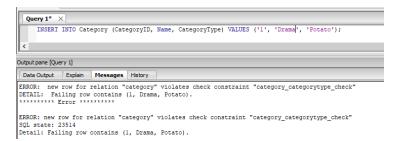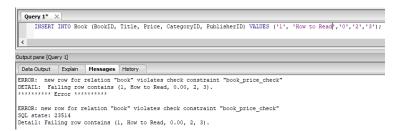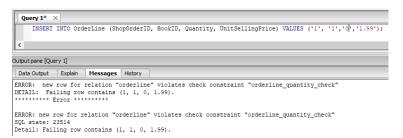CategoryType check constraint test, will only allow for fiction/non-fiction to be inputted, case insensitive.
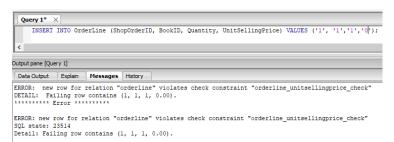
```
Query 1*  ×
    INSERT INTO Category (CategoryID, Name, CategoryType) VALUES ('1', 'Drama', 'Potato');
<
Output pane [Query 1]
Data Output   Explain   Messages   History

ERROR:  new row for relation "category" violates check constraint "category_categorytype_check"
DETAIL:  Failing row contains (1, Drama, Potato).
********** Error **********

ERROR: new row for relation "category" violates check constraint "category_categorytype_check"
SQL state: 23514
Detail: Failing row contains (1, Drama, Potato).
```

Book price check constraint test, price must be greater than 0.

```
Query 1*  ×
    INSERT INTO Book (BookID, Title, Price, CategoryID, PublisherID) VALUES ('1', 'How to Read','0','2','3');
<
Output pane [Query 1]
Data Output   Explain   Messages   History

ERROR:  new row for relation "book" violates check constraint "book_price_check"
DETAIL:  Failing row contains (1, How to Read, 0.00, 2, 3).
********** Error **********

ERROR: new row for relation "book" violates check constraint "book_price_check"
SQL state: 23514
Detail: Failing row contains (1, How to Read, 0.00, 2, 3).
```

OrderLine quantity constraint test, quantity must be greater than 0.

```
Query 1*  ×
    INSERT INTO OrderLine (ShopOrderID, BookID, Quantity, UnitSellingPrice) VALUES ('1', '1','0','1.99');
<
Output pane [Query 1]
Data Output   Explain   Messages   History

ERROR:  new row for relation "orderline" violates check constraint "orderline_quantity_check"
DETAIL:  Failing row contains (1, 1, 0, 1.99).
********** Error **********

ERROR: new row for relation "orderline" violates check constraint "orderline_quantity_check"
SQL state: 23514
Detail: Failing row contains (1, 1, 0, 1.99).
```

OrderLine UnitSellingPrice constraint test, selling price must be greater than 0.

```
Query 1*  ×
    INSERT INTO OrderLine (ShopOrderID, BookID, Quantity, UnitSellingPrice) VALUES ('1', '1','1','0');
<
Output pane [Query 1]
Data Output   Explain   Messages   History

ERROR:  new row for relation "orderline" violates check constraint "orderline_unitsellingprice_check"
DETAIL:  Failing row contains (1, 1, 1, 0.00).
********** Error **********

ERROR: new row for relation "orderline" violates check constraint "orderline_unitsellingprice_check"
SQL state: 23514
Detail: Failing row contains (1, 1, 1, 0.00).
```

Category Entity integrity test

```
Query 1*  ×
    INSERT INTO Category (CategoryID, Name, CategoryType) VALUES (NULL, 'sad', 'non-Fiction');
<
Output pane [Query 1]
Data Output   Explain   Messages   History

ERROR:  null value in column "categoryid" violates not-null constraint
DETAIL:  Failing row contains (null, sad, non-Fiction).
********** Error **********

ERROR: null value in column "categoryid" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (null, sad, non-Fiction).
```

SalesRep Entity integrity test

```
Query 1*  ×
    INSERT INTO SalesRep (SalesRepID, Name) VALUES (NULL, 'Nigel');
<
```

Output pane [Query 1]

| Data Output | Explain | **Messages** | History |

```
ERROR:  null value in column "salesrepid" violates not-null constraint
DETAIL:  Failing row contains (null, Nigel).
********** Error **********

ERROR: null value in column "salesrepid" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (null, Nigel).
```

Shop Entity integrity test

```
Query 1*  ×
    INSERT INTO Shop (ShopID, Name) VALUES (NULL, 'Amazon');
<
```

Output pane [Query 1]

| Data Output | Explain | **Messages** | History |

```
ERROR:  null value in column "shopid" violates not-null constraint
DETAIL:  Failing row contains (null, Amazon).
********** Error **********

ERROR: null value in column "shopid" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (null, Amazon).
```

Publisher Entity integrity test

```
Query 1*  ×
    INSERT INTO Publisher (PublisherID, Name) VALUES (NULL, 'Penguin');
<
```

Output pane [Query 1]

| Data Output | Explain | **Messages** | History |

```
ERROR:  null value in column "publisherid" violates not-null constraint
DETAIL:  Failing row contains (null, Penguin).
********** Error **********

ERROR: null value in column "publisherid" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (null, Penguin).
```

Book Entity integrity test

```
Query 1*  ×
    INSERT INTO Book (BookID, Title, Price, CategoryID, PublisherID) VALUES (NULL, 'FOOTBALL','0.98','8','5');
<
```

Output pane [Query 1]

| Data Output | Explain | **Messages** | History |

```
ERROR:  null value in column "bookid" violates not-null constraint
DETAIL:  Failing row contains (null, FOOTBALL, 0.98, 8, 5).

********** Error **********

ERROR: null value in column "bookid" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (null, FOOTBALL, 0.98, 8, 5).
```

ShopOrder Entity integrity test

```
Query 1*  ×
    INSERT INTO ShopOrder (ShopOrderID, OrderDate, ShopID, SalesRepID) VALUES (NULL, '2019/03/21','1','1');
<
```

Output pane [Query 1]

| Data Output | Explain | **Messages** | History |

```
ERROR:  null value in column "shoporderid" violates not-null constraint
DETAIL:  Failing row contains (null, 2019-03-21, 1, 1).

********** Error **********

ERROR: null value in column "shoporderid" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (null, 2019-03-21, 1, 1).
```

OrderLine Entity integrity test

```
Query 1*  ✕
    INSERT INTO OrderLine (ShopOrderID, BookID, Quantity, UnitSellingPrice) VALUES (NULL, '1','1','1.99');
```

Output pane [Query 1]

Data Output | Explain | **Messages** | History

```
ERROR:  null value in column "shoporderid" violates not-null constraint
DETAIL:  Failing row contains (null, 1, 1, 1.99).
********** Error **********

ERROR: null value in column "shoporderid" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (null, 1, 1, 1.99).
```

Book referential integrity test

```
Query 1*  ✕
    INSERT INTO Book (BookID, Title, Price, CategoryID, PublisherID) VALUES ('20', 'RUGBY','0.99','999','5');
```

Output pane [Query 1]

Data Output | Explain | **Messages** | History

```
ERROR:  insert or update on table "book" violates foreign key constraint "book_categoryid_fkey"
DETAIL:  Key (categoryid)=(999) is not present in table "category".
********** Error **********

ERROR: insert or update on table "book" violates foreign key constraint "book_categoryid_fkey"
SQL state: 23503
Detail: Key (categoryid)=(999) is not present in table "category".
```

```
Query 1*  ✕
    INSERT INTO Book (BookID, Title, Price, CategoryID, PublisherID) VALUES ('20', 'RUGBY','0.99','3','999');
```

Output pane [Query 1]

Data Output | Explain | **Messages** | History

```
ERROR:  insert or update on table "book" violates foreign key constraint "book_publisherid_fkey"
DETAIL:  Key (publisherid)=(999) is not present in table "publisher".
********** Error **********

ERROR: insert or update on table "book" violates foreign key constraint "book_publisherid_fkey"
SQL state: 23503
Detail: Key (publisherid)=(999) is not present in table "publisher".
```

```
Query 1*  ✕
    INSERT INTO Book (BookID, Title, Price, CategoryID, PublisherID) VALUES ('9', 'Being sad','3.99','1','8');
    DELETE FROM Category WHERE CategoryID = 1;
    SELECT * FROM Book WHERE BookID = 9;
```

Output pane [Query 1]

Data Output | Explain | Messages | History

	bookid integer	title character varying(50)	price numeric(10,2)	categoryid integer	publisherid integer
1	9	Being sad	3.99		8

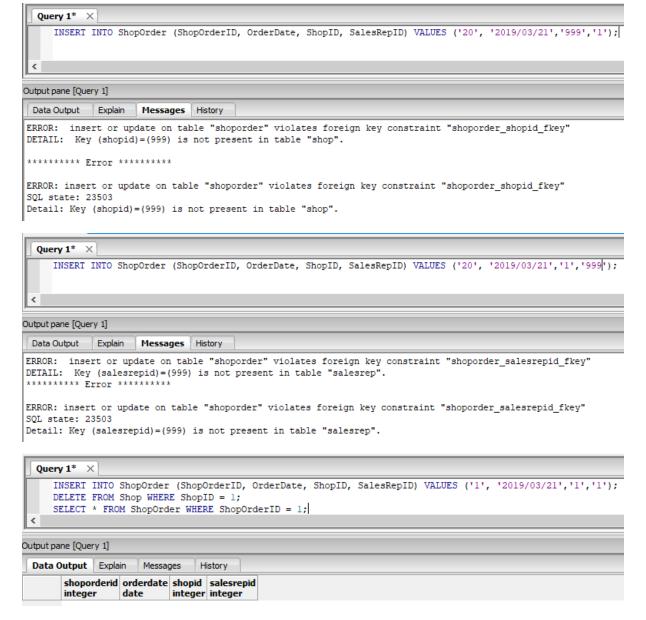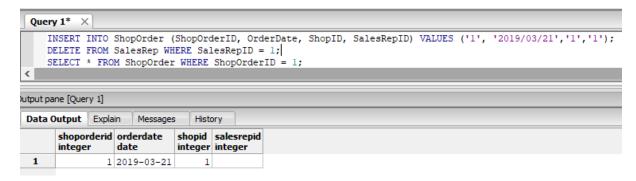## On Category delete, set to null

On Publisher delete restrict

ShopOrder Referential integrity test

On shop delete cascade

```
INSERT INTO ShopOrder (ShopOrderID, OrderDate, ShopID, SalesRepID) VALUES ('1', '2019/03/21','1','1');
DELETE FROM SalesRep WHERE SalesRepID = 1;
SELECT * FROM ShopOrder WHERE ShopOrderID = 1;
```
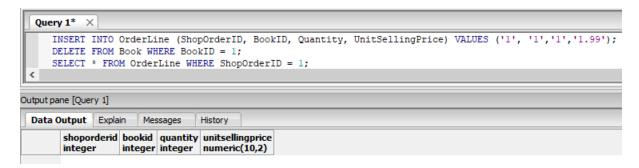
Output pane [Query 1]

Data Output | Explain | Messages | History

shoporderid integer	orderdate date	shopid integer	salesrepid integer
1	1 2019-03-21	1	

On salesrep delete set null

OrderLine referential integrity test


```
INSERT INTO OrderLine (ShopOrderID, BookID, Quantity, UnitSellingPrice) VALUES ('999', '1','1','1.99');
```

Output pane [Query 1]

Data Output | Explain | **Messages** | History

```
ERROR:  insert or update on table "orderline" violates foreign key constraint "orderline_shoporderid_fkey"
DETAIL:  Key (shoporderid)=(999) is not present in table "shoporder".
********** Error **********

ERROR: insert or update on table "orderline" violates foreign key constraint "orderline_shoporderid_fkey"
SQL state: 23503
Detail: Key (shoporderid)=(999) is not present in table "shoporder".
```



```
INSERT INTO OrderLine (ShopOrderID, BookID, Quantity, UnitSellingPrice) VALUES ('20', '999','1','1.99');
```

Output pane [Query 1]

Data Output | Explain | **Messages** | History

```
ERROR:  insert or update on table "orderline" violates foreign key constraint "orderline_shoporderid_fkey"
DETAIL:  Key (shoporderid)=(20) is not present in table "shoporder".
********** Error **********

ERROR: insert or update on table "orderline" violates foreign key constraint "orderline_shoporderid_fkey"
SQL state: 23503
Detail: Key (shoporderid)=(20) is not present in table "shoporder".
```



```
INSERT INTO OrderLine (ShopOrderID, BookID, Quantity, UnitSellingPrice) VALUES ('1', '1','1','1.99');
DELETE FROM ShopOrder WHERE ShopOrderID = 1;
SELECT * FROM OrderLine WHERE BookID = 1;
```

Output pane [Query 1]

Data Output | Explain | Messages | History

shoporderid integer	bookid integer	quantity integer	unitsellingprice numeric(10,2)

On ShopOrder delete cascade

On Book delete cascade