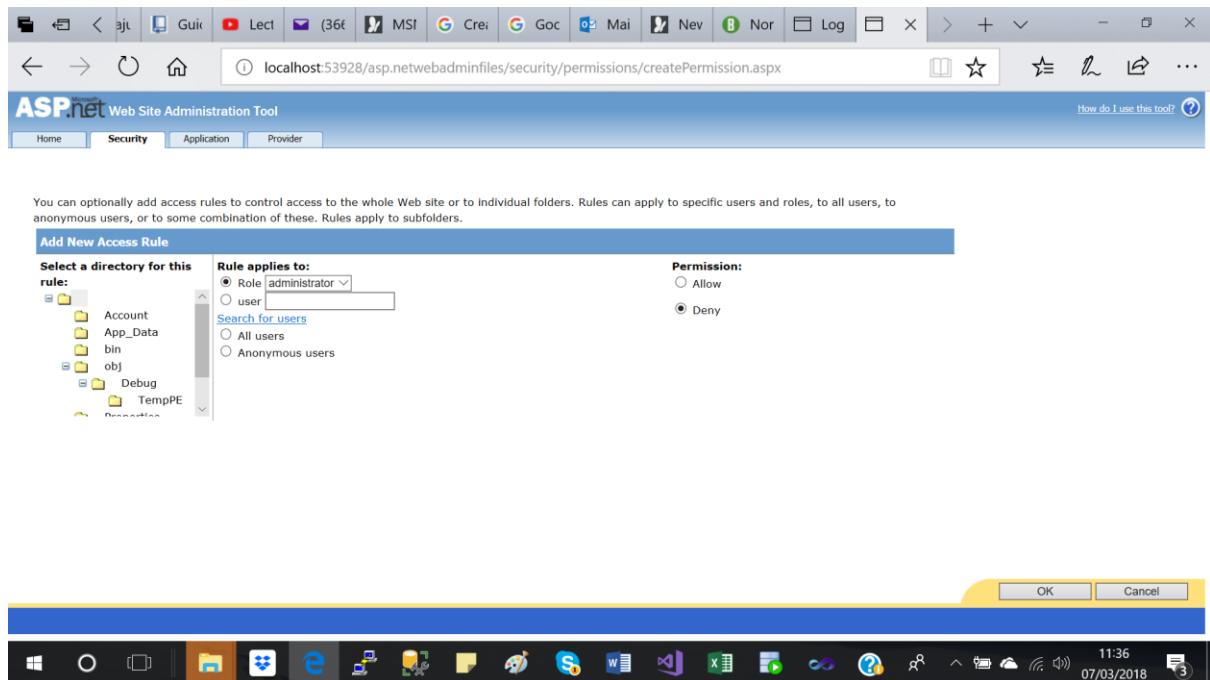
| Role Name     | Add/Remove Users       |                        |
|---------------|------------------------|------------------------|
| administrator | <a href="#">Manage</a> | <a href="#">Delete</a> |
| members       | <a href="#">Manage</a> | <a href="#">Delete</a> |

## Members and administrator roles created

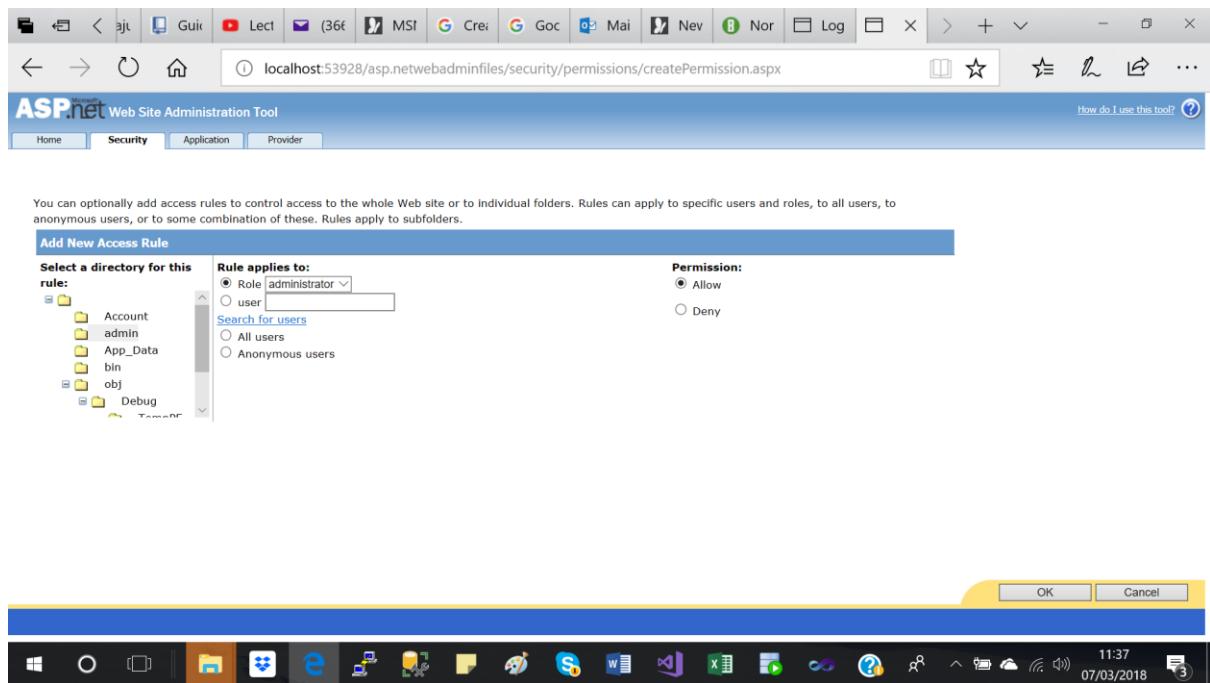
The screenshot shows the 'Create New Role' page of the ASP.NET Web Site Administration Tool. The 'New role name:' field is empty. Below the form, a table lists the roles that have been created.

| Role Name     | Add/Remove Users       |                        |
|---------------|------------------------|------------------------|
| administrator | <a href="#">Manage</a> | <a href="#">Delete</a> |
| members       | <a href="#">Manage</a> | <a href="#">Delete</a> |

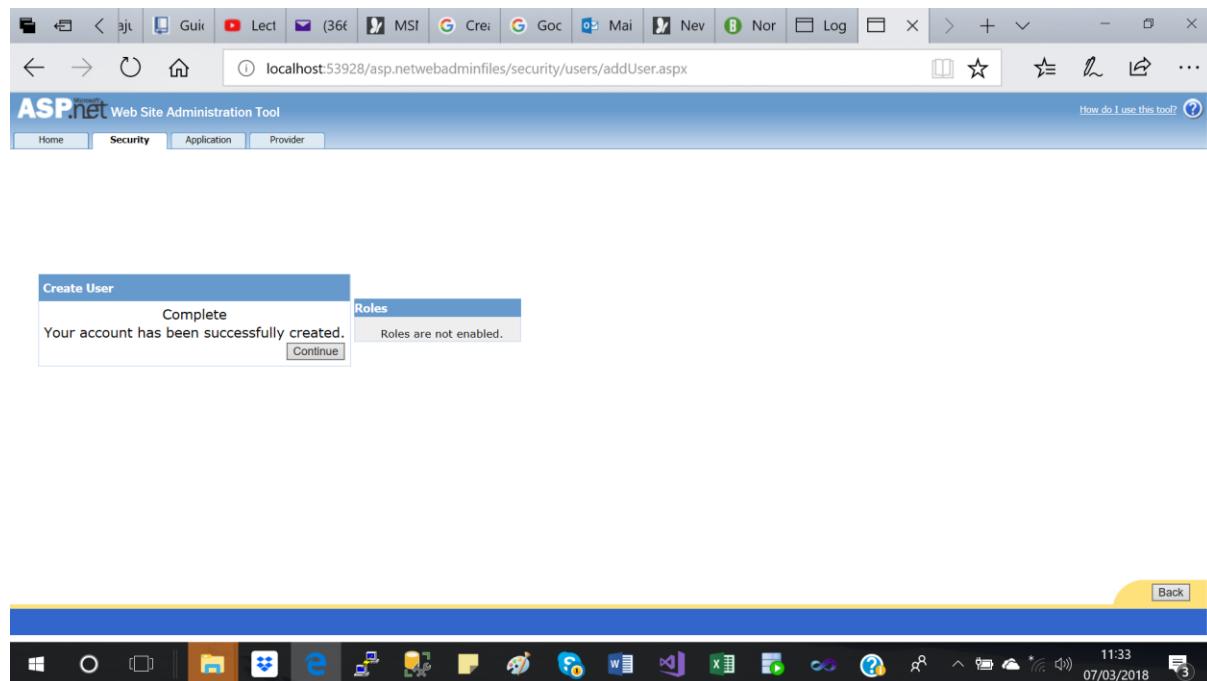
## Creating access rules



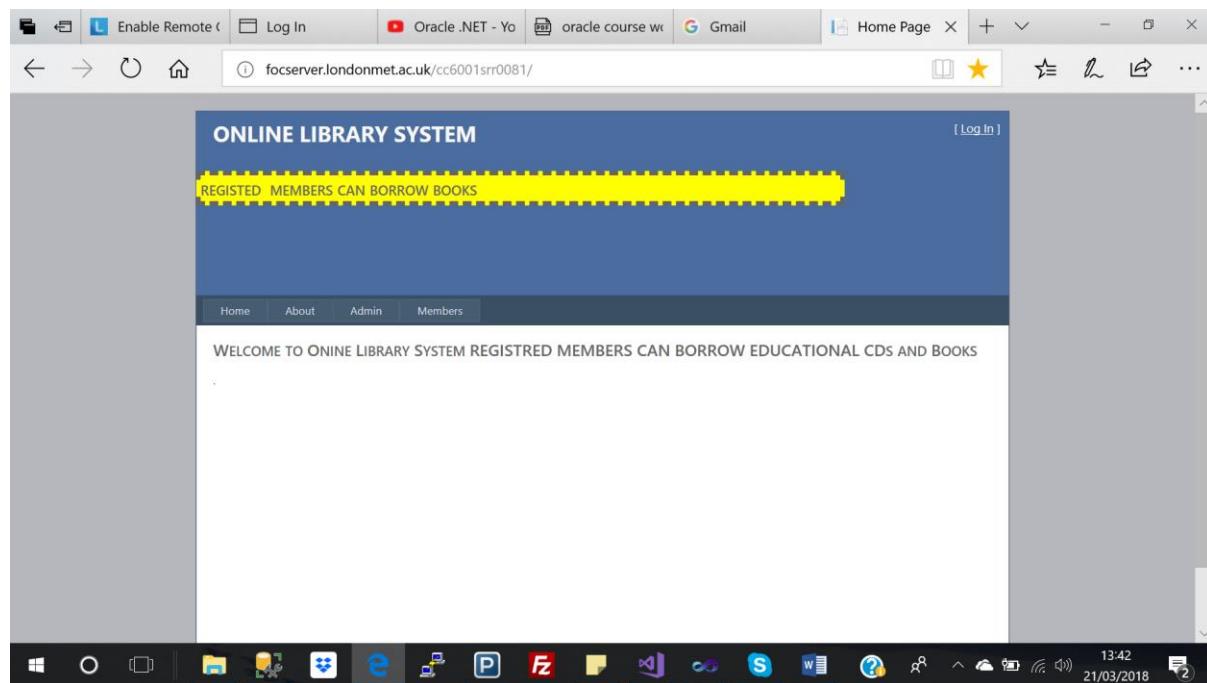
Access control for admin to access admin tasks -all admin tasks sits inside admin directory



Successfully created member for online access



Home page with login for admin and members

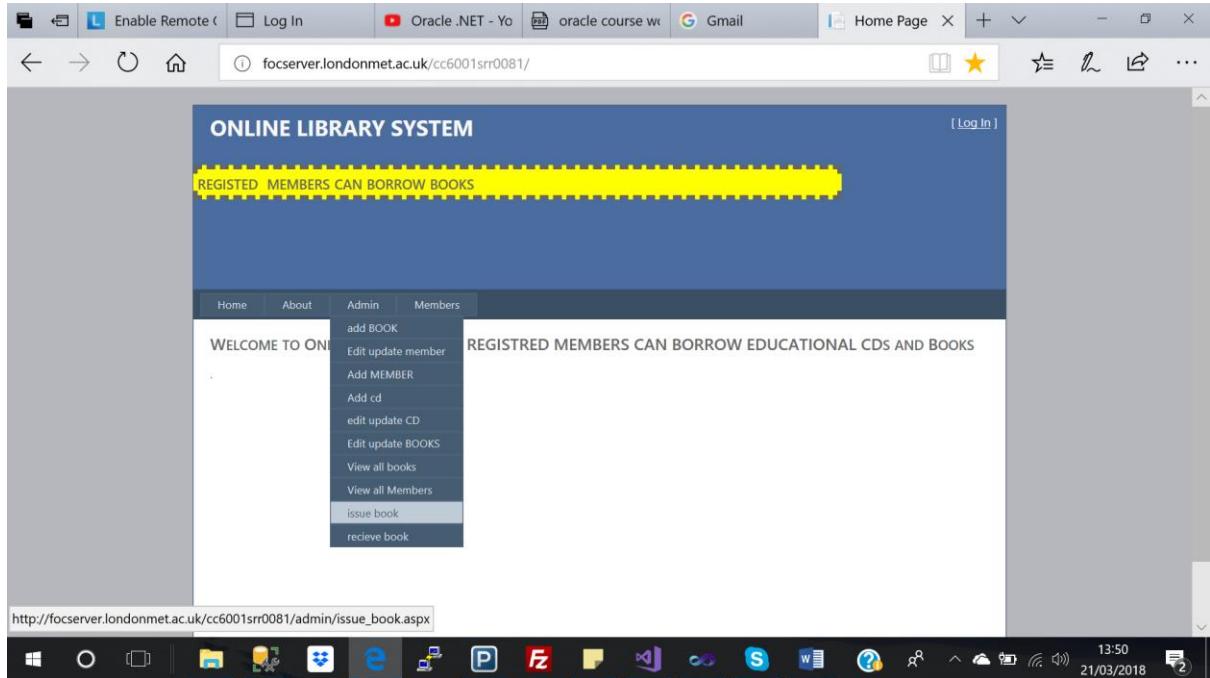


Login as admin using login credentials in below screenshots

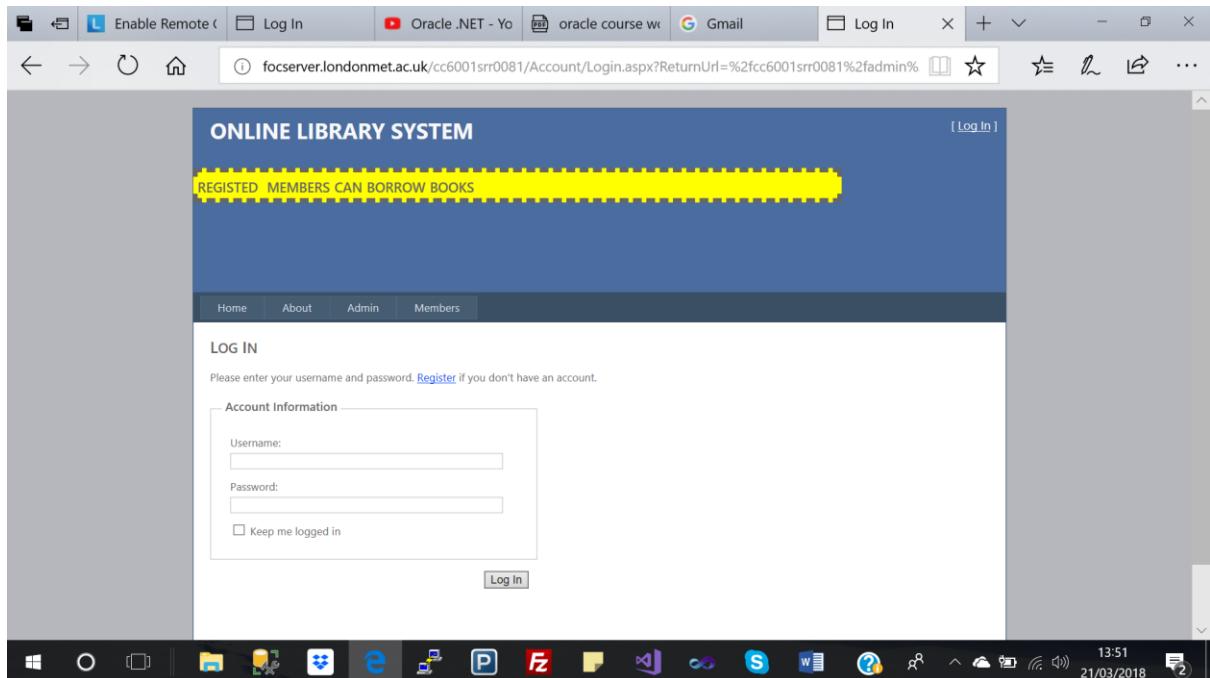
User name : [kevin@hotmail.com](mailto:kevin@hotmail.com)

Password 123Mango#

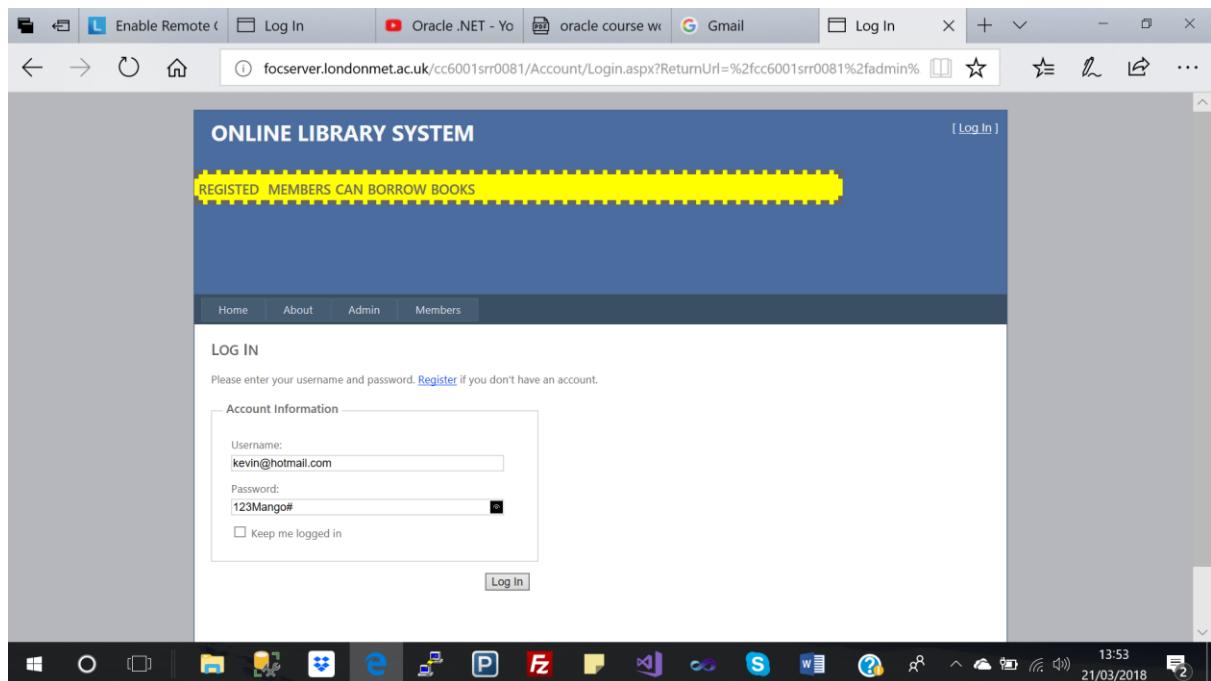
Below screenshot Before login as admin



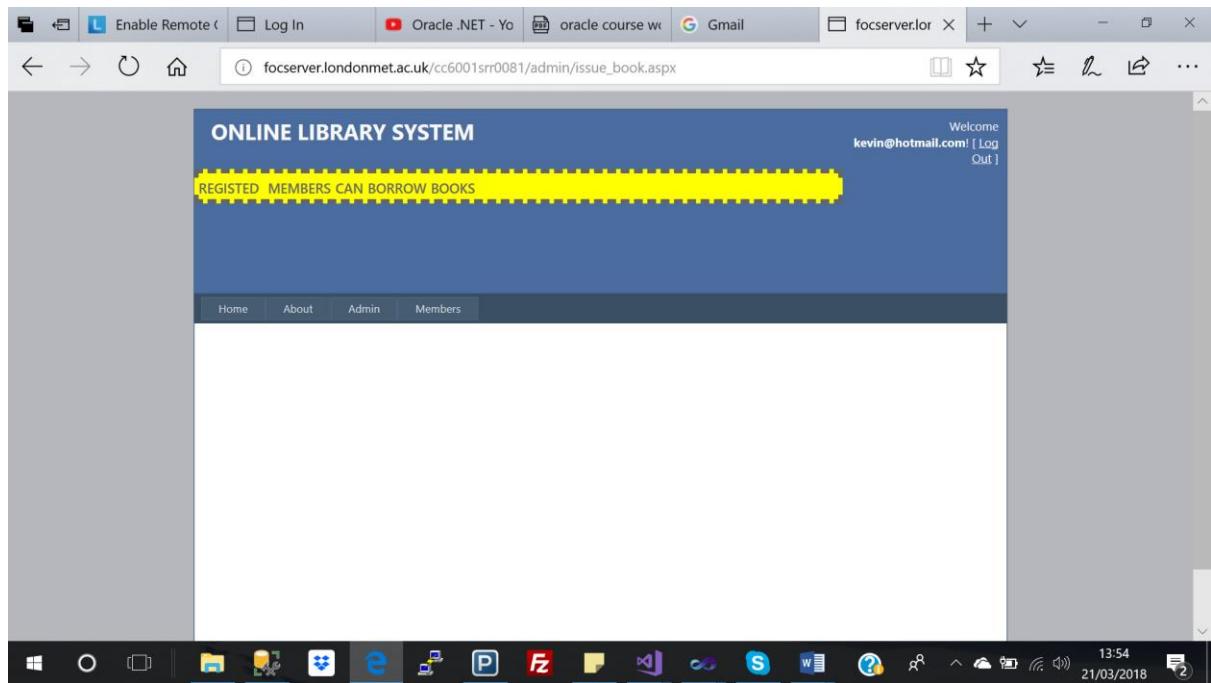
After click on admin task it takes to login page



Below screenshot login with admin credentials

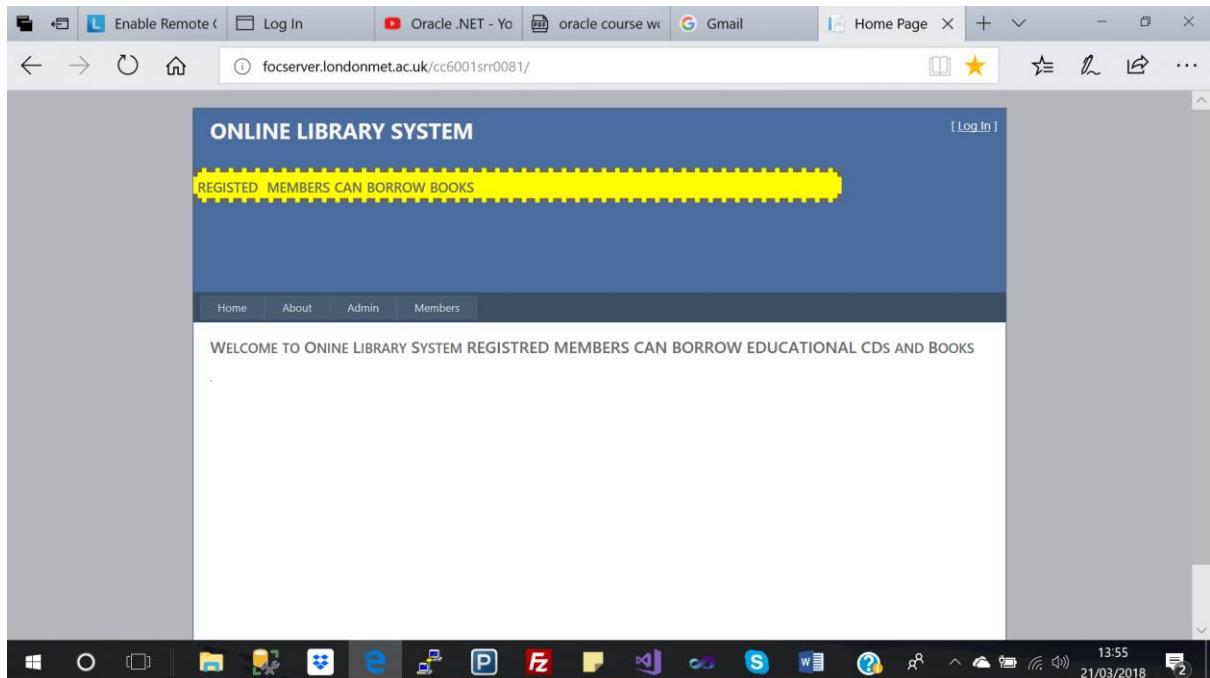


Below screenshot after login as admin



## Member login

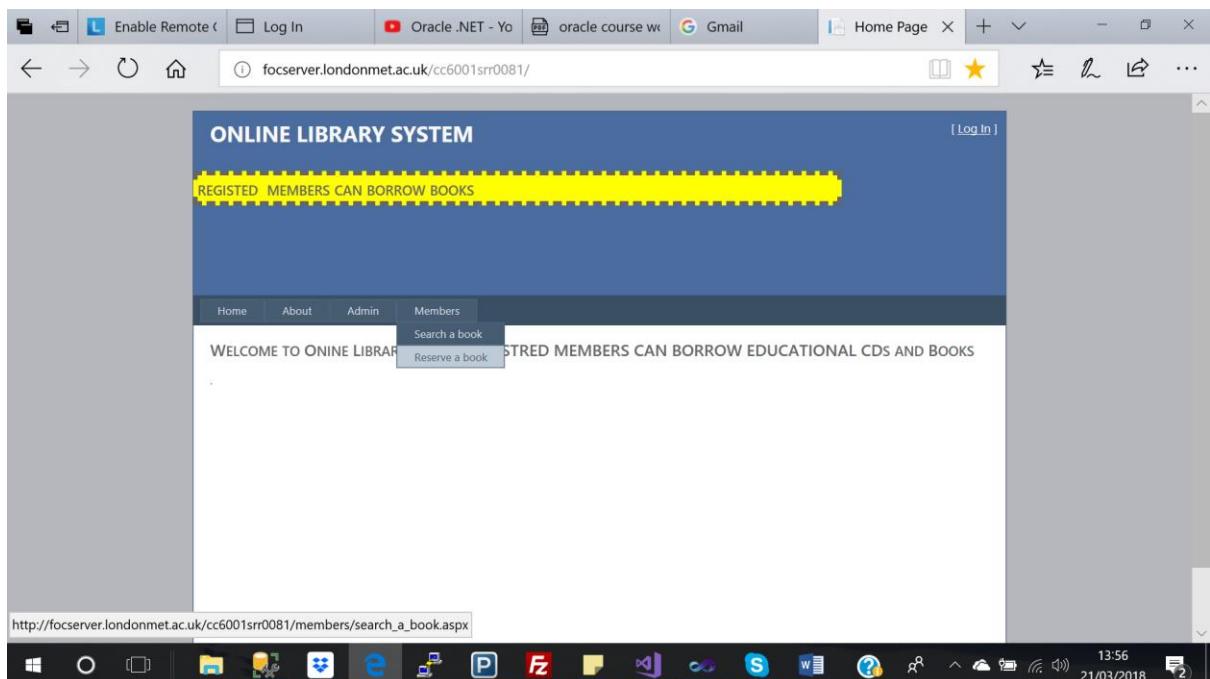
Before login the below screenshot

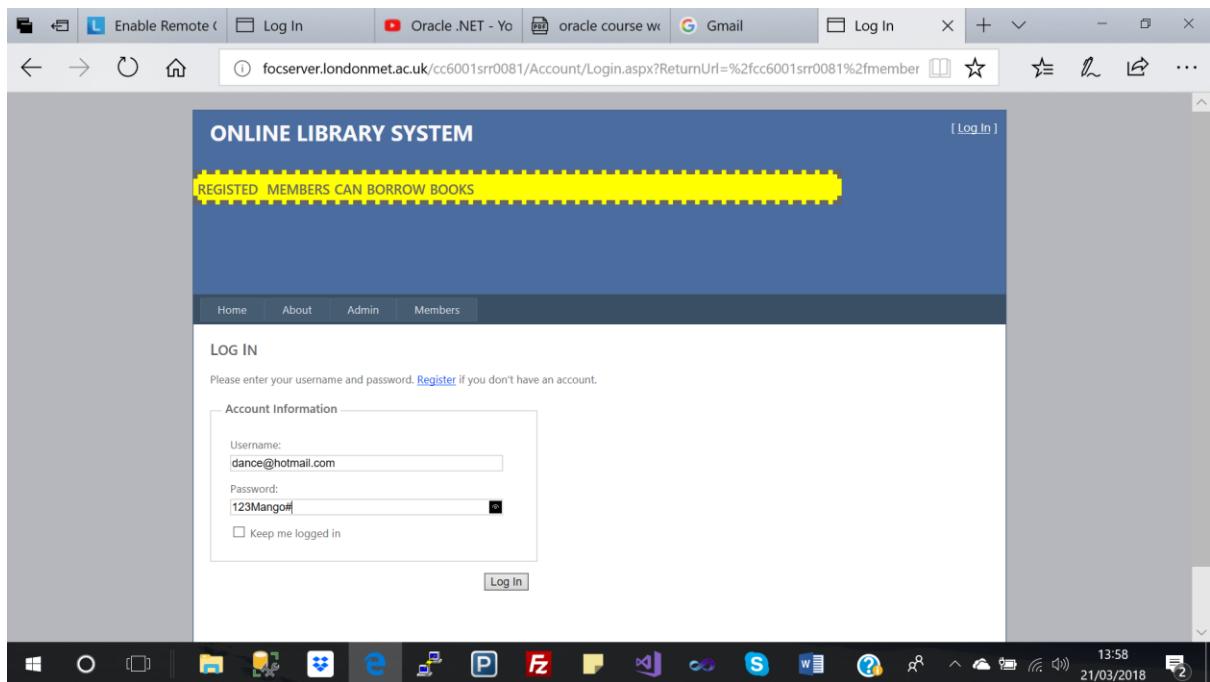


Login with member credentials

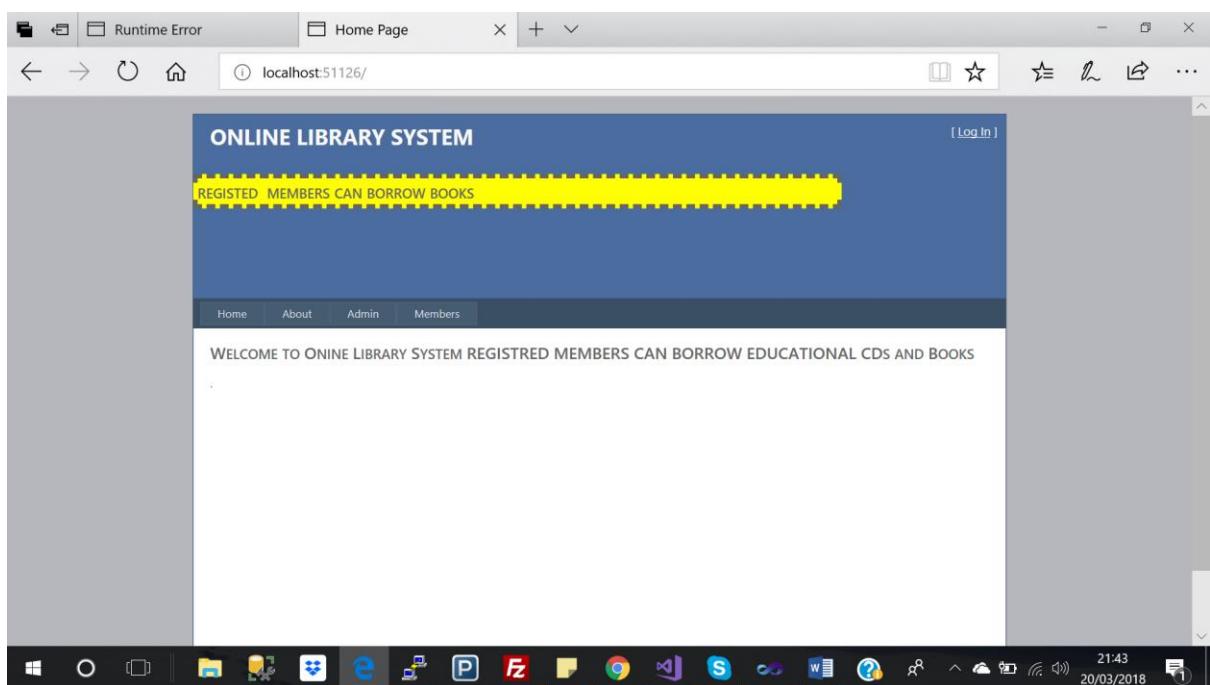
User name : dance@hotmail.com

Password 123Mango#





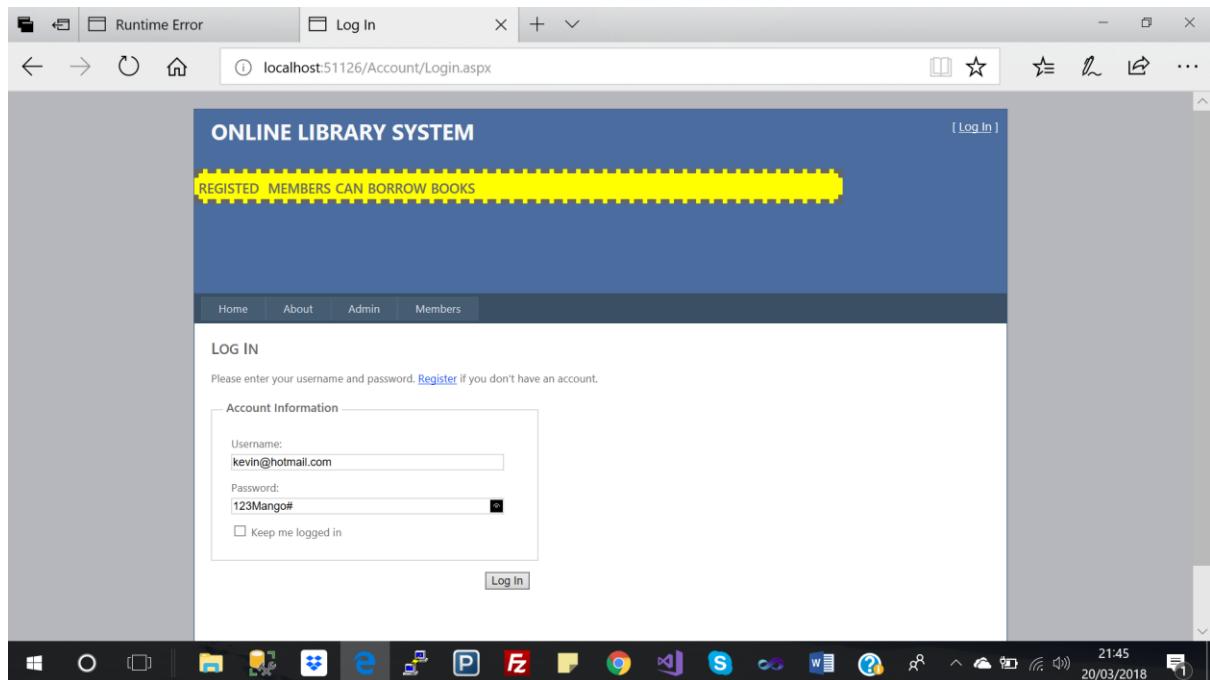
Below screenshot After login with member credentials



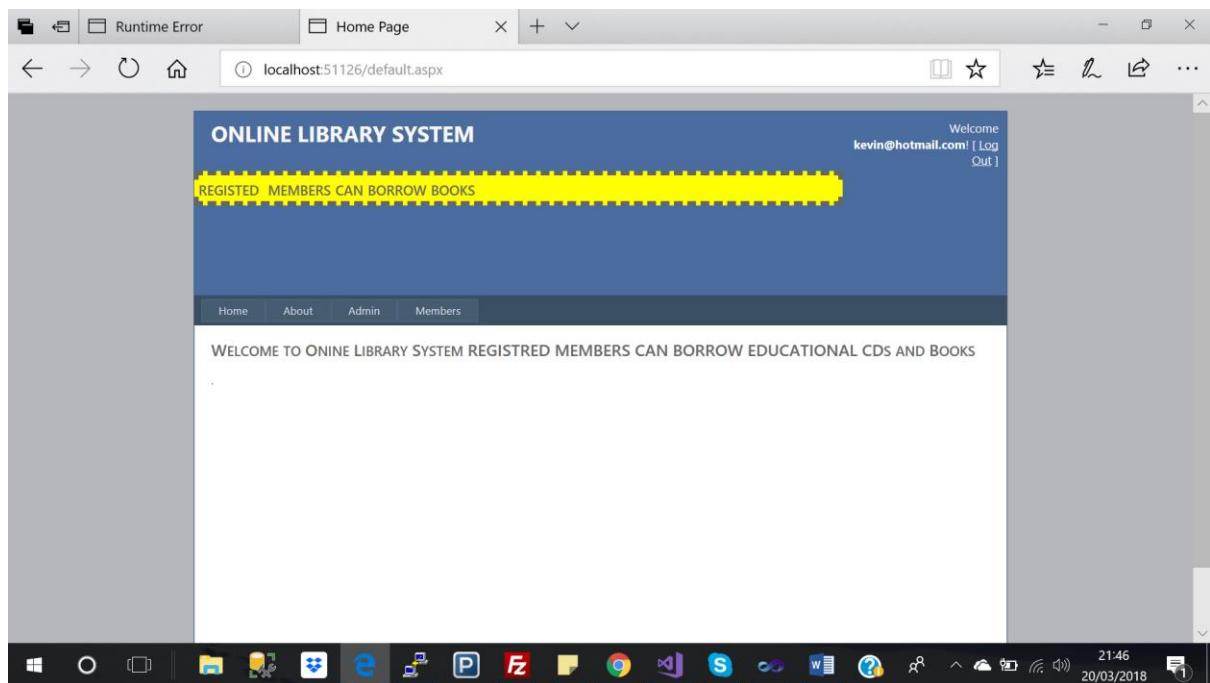
## Admin Login

Admin user [kevin@hotmail.com](mailto:kevin@hotmail.com)

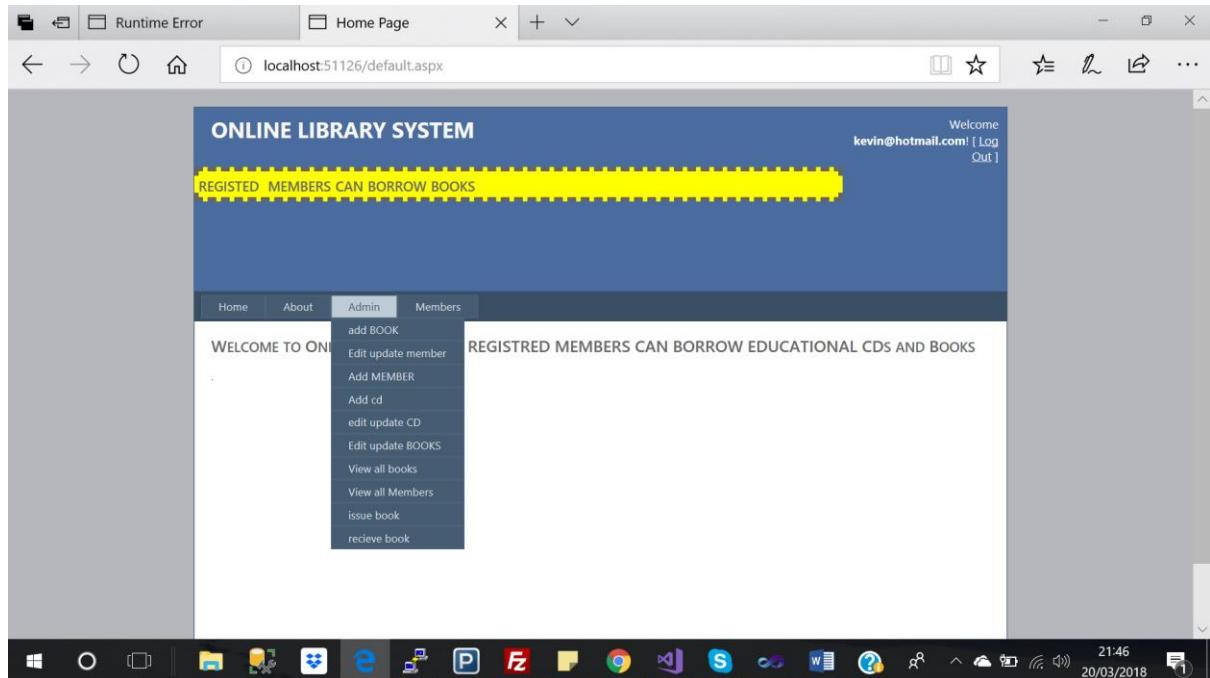
Password=123Mango#



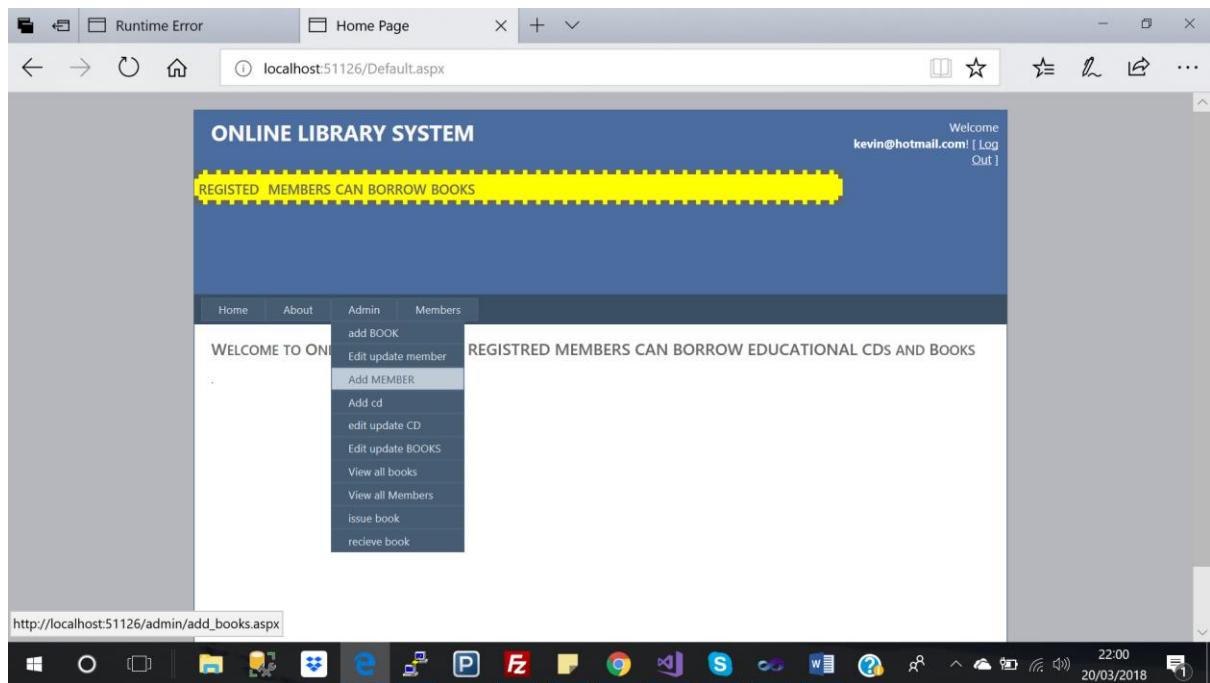
## After login



Authenticated Admin can perform following task displays in drop down menu



Admin can Add new members



Click add member , the add member pages appears as below

The screenshot shows a Windows desktop environment with a web browser window open at [localhost:5126/admin/add\\_books.aspx](http://localhost:5126/admin/add_books.aspx). The browser title bar says "Runtime Error". The page header includes links for Home, About, Admin, and Members.

The main content area displays a form titled "ADD NEW MEMBERS" with fields for MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. A "New" button is present at the bottom of the form. Below the form is a table listing existing members:

| MEM_ID | FNAME  | LNAME  | ADDRESS                | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|--------|--------|------------------------|----------|---------------|--------------|
| 3      | Kevin  | rooals | london road west londn | e34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin  | high street wales      | ac13 ulk | 0089 3424 343 | 3            |
| 6      | KEVIA  | ROGET  | LONDON                 | E6 8UD   | 089834533     | 3            |
| 7      | ROTS   | RAVIS  | LONDON                 | LK43 4UK | 02028 4548    | 1            |
| 1      | appina | jhon   | main street londa      | e15 auj  | 20208 453987  | 2            |
| 2      | david  | davinn | holloway road londn    | a87 auj  | 20208 453987  | 1            |
| 9      | FOYS   | KEYS   | LONDON                 | AR98 TSS | 0208 4597     | 1            |
| 10     | faim   | kai    | londn not londn        | at23 u23 | 089345098     | 2            |
| 5      | peter  | peter  | london road london     | e23.5td  | 0108 345 987  | 1            |
| 8      | ddd    | ddd    | dd                     | ddd      | 333           | 2            |

The status bar at the bottom of the browser shows the date and time as 20/03/2018 22:01.

After click new to add new members the below window changes as below

This screenshot shows the same web browser window after clicking the "New" button in the previous screenshot. The "ADD NEW MEMBERS" form is now empty, with all fields cleared. The member list table remains the same as in the previous screenshot.

The status bar at the bottom of the browser shows the date and time as 20/03/2018 22:08.

Currently there are 11 members we are going to add a member , after new member added the mem-id increased to 12 as below and new members will be added.

New member id=12, fname=mike, lname=mike is going to be added as below

The screenshot shows a Windows desktop environment. A browser window is open at [localhost:51126/admin/add\\_books.aspx](http://localhost:51126/admin/add_books.aspx). The page title is "Runtime Error". The main content area displays an "ADD NEW MEMBERS" form with the following data:

|              |                 |
|--------------|-----------------|
| MEM_ID       | 12              |
| FNAME        | mike            |
| LNAME        | mike            |
| ADDRESS      | london or wales |
| POSTCODE     | e12 3sf         |
| CONTACT      | 0089 3424 343   |
| MEM_DEPT1_ID | 2               |

Below the form is a table showing existing member records:

| MEM_ID | FNAME  | LNAME  | ADDRESS                 | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|--------|--------|-------------------------|----------|---------------|--------------|
| 3      | Kevin  | rooals | london road west london | e34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin  | high street wales       | ac13 ulk | 0089 3424 343 | 3            |
| 6      | KEVIA  | ROGET  | LONDON                  | E6 8UD   | 089834533     | 3            |
| 7      | ROTS   | RAVIS  | LONDON                  | UK43 4UK | 02028 4548    | 1            |
| 1      | appina | jhon   | main street london      | e15 auj  | 20208 453987  | 2            |
| 2      | david  | davinn | holloway road london    | a87 auj  | 20208 453987  | 1            |
| 9      | FOYS   | KEYS   | LONDON                  | AR9 TSS  | 0208 4597     | 1            |
| 10     | falm   | kai    | london not londn        | al23 u23 | 089345098     | 2            |
| 11     | vitasa | uttasa | london wales            | sk09 uk3 | 0089 3424 343 | 3            |
| 5      | peter  | peter  | london road london      | e235td   | 0108 345 987  | 1            |
| 12     |        |        |                         |          |               |              |

At the bottom left of the page is a link: [Insert Cancel](#).

The browser's address bar shows [localhost:51126/admin/add\\_books.aspx](http://localhost:51126/admin/add_books.aspx). The taskbar at the bottom of the screen shows various application icons.

## Adding new members to

The screenshot shows a Windows desktop environment. A browser window is open at [localhost:62613/Admin/add\\_books.aspx](http://localhost:62613/Admin/add_books.aspx). The page title is "MY LIBRARY SYSTEM". The main content area displays an "ADD NEW MEMBERS" form with the following data:

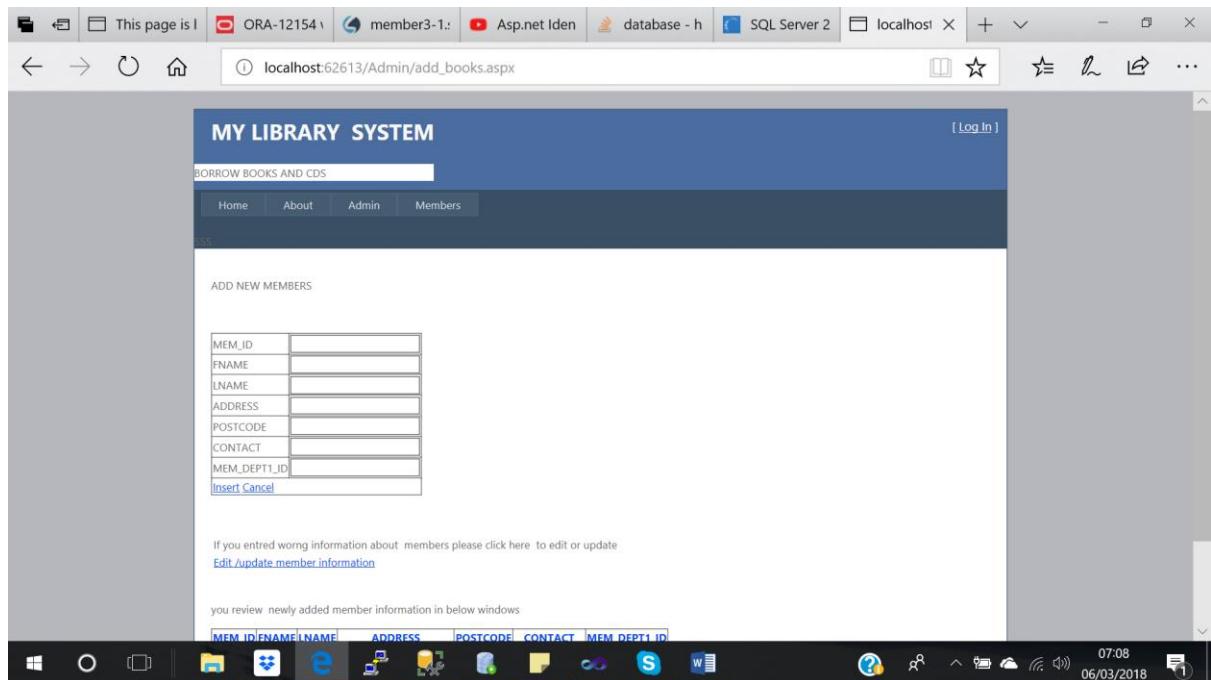
|              |                                  |
|--------------|----------------------------------|
| MEM_ID       | 3                                |
| FNAME        | roy                              |
| LNAME        | rooals                           |
| ADDRESS      | london<br>road<br>west<br>london |
| POSTCODE     | e34 3ls                          |
| CONTACT      | 02028<br>487<br>234              |
| MEM_DEPT1_ID | 2                                |

Below the form is a link: [New](#).

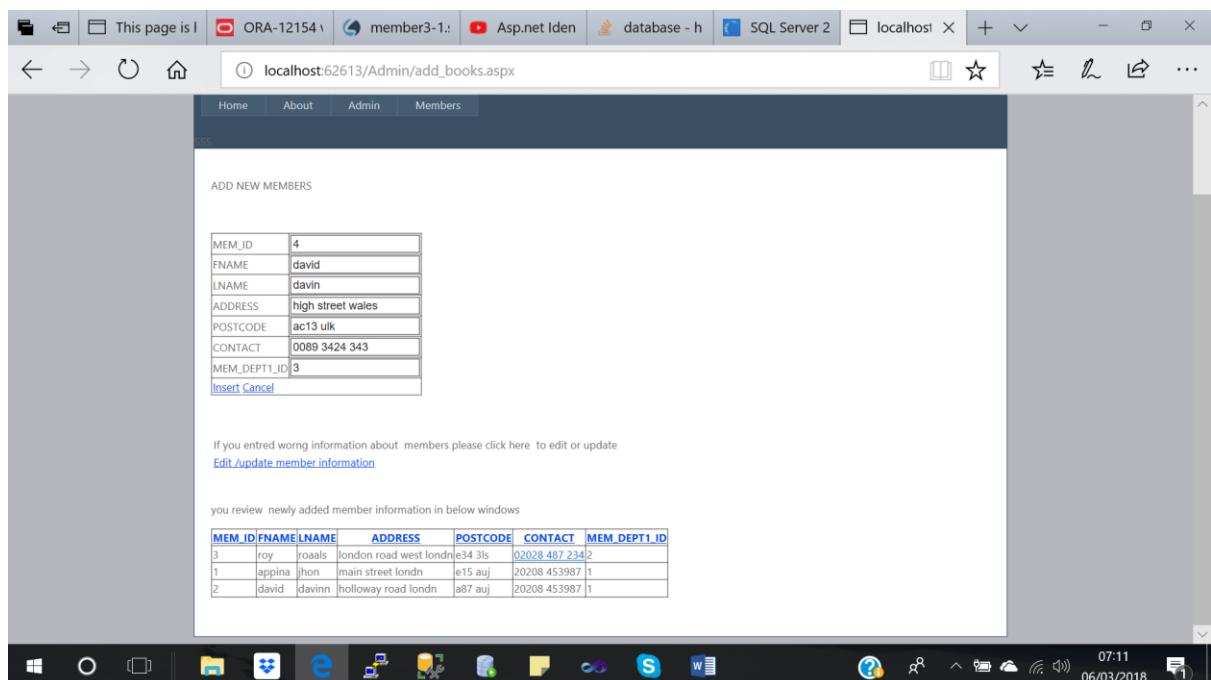
At the bottom of the page is a note: "If you entered wrong information about members please click here to edit or update" followed by a link: [Edit /update member information](#).

The browser's address bar shows [localhost:62613/Admin/add\\_books.aspx](http://localhost:62613/Admin/add_books.aspx). The taskbar at the bottom of the screen shows various application icons.

After click on new the screen change as below



Before click insert link , but typed necessary data as required



After we clicked insert data the entered data reflect on below window it abstract data from member table,

If they have entered wrong information they can edit by selecting edit/update button this will take them to edit update page

MEM\_ID: 3  
FNAME: roy  
LNAME: rooals  
ADDRESS: london road west londn  
POSTCODE: e34 3ls  
CONTACT: 02028 487 234  
MEM\_DEPT1\_ID: 2  
New

If you entered wrong information about members please click here to edit or update [Edit /update member information](#)

| MEM_ID | FNAME  | LNAME  | ADDRESS                | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|--------|--------|------------------------|----------|---------------|--------------|
| 3      | roy    | rooals | london road west londn | e34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin  | high street wales      | ac13 ulk | 0089 3424 343 | 3            |
| 1      | appina | jhon   | main street londn      | e15 auj  | 20208 453987  | 1            |
| 2      | david  | davinn | holloway road londn    | a87 auj  | 20208 453987  | 1            |

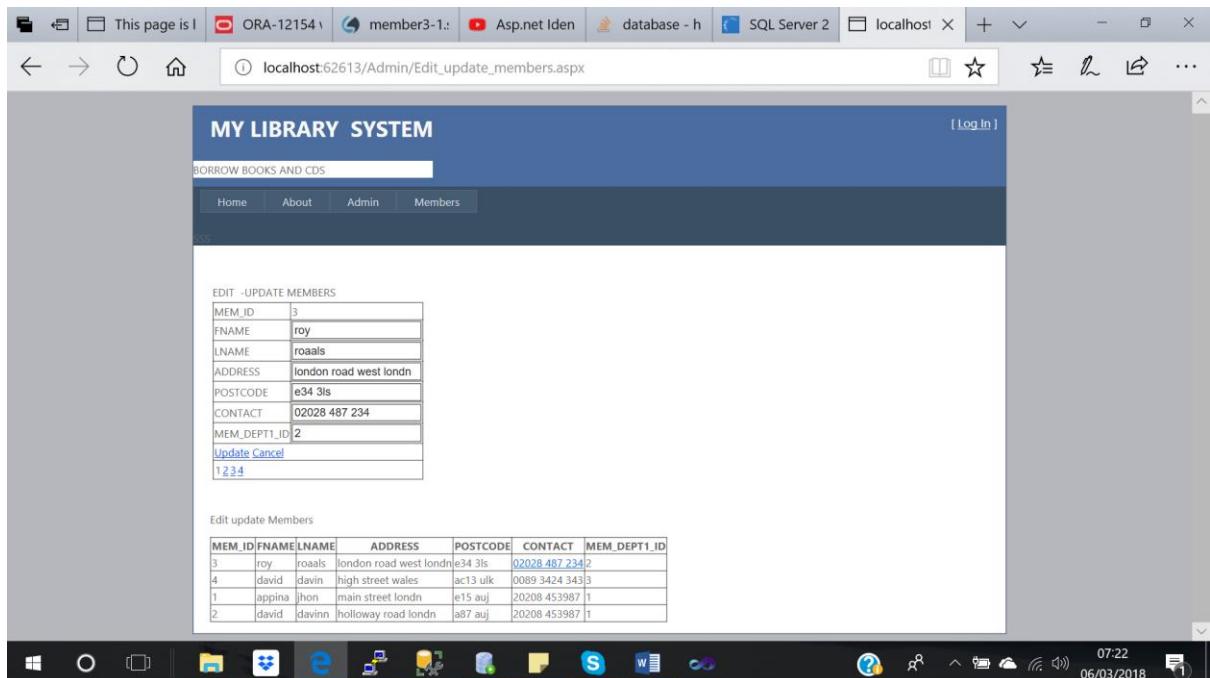
### Editing or updating member details

MEM\_ID: 3  
FNAME: roy  
LNAME: rooals  
ADDRESS: london road west londn  
POSTCODE: e34 3ls  
CONTACT: 02028 487 234  
MEM\_DEPT1\_ID: 2  
Edit  
1234

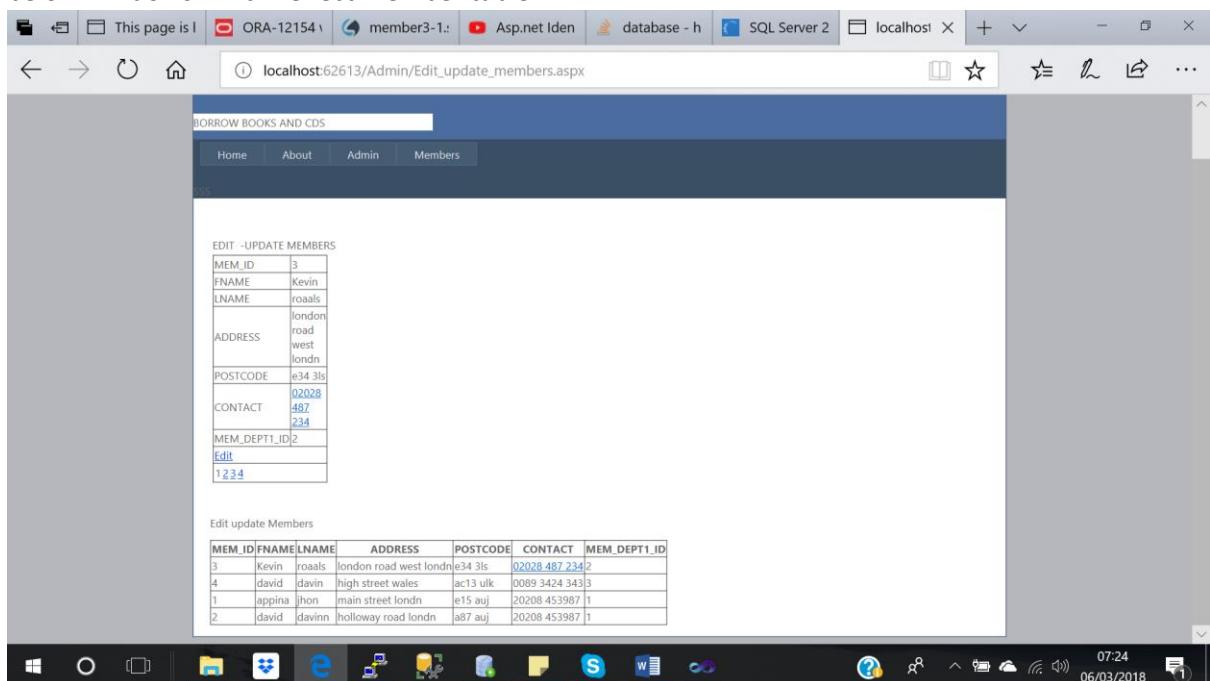
Edit update Members

| MEM_ID | FNAME  | LNAME  | ADDRESS                | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|--------|--------|------------------------|----------|---------------|--------------|
| 3      | roy    | rooals | london road west londn | e34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin  | high street wales      | ac13 ulk | 0089 3424 343 | 3            |
| 1      | appina | jhon   | main street londn      | e15 auj  | 20208 453987  | 1            |
| 2      | david  | davinn | holloway road londn    | a87 auj  | 20208 453987  | 1            |

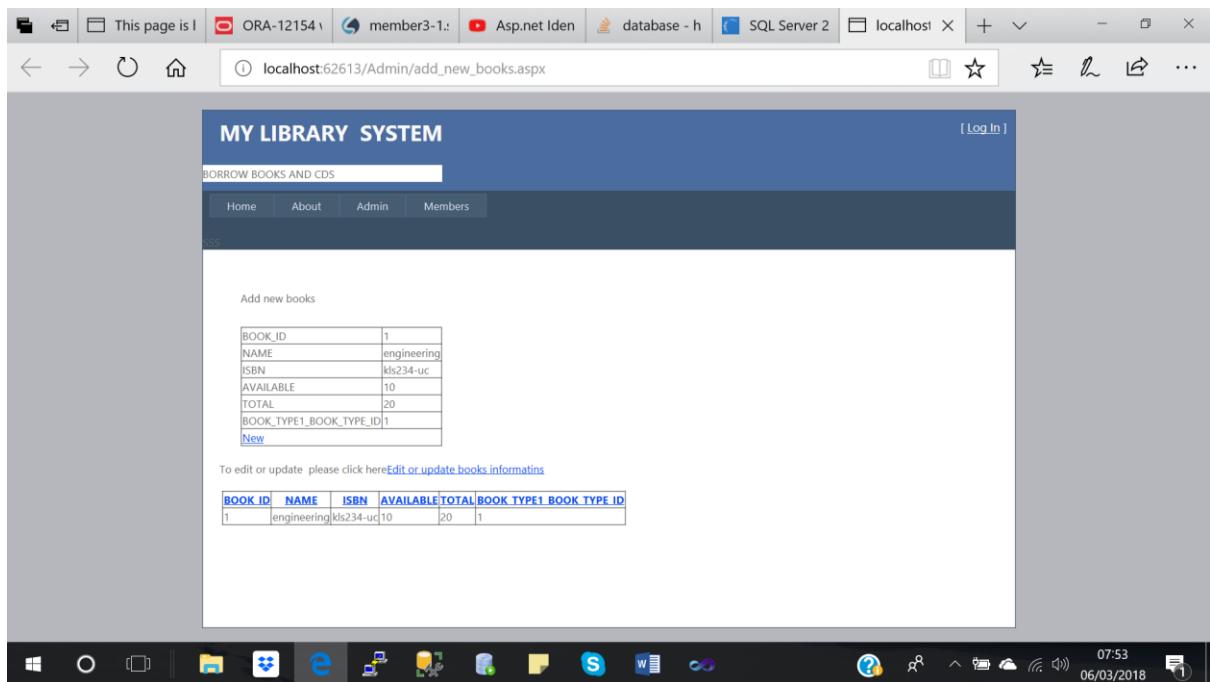
After we select EDIT the window change as below



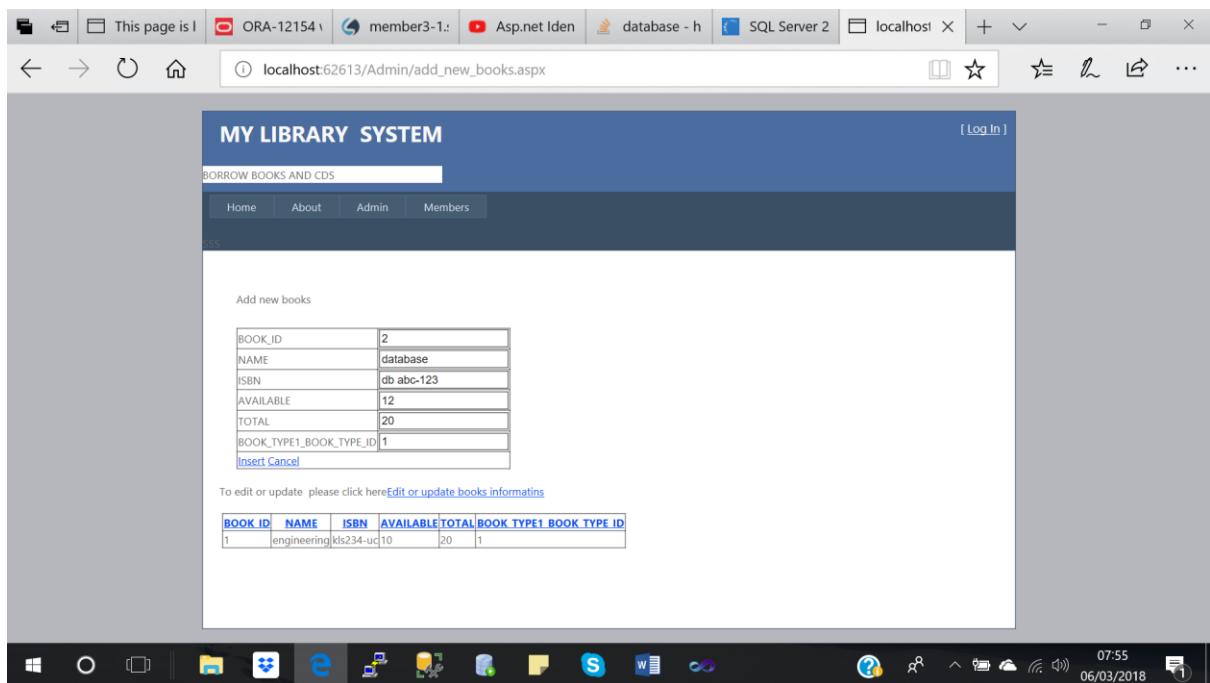
Now editing or updating **Fname** from **roy** to **kevin** it will update the information and display in below windows which reflect member table.



Adding books information



After selecting new link to enter new books the windows change as below



After selecting insert link the window change as below and reflect inserted data in below window

MY LIBRARY SYSTEM

BORROW BOOKS AND CDS

[ Log In ]

Add new books

|            |               |
|------------|---------------|
| BOOK_ID    | 2             |
| NAME       | database      |
| ISBN       | db abc-123    |
| AVAILABLE  | 12            |
| TOTAL      | 20            |
| BOOK_TYPE1 | BOOK_TYPE_ID1 |

New

To edit or update please click here [Edit or update books information](#)

| BOOK_ID | NAME        | ISBN       | AVAILABLE | TOTAL | BOOK_TYPE1 | BOOK_TYPE_ID |
|---------|-------------|------------|-----------|-------|------------|--------------|
| 2       | database    | db abc-123 | 12        | 20    | 1          |              |
| 1       | engineering | kls234-uc  | 10        | 20    | 1          |              |

### Edit or update books information

Before editing

MY LIBRARY SYSTEM

BORROW BOOKS AND CDS

[ Log In ]

Edit books informations

|           |            |
|-----------|------------|
| TOTAL     | 20         |
| AVAILABLE | 12         |
| ISBN      | db abc-123 |
| NAME      | database   |
| BOOK_ID   | 2          |

Edit

| TOTAL | AVAILABLE | ISBN       | NAME        | BOOK_ID |
|-------|-----------|------------|-------------|---------|
| 20    | 12        | db abc-123 | database    | 2       |
| 20    | 10        | kls234-uc  | engineering | 1       |

After we select EDIT link

MY LIBRARY SYSTEM

BORROW BOOKS AND CDS

[ Log In ]

Edit books informations

|   |            |
|---|------------|
| TOTAL   | 20         |
| AVAILABLE                                     | 12         |
| ISBN  | db abc-123 |
| NAME  | database   |
| BOOK_ID                                       | 2          |
| <a href="#">Update</a> <a href="#">Cancel</a> |            |

| TOTAL | AVAILABLE | ISBN       | NAME        | BOOK_ID |
|-------|-----------|------------|-------------|---------|
| 20    | 12        | db abc-123 | database    | 2       |
| 20    | 10        | kls234-uc  | engineering | 1       |

Changing total copies from 20 to 15 and select update the below screenshot reflect the changes

MY LIBRARY SYSTEM

BORROW BOOKS AND CDS

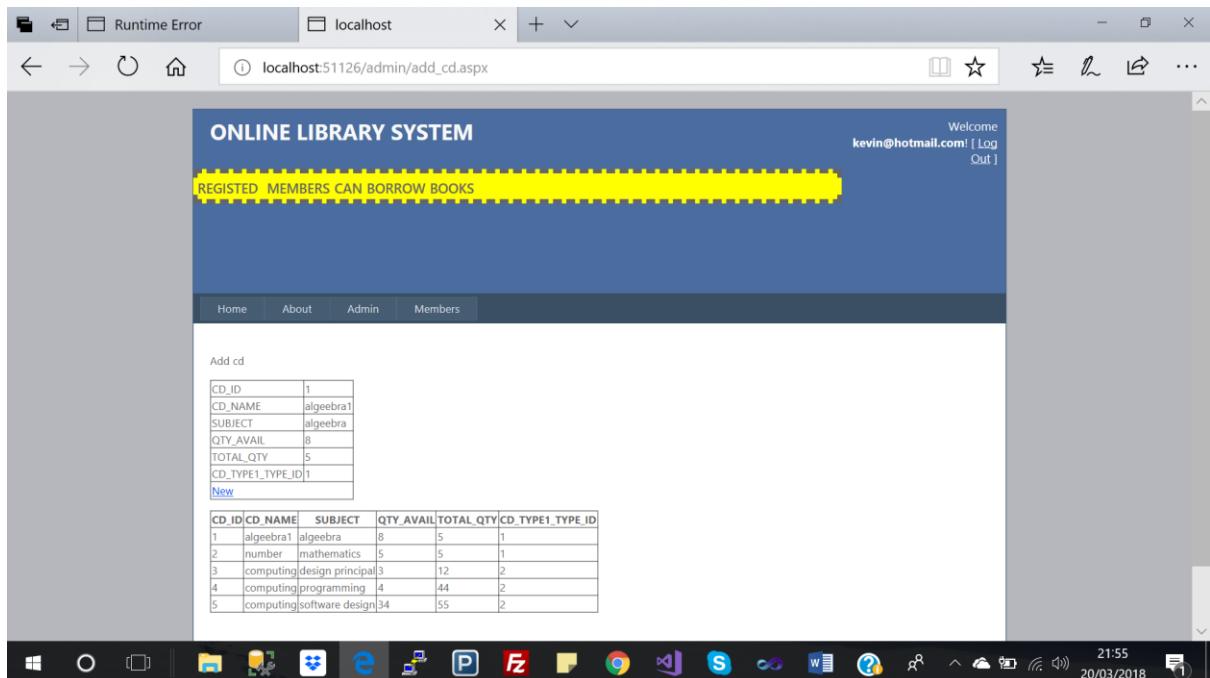
[ Log In ]

Edit books informations

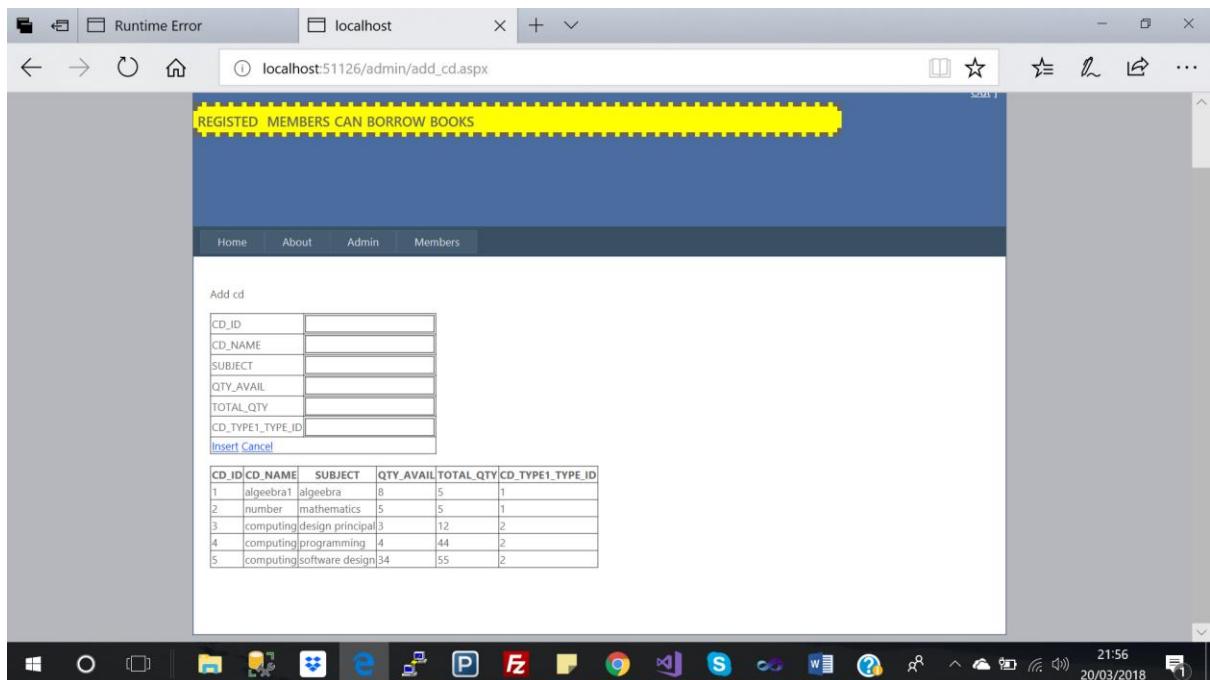
|                      |            |
|----------------------|------------|
| TOTAL                | 15         |
| AVAILABLE            | 12         |
| ISBN                 | db abc-123 |
| NAME                 | database   |
| BOOK_ID              | 2          |
| <a href="#">Edit</a> |            |

| TOTAL | AVAILABLE | ISBN       | NAME        | BOOK_ID |
|-------|-----------|------------|-------------|---------|
| 15    | 12        | db abc-123 | database    | 2       |
| 20    | 10        | kls234-uc  | engineering | 1       |

Add new CD appears as below



After click new the window change as below to insert new cds



We are going to add new cd as cd id =6,

In above screenshot we can see only five cds and after adding a cd ,cd\_id changes to 6 and add new cd information as below.

| CD_ID | CD_NAME     | SUBJECT          | QTY_AVAIL | TOTAL_QTY | CD_TYPE1_TYPE_ID |
|-------|-------------|------------------|-----------|-----------|------------------|
| 1     | algebra1    | algebra          | 8         | 5         | 1                |
| 2     | number      | mathematics      | 5         | 5         | 1                |
| 3     | computing   | design principal | 3         | 12        | 2                |
| 4     | computing   | programming      | 4         | 44        | 2                |
| 5     | computing   | software design  | 34        | 55        | 2                |
| 6     | mathematics | pure maths       | 4         | 4         | 1                |

## Edit cds

- WELCOME TO ONLINE LIBRARY SYSTEM
- add BOOK
- Edit update member
- Add MEMBER
- Add cd
- edit update CD
- Edit update BOOKS
- View all books
- View all Members
- issue book
- receive book

CD\_ID: 1  
CD\_NAME: algeebra1  
SUBJECT: algeebra  
QTY\_AVAIL: 8  
TOTAL\_QTY: 5  
CD\_TYPE1\_TYPE\_ID: 1

| CD_ID | CD_NAME     | SUBJECT          | QTY_AVAIL | TOTAL_QTY | CD_TYPE1_TYPE_ID |
|-------|-------------|------------------|-----------|-----------|------------------|
| 1     | algeebra1   | algeebra         | 8         | 5         | 1                |
| 2     | number      | mathematics      | 5         | 5         | 1                |
| 3     | computing   | design principal | 12        | 2         |                  |
| 4     | computing   | programming      | 4         | 44        | 2                |
| 5     | computing   | software design  | 34        | 55        | 2                |
| 6     | mathematics | pure maths       | 4         | 4         | 1                |

CD\_ID: 1  
CD\_NAME: algeebra1  
SUBJECT: algeebra  
QTY\_AVAIL: 8  
TOTAL\_QTY: 10  
CD\_TYPE1\_TYPE\_ID: 1

| CD_ID | CD_NAME     | SUBJECT          | QTY_AVAIL | TOTAL_QTY | CD_TYPE1_TYPE_ID |
|-------|-------------|------------------|-----------|-----------|------------------|
| 1     | algeebra1   | algeebra         | 8         | 5         | 1                |
| 2     | number      | mathematics      | 5         | 5         | 1                |
| 3     | computing   | design principal | 12        | 2         |                  |
| 4     | computing   | programming      | 4         | 44        | 2                |
| 5     | computing   | software design  | 34        | 55        | 2                |
| 6     | mathematics | pure maths       | 4         | 4         | 1                |

Lets change total qty from 5 to 10

The screenshot shows a Microsoft Edge browser window with the URL `localhost:51126/admin/edit_books.aspx`. The page title is "Edit CD". There is a table with the following data:

|                  |                        |
|------------------|------------------------|
| CD_ID            | 1                      |
| CD_NAME          | algebra1               |
| SUBJECT          | algebra                |
| QTY_AVAIL        | 8                      |
| TOTAL_QTY        | 10                     |
| CD_TYPE1_TYPE_ID | 1                      |
| Update Cancel    | <a href="#">123456</a> |

Below the form is a table showing all CD records:

| CD_ID | CD_NAME     | SUBJECT          | QTY_AVAIL | TOTAL_QTY | CD_TYPE1_TYPE_ID |
|-------|-------------|------------------|-----------|-----------|------------------|
| 1     | algebra1    | algebra          | 8         | 5         | 1                |
| 2     | number      | mathematics      | 5         | 5         | 1                |
| 3     | computing   | design principal | 12        | 2         | 2                |
| 4     | computing   | programming      | 4         | 44        | 2                |
| 5     | computing   | software design  | 34        | 55        | 2                |
| 6     | mathematics | pure maths       | 4         | 4         | 1                |

After updated the following changes reflect in the table as below

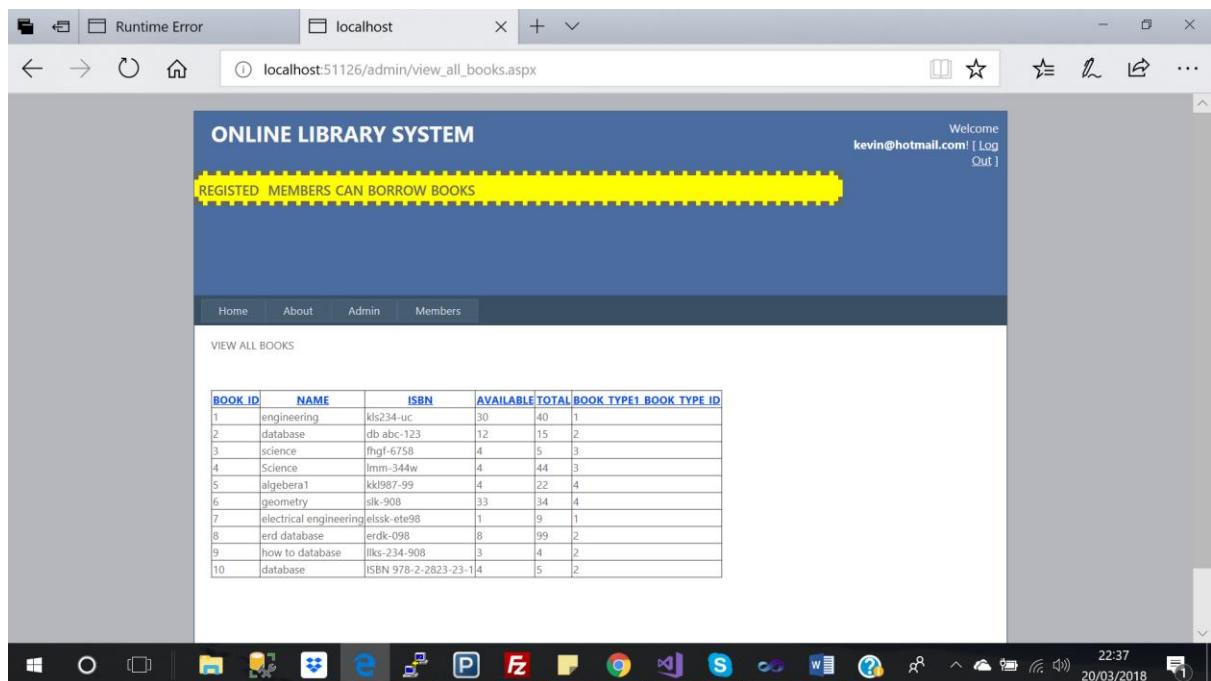
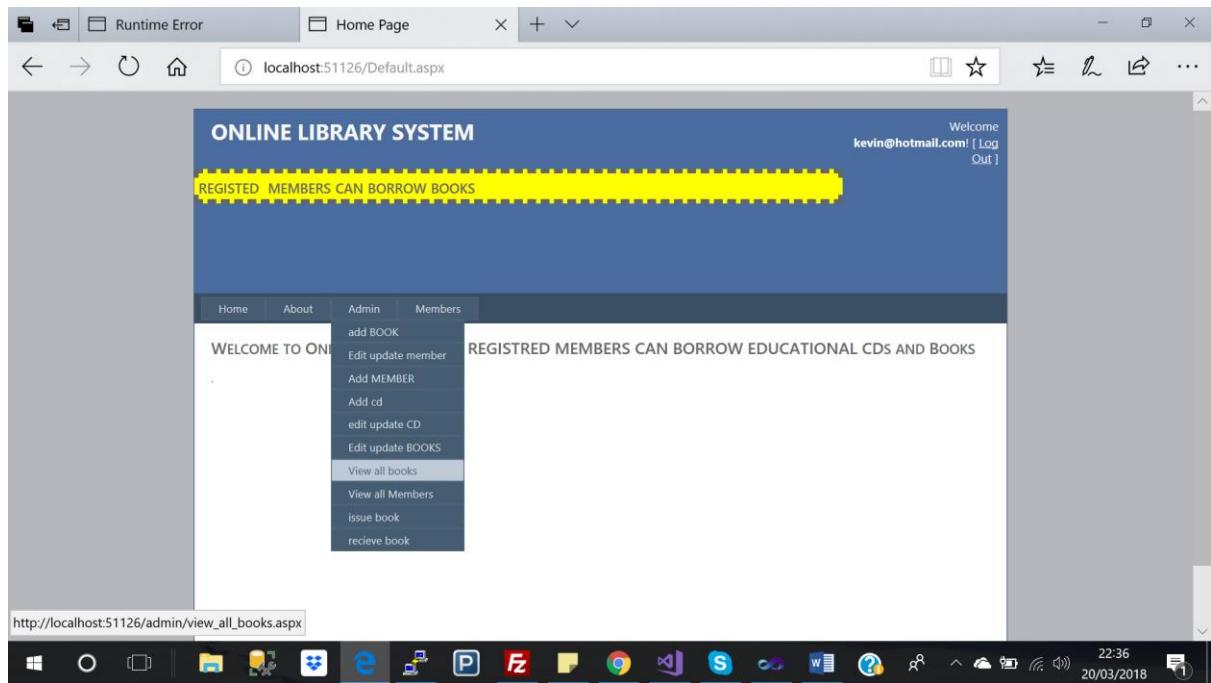
The screenshot shows a Microsoft Edge browser window with the URL `localhost:51126/admin/edit_books.aspx`. The page title is "Edit CD". There is a table with the following data:

|                  |                        |
|------------------|------------------------|
| CD_ID            | 1                      |
| CD_NAME          | algebra1               |
| SUBJECT          | algebra                |
| QTY_AVAIL        | 8                      |
| TOTAL_QTY        | 10                     |
| CD_TYPE1_TYPE_ID | 1                      |
| Edit             | <a href="#">123456</a> |

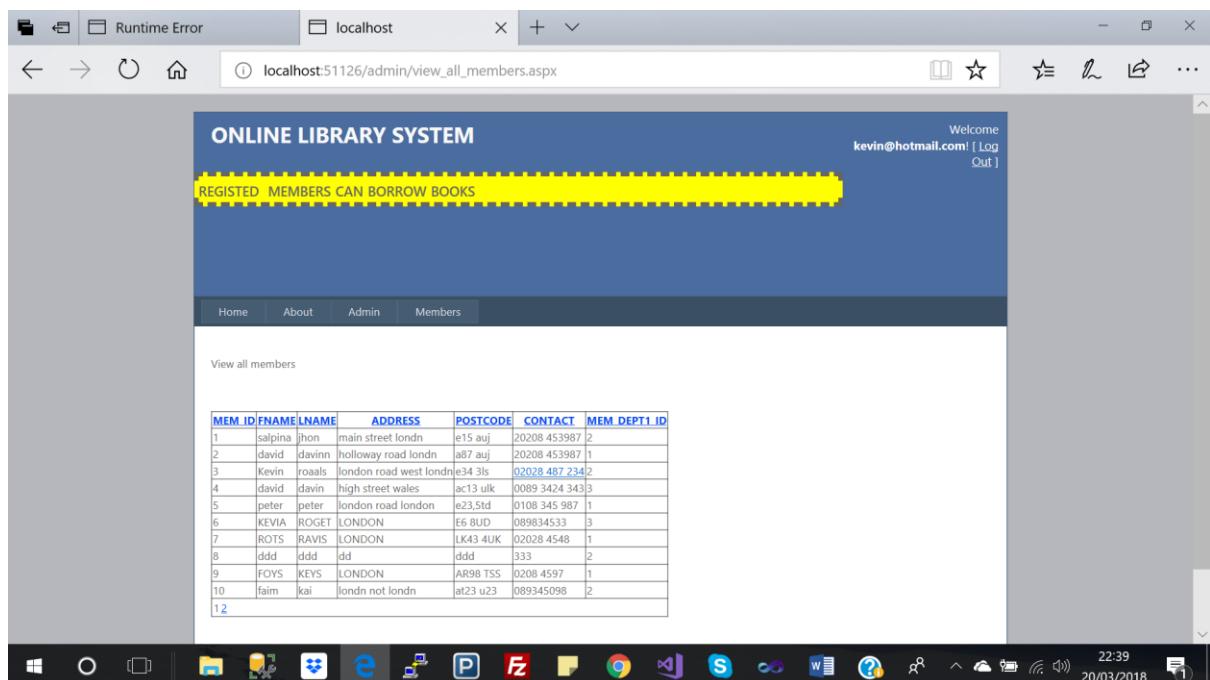
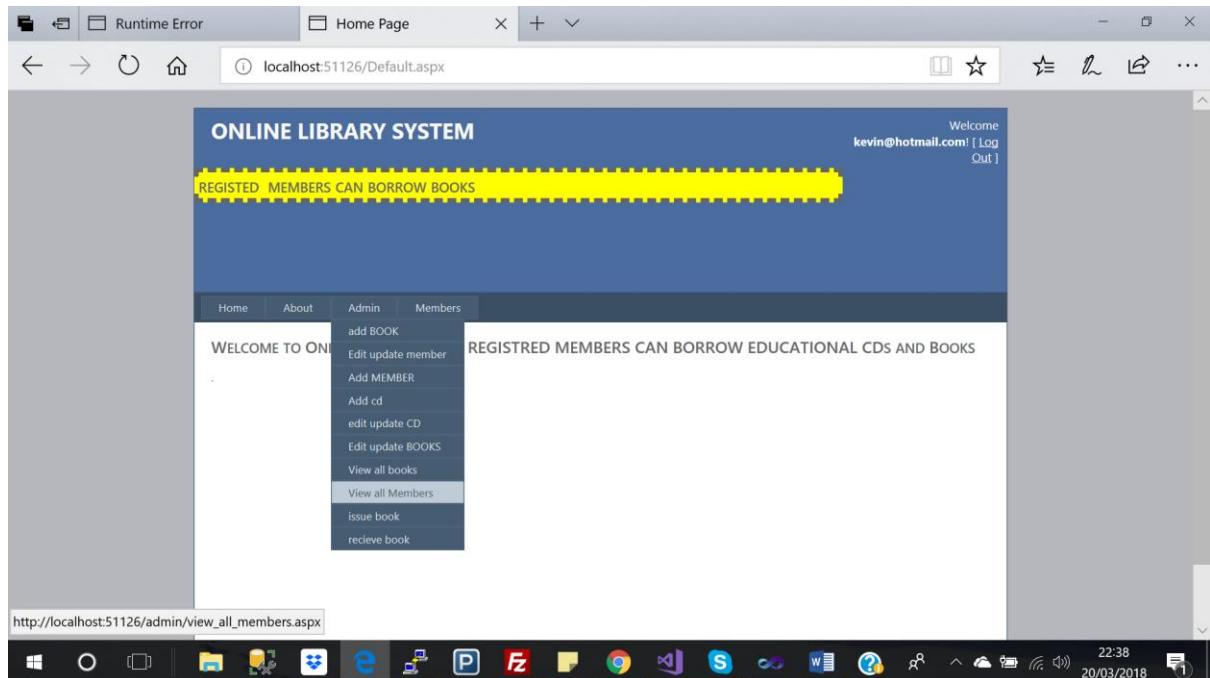
Below the form is a table showing all CD records:

| CD_ID | CD_NAME     | SUBJECT          | QTY_AVAIL | TOTAL_QTY | CD_TYPE1_TYPE_ID |
|-------|-------------|------------------|-----------|-----------|------------------|
| 1     | algebra1    | algebra          | 8         | 10        | 1                |
| 2     | number      | mathematics      | 5         | 5         | 1                |
| 3     | computing   | design principal | 12        | 2         | 2                |
| 4     | computing   | programming      | 4         | 44        | 2                |
| 5     | computing   | software design  | 34        | 55        | 2                |
| 6     | mathematics | pure maths       | 4         | 4         | 1                |

To View all books



To View all members



## **Members can search a book**

Member can Search a book

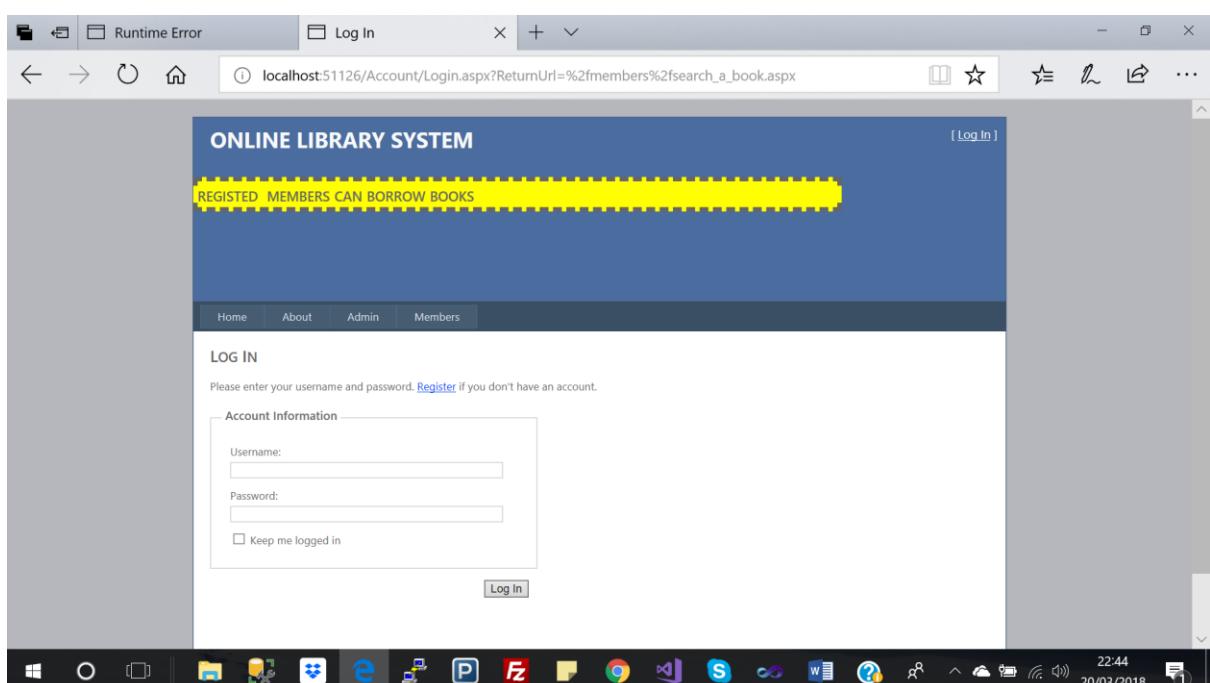
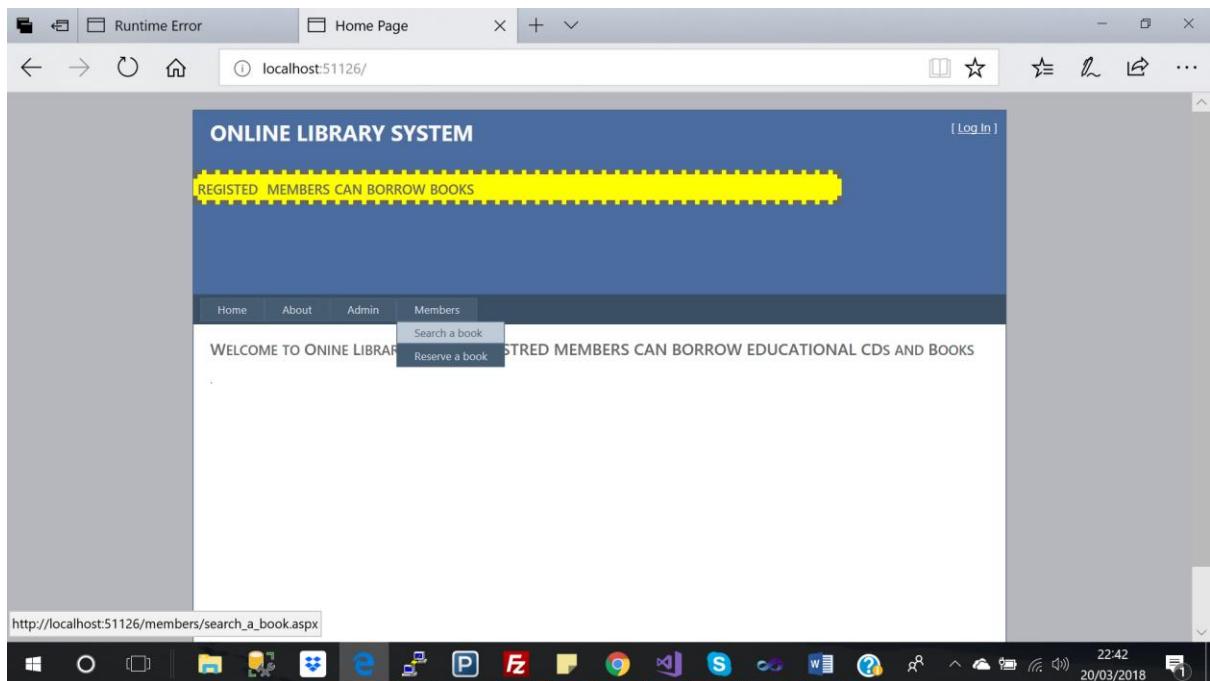
Members has to login

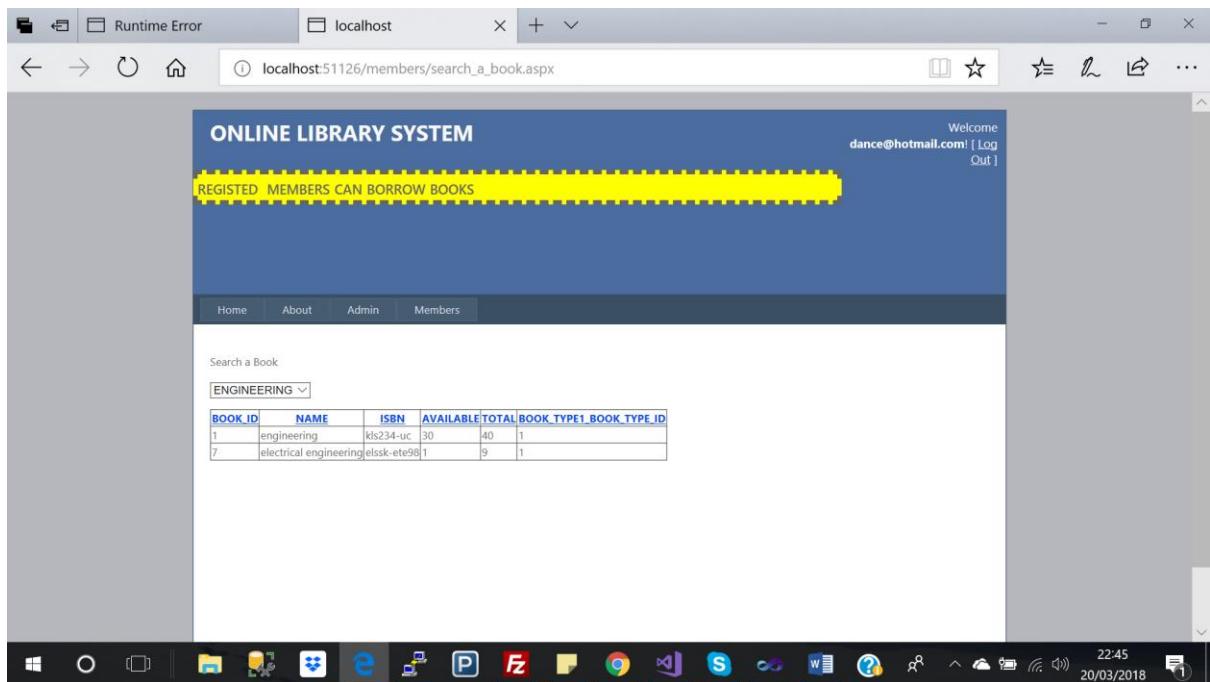
Member user [id=dance@hotmail.com](mailto:id=dance@hotmail.com)

Password=123Mango#

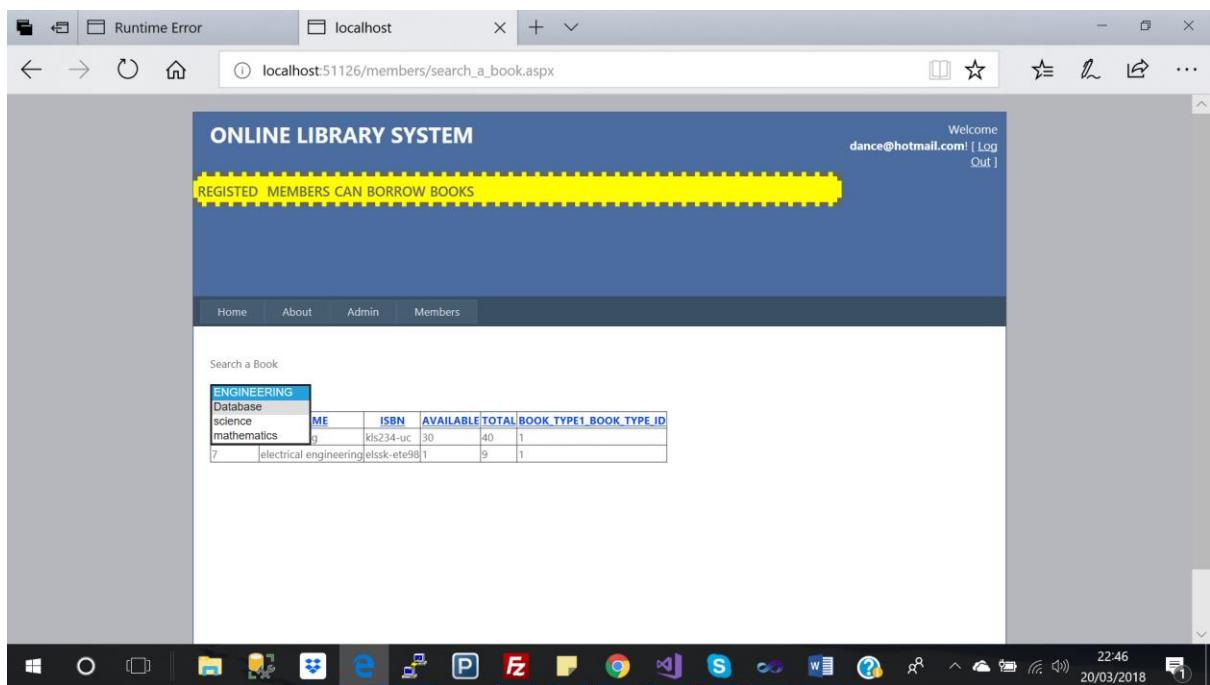
The member has to choose their available options from member menu as below

Member To seach a book





Lets change from engineering books search to database book search as below



It will display all databases books as below

The screenshot shows a web browser window titled "Runtime Error" with the URL "localhost:51126/members/search\_a\_book.aspx". The page header includes "ONLINE LIBRARY SYSTEM" and a welcome message for "dance@hotmail.com" with links to "Log Out". A yellow banner at the top says "REGISTERED MEMBERS CAN BORROW BOOKS". Below the banner is a navigation menu with "Home", "About", "Admin", and "Members". A search bar labeled "Search a Book" has a dropdown set to "Database". A table displays book data:

| BOOK_ID | NAME            | ISBN                  | AVAILABLE | TOTAL | BOOK_TYPE1_BOOK_TYPE_ID |
|---------|-----------------|-----------------------|-----------|-------|-------------------------|
| 2       | database        | db abc-123            | 12        | 15    | 2                       |
| 8       | erd database    | erdk-098              | 8         | 99    | 2                       |
| 9       | how to database | llks-234-908          | 3         | 4     | 2                       |
| 10      | database        | ISBN 978-2-2823-23-14 | 5         | 5     | 2                       |

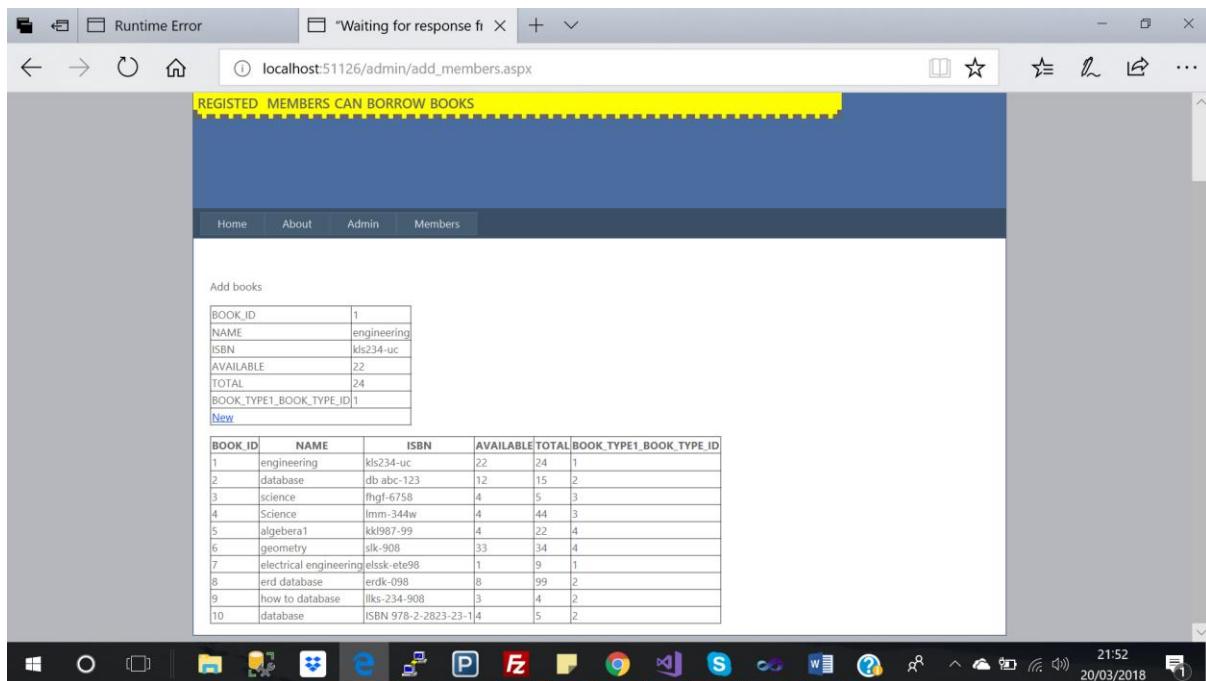
The browser taskbar shows various pinned icons and the system clock indicates 22:47 on 20/03/2018.

## Testing Document

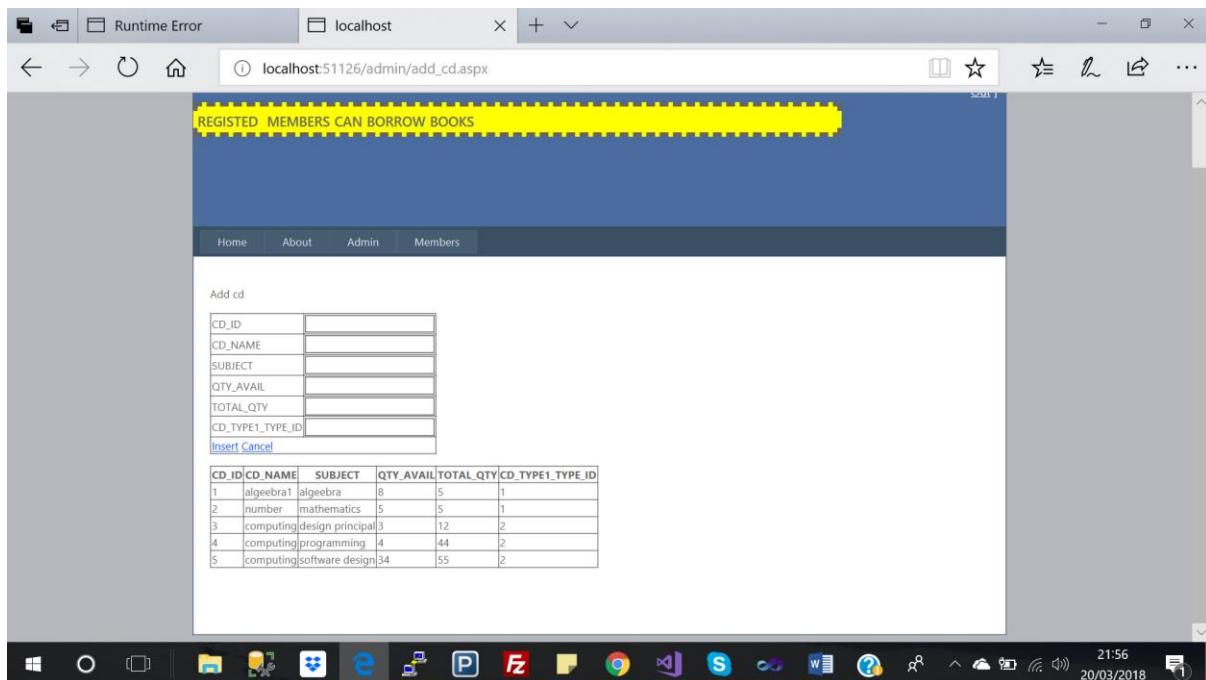
Insert book testing

The screenshot shows a web browser window titled "Runtime Error" with the URL "localhost:51126/admin/add\_members.aspx". The page header includes "ONLINE LIBRARY SYSTEM" and a welcome message for "dance@hotmail.com" with links to "Log Out". A yellow banner at the top says "REGISTERED MEMBERS CAN BORROW BOOKS". Below the banner is a navigation menu with "Home", "About", "Admin", and "Members". A form titled "Add books" contains fields for "NAME" (set to "database"), "BOOK\_ID" (set to "10"), "ISBN" (set to "ISBN 978-2-2823-23-14"), "AVAILABLE" (set to "4"), "TOTAL" (set to "5"), and "BOOK\_TYPE1\_BOOK\_TYPE\_ID" (set to "2"). Below the form is a table displaying book data, identical to the one in the previous screenshot. A "Dropbox" notification box in the bottom right corner says "Screenshot Added" and "A screenshot was added to your Dropbox." The browser taskbar shows various pinned icons and the system clock indicates 21:51 on 20/03/2018.

After adding new book it displays in book id 10 as below



### Adding new cd testing



We are going to add new cd as cd id =6,

In above screenshot we can see only five cds and after adding a cd ,cd\_id changes to 6 and add new cd information as below

Runtime Error    localhost

localhost:51126/admin/add\_cd.aspx

REGISTERED MEMBERS CAN BORROW BOOKS

Home About Admin Members

Add cd

|                  |          |
|------------------|----------|
| CD_ID            | 1        |
| CD_NAME          | algebra1 |
| SUBJECT          | algebra  |
| QTY_AVAIL        | 8        |
| TOTAL_QTY        | 5        |
| CD_TYPE1_TYPE_ID | 1        |

New

| CD_ID | CD_NAME     | SUBJECT          | QTY_AVAIL | TOTAL_QTY | CD_TYPE1_TYPE_ID |
|-------|-------------|------------------|-----------|-----------|------------------|
| 1     | algebra1    | algebra          | 8         | 5         | 1                |
| 2     | number      | mathematics      | 5         | 5         | 1                |
| 3     | computing   | design principal | 3         | 12        | 2                |
| 4     | computing   | programming      | 4         | 44        | 2                |
| 5     | computing   | software design  | 34        | 55        | 2                |
| 6     | mathematics | pure maths       | 4         | 4         | 1                |

21:59 20/03/2018

### Adding new member testing

Runtime Error    localhost

localhost:51126/admin/add\_books.aspx

Home Add About Admin Members

ADD NEW MEMBERS

|              |                                 |
|--------------|---------------------------------|
| MEM_ID       | 3                               |
| FNAME        | Kevin                           |
| LNAME        | rooals                          |
| ADDRESS      | london<br>road<br>west<br>londn |
| POSTCODE     | e34 3ls                         |
| 02028        |                                 |
| CONTACT      | 487<br>234                      |
| MEM_DEPT1_ID | 2                               |

New

| MEM_ID | FNAME  | LNAME  | ADDRESS                | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|--------|--------|------------------------|----------|---------------|--------------|
| 3      | Kevin  | rooals | london road west londn | e34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin  | high street wales      | ac13 ulk | 0089 3424 343 | 3            |
| 6      | KEVIA  | ROGET  | LONDON                 | E6 8UD   | 089834533     | 3            |
| 7      | ROTS   | RAVIS  | LONDON                 | LK43 4UK | 02028 4548    | 1            |
| 1      | appina | jhon   | main street londn      | e15 auj  | 20208 453987  | 2            |
| 2      | david  | davinn | holloway road londn    | a87 auj  | 20208 453987  | 1            |
| 9      | FOYE   | KEYS   | LONDON                 | AR9 5TSS | 0208 4597     | 1            |
| 10     | faim   | kai    | londn not londn        | al23 u23 | 089345098     | 2            |
| 5      | peter  | peter  | london road london     | e23 5fd  | 0108 345 987  | 1            |
| 8      | ddd    | ddd    | dd                     | ddd      | 333           | 2            |

22:01 20/03/2018

The screenshot shows a Windows desktop environment with a web browser window open at [localhost:51126/admin/add\\_books.aspx](http://localhost:51126/admin/add_books.aspx). The browser title bar says "Runtime Error" and the address bar says "localhost". The page header includes links for Home, About, Admin, and Members. Below the header, a section titled "ADD NEW MEMBERS" contains a form with fields for MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. There are also "Insert" and "Cancel" buttons. To the right of the form is a table listing 12 members with columns: MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. The table data is as follows:

| MEM_ID | FNAME  | LNAME   | ADDRESS                 | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|--------|---------|-------------------------|----------|---------------|--------------|
| 3      | Kevin  | Iraoals | london road west london | E34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin   | high street wales       | ac13 ulk | 0089 3424 343 | 3            |
| 6      | KEVIA  | ROGET   | LONDON                  | E6 8UD   | 089834533     | 3            |
| 7      | ROTS   | RAVIS   | LONDON                  | UK43 4UK | 02028 4548    | 1            |
| 1      | appina | jhon    | main street london      | e15 auj  | 20208 453987  | 2            |
| 2      | david  | davinn  | holloway road london    | a87 auj  | 20208 453987  | 1            |
| 9      | FOYS   | KEYS    | LONDON                  | AR98 TSS | 0208 4597     | 1            |
| 10     | faim   | kai     | london not londn        | al23 u23 | 089345098     | 2            |
| 11     | vitasa | uttasa  | london wales            | sk09 uk3 | 0089 3424 343 | 3            |
| 5      | peter  | peter   | london road london      | e23.5td  | 0108 345 987  | 1            |
| 12     |        |         |                         |          |               |              |

The status bar at the bottom of the browser shows the time as 22:08 and the date as 20/03/2018.

Currently there are 11 members we are going to add a member , after new member added the mem-id increased to 12 as below and new members will be added.

New member id=12, fname=mike, lname=mike is going to be added as below

The screenshot shows a Windows desktop environment with a web browser window open at [localhost:51126/admin/add\\_books.aspx](http://localhost:51126/admin/add_books.aspx). The browser title bar says "Runtime Error" and the address bar says "localhost". The page header includes links for Home, About, Admin, and Members. Below the header, a section titled "ADD NEW MEMBERS" contains a form with fields for MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. The MEM\_ID field is set to 12. There are also "Insert" and "Cancel" buttons. To the right of the form is a table listing 12 members with columns: MEM\_ID, FNAME, LNAME, ADDRESS, POSTCODE, CONTACT, and MEM\_DEPT1\_ID. The table data is as follows:

| MEM_ID | FNAME  | LNAME   | ADDRESS                 | POSTCODE | CONTACT       | MEM_DEPT1_ID |
|--------|--------|---------|-------------------------|----------|---------------|--------------|
| 3      | Kevin  | Iraoals | london road west london | E34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin   | high street wales       | ac13 ulk | 0089 3424 343 | 3            |
| 6      | KEVIA  | ROGET   | LONDON                  | E6 8UD   | 089834533     | 3            |
| 7      | ROTS   | RAVIS   | LONDON                  | UK43 4UK | 02028 4548    | 1            |
| 1      | appina | jhon    | main street london      | e15 auj  | 20208 453987  | 2            |
| 2      | david  | davinn  | holloway road london    | a87 auj  | 20208 453987  | 1            |
| 9      | FOYS   | KEYS    | LONDON                  | AR98 TSS | 0208 4597     | 1            |
| 10     | faim   | kai     | london not londn        | al23 u23 | 089345098     | 2            |
| 11     | vitasa | uttasa  | london wales            | sk09 uk3 | 0089 3424 343 | 3            |
| 5      | peter  | peter   | london road london      | e23.5td  | 0108 345 987  | 1            |
| 12     | mike   | mike    | london or wales         | e12 3sf  | 0089 3424 343 | 2            |

The status bar at the bottom of the browser shows the time as 22:10 and the date as 20/03/2018.

ADD NEW MEMBERS

|              |                                 |
|--------------|---------------------------------|
| MEM_ID       | 3                               |
| FNAME        | Kevin                           |
| LNAME        | rooals                          |
| ADDRESS      | london<br>road<br>west<br>londn |
| POSTCODE     | e34 3ls                         |
| CONTACT      | 02028<br>487<br>234             |
| MEM_DEPT1_ID | 2                               |
| New          |                                 |

| MEM_ID | FNAME  | LNAME  | ADDRESS                 | POSTCODE | CONTACT       | MEM_DEPT1.ID |
|--------|--------|--------|-------------------------|----------|---------------|--------------|
| 3      | Kevin  | rooals | london road west london | e34 3ls  | 02028 487 234 | 2            |
| 4      | david  | davin  | high street wales       | ac13 ulk | 0089 3424 343 | 3            |
| 6      | KEVIA  | ROGET  | LONDON                  | E6 8UD   | 089834533     | 3            |
| 7      | ROTS   | RAVIS  | LONDON                  | LK43 4UK | 02028 4548    | 1            |
| 1      | appina | jhon   | main street londa       | e15 auj  | 20208 453987  | 2            |
| 2      | david  | davinn | holloway road londn     | a87 auj  | 20208 453987  | 1            |
| 9      | FOYS   | KEYS   | LONDON                  | AR98 TSS | 0208 4597     | 1            |
| 10     | faim   | kai    | london not londn        | at23 u23 | 089345098     | 2            |
| 11     | vitasa | uttasa | london wales            | sk09 uk3 | 0089 3424 343 | 3            |
| 12     | mike   | mike   | london or wales         | e12 3sf  | 0089 3424 343 | 2            |
| 12     |        |        |                         |          |               |              |

## Book edit testing

Edit books

|   |             |
|---|-------------|
| BOOK_ID                                       | 1           |
| NAME  | engineering |
| ISBN  | kls234-uc   |
| AVAILABLE                                     | 22          |
| TOTAL   | 24          |
| <a href="#">Update</a> <a href="#">Cancel</a> |             |
| 12345678910                                   |             |

UPDATES INFORMATION CAN VIEW IN BELOW WINDOWS

| BOOK_ID | NAME                   | ISBN                  | AVAILABLE | TOTAL |
|---------|------------------------|-----------------------|-----------|-------|
| 1       | engineering            | kls234-uc             | 22        | 24    |
| 2       | database               | db abc-123            | 12        | 15    |
| 3       | science                | fhgf-6758             | 4         | 5     |
| 4       | Science                | lmnm-344w             | 4         | 44    |
| 5       | algebra1               | kk987-99              | 4         | 22    |
| 6       | geometry               | slk-908               | 33        | 34    |
| 7       | electrical engineering | elisk-ete98           | 1         | 9     |
| 8       | erd database           | erd-098               | 8         | 99    |
| 9       | how to database        | llks-234-908          | 3         | 4     |
| 10      | database               | ISBN 978-2-2823-23-14 | 5         |       |

UPDATES CAN VIEW AT BELOW WINDOW

We are going to add edit book\_id 1' information as below

Available from 22 to 30 and total from 24 to 40 and changes reflect in below gridvies as below

Runtime Error    localhost

localhost:51126/admin/edit\_cds.aspx

Home About Admin Members

Edit books

|                      |             |
|----------------------|-------------|
| BOOK_ID              | 1           |
| NAME                 | engineering |
| ISBN                 | kls234-uc   |
| AVAILABLE            | 30          |
| TOTAL                | 40          |
| Update Cancel        |             |
| 1 2 3 4 5 6 7 8 9 10 |             |

UPDATES INFORMATION CAN VIEW IN BELOW WINDOWS

| BOOK_ID | NAME                   | ISBN                  | AVAILABLE | TOTAL |
|---------|------------------------|-----------------------|-----------|-------|
| 1       | engineering            | kls234-uc             | 22        | 24    |
| 2       | database               | db abc-123            | 12        | 15    |
| 3       | science                | fhgf-6758             | 4         | 5     |
| 4       | Science                | lmm-344w              | 4         | 44    |
| 5       | algebra1               | kkl987-99             | 4         | 22    |
| 6       | geometry               | slk-908               | 33        | 34    |
| 7       | electrical engineering | eissk-ete98           | 1         | 9     |
| 8       | erd database           | erdk-098              | 8         | 99    |
| 9       | how to database        | llks-234-908          | 3         | 4     |
| 10      | database               | ISBN 978-2-2823-23-14 | 5         |       |

UPDATES CAN VIEW AT BELOW WINDOW

22:19 20/03/2018

Runtime Error    localhost

localhost:51126/admin/edit\_cds.aspx

Home About Admin Members

Edit books

|                      |             |
|----------------------|-------------|
| BOOK_ID              | 1           |
| NAME                 | engineering |
| ISBN                 | kls234-uc   |
| AVAILABLE            | 30          |
| TOTAL                | 40          |
| Edit                 |             |
| 1 2 3 4 5 6 7 8 9 10 |             |

UPDATES INFORMATION CAN VIEW IN BELOW WINDOWS

| BOOK_ID | NAME                   | ISBN                  | AVAILABLE | TOTAL |
|---------|------------------------|-----------------------|-----------|-------|
| 1       | engineering            | kls234-uc             | 30        | 40    |
| 2       | database               | db abc-123            | 12        | 15    |
| 3       | science                | fhgf-6758             | 4         | 5     |
| 4       | Science                | lmm-344w              | 4         | 44    |
| 5       | algebra1               | kkl987-99             | 4         | 22    |
| 6       | geometry               | slk-908               | 33        | 34    |
| 7       | electrical engineering | eissk-ete98           | 1         | 9     |
| 8       | erd database           | erdk-098              | 8         | 99    |
| 9       | how to database        | llks-234-908          | 3         | 4     |
| 10      | database               | ISBN 978-2-2823-23-14 | 5         |       |

UPDATES CAN VIEW AT BELOW WINDOW

22:19 20/03/2018

#### **Further discussion**

After completion of this project I have learnt valuable skills and tools to connect asp.net website with oracle databases and default aspen databases.

How to deal with remote databases and the difference between sql server, sql developer sql database oracle databases.

The tools necessary in order to connect to oracle databases which are not shipped with asp.net so we have to download from oracle website and how to choose the right one and how to configure them.

Setting up login for different users by using role management to prevent unauthorized access.

Extracting data using data source and problems arises when connecting databases and how to resolve them by doing search on google and books

## Reference

Installing ASP.NET Membership at

<https://weblogs.asp.net/sukumarraju/installing-asp-net-membership-services-database-in-sql-server-expreess> [Accessed on 23 FEB 2018]

ODAC 12.2C Release installation instruction ,setup and notes at

<http://www.oracle.com/technetwork/topics/dotnet/install122010-371118.html> [Accessed on 10 FEB 2018]