



Exercise Eleven

11.1 Create a before insert trigger for the stock_information table, and perform the following checks

- a. Make sure the si_stock_number isnt already used on the table
- b. Make sure the si_section_number is present in the section_details table (foreign key)
- c. Convert the si_stock_description to uppercase
- d. Make sure that the si_stock_description isnt already used in the table
- e. Make sure that the si_no_in_stock is not a negative value
- f. Make sure that the audit columns are populated (si_created_date and si_created_by)
- g. Make sure that the updated audit columns are not populated (si_updated_date and si_updated_by)

Save as c:\course\ex11_1.sql

Test as follows ...

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insert into stock_information values (1,1,'Testing1',12,25,user,sysdate,null,null);

ERROR at line 1:

ORA-20000: Cannot insert a Duplicate Stock Number.

insert into stock_information values (999,11,'Testing1',12,25,user,sysdate,null,null);

ERROR at line 1:

ORA-20000: Invalid Section Number.

insert into stock_information values (999,1,'Mallet',12,25,user,sysdate,null,null);

ERROR at line 1:

ORA-20000: Duplicate Stock Description.

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insert into stock_information values (999,1,'Chisel',12,-25,user,sysdate,null,null)

ERROR at line 1:

ORA-20000: Number in Stock cannot be lower than zero.

insert into stock_information values (999,1,'Chisel',12,25,null,sysdate,null,null);

ERROR at line 1:

ORA-20000: Created audit columns cannot be null.

insert into stock_information values (999,1,'Chisel',12,25,user,null,null,null);

ERROR at line 1:

ORA-20000: Created audit columns cannot be null.

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```
insert into stock_information values (999,1,'Chisel',12,25,user,sysdate,user,null);
```

ERROR at line 1:

ORA-20000: Updated audit columns must be null.

```
insert into stock_information values (999,1,'Chisel',12,25,user,sysdate,null,sysdate);
```

ERROR at line 1:

ORA-20000: Updated audit columns must be null.

```
insert into stock_information values (999,1,'Chisel',12,25,user,sysdate,null,null);
```

1 row created.



Exercise Eleven

11.2 Modify the trigger created in ex11_1 so that any error is recorded in a new table called SI_AUDIT, make it of the following structure ...

```
SIA_DATE DATE  
SIA_ACTION VARCHAR2(10)  
SIA_DATA VARCHAR2(4000)
```

Remember that when the raise_application_error process is used then the data is rolled back, therefore the writing to the SI_AUDIT table should take place in a sub-process within the trigger etc

Save as c:\course\ex11_2.sql

Test it as follows ...

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```
insert into stock_information values (1,1,'Testing1',12,25,user,sysdate,null,null)
```

ERROR at line 1:

ORA-20000: Cannot insert a Duplicate Stock Number.

```
select * from si_audit
```

```
SIA_DATE  SIA_ACTION  SIA_DATA
```

```
-----  
18-NOV-10 Insert      An attempt was made to insert a Duplicate Stock Number.
```



Exercise Eleven

11.3 Create a new delete trigger for the stock_information trigger which prevents the User deleting records. Save as c:\course\ex11_3.sql

Test as follows ...

delete from stock_information

ERROR at line 1:

ORA-20000: This table cannot be deleted from.

ORA-06512: at "PLSQL1001_USER.SI_BD_TRG", line 5

ORA-04088: error during execution of trigger 'PLSQL1001_USER.SI_BD_TRG'