

Oracle Academy

Amazing Books

Part 1: Building Tables and Adding Constraints

In this section, you use the Object Browser in Oracle Application Express to:

- Build the base tables for the project
- Add foreign key constraints

Be sure to have a copy of the ERD and schema diagrams available as you go through this section. You will need to reference them as you build the tables.

Step 1: Logging on to Oracle Application Express.

Log on to Oracle Application Express at <http://iacademy.oracle.com/>

In the **Login** screen, enter your School, Username, and Password. Click **Login**.

Login

School	<input type="text" value="USCA_CURR1"/>
Username	<input type="text" value="USCA_CURR1_SQL01_S01"/>
Password	<input type="password" value="*****"/>
	<input type="button" value="Login"/>

Step 2: Accessing SQL Workshop and the Object Browser

2.1 Launch SQL Workshop.

In the **Home** window of **Oracle Application Express**, click **SQL Workshop**. The SQL Workshop tools are displayed.

ORACLE® Application Express



2.2 Use the Object Browser to create the tables for the project.

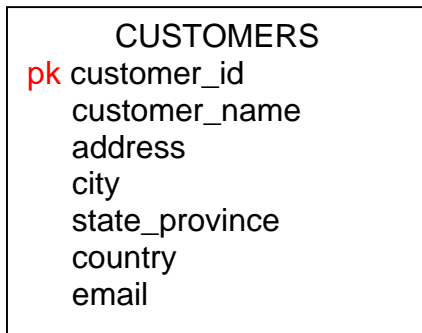
A. Click the drop-down menu for **Object Browser**.

B. Select **Create-> Table**.



Step 3: Creating the CUSTOMERS table

3.1 Review the CUSTOMERS entity in the ERD and schema diagram.



The table description for the CUSTOMERS table is as follows:

Object Type **TABLE** Object **CUSTOMERS**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>CUSTOMERS</u>	<u>CUSTOMER_ID</u>	Number	-	5	0	1	-	-	-
	<u>CUSTOMER_NAME</u>	Varchar2	50	-	-	-	-	-	-
	<u>ADDRESS</u>	Varchar2	50	-	-	-	-	-	-
	<u>CITY</u>	Varchar2	50	-	-	-	-	-	-
	<u>STATE_PROVINCE</u>	Varchar2	50	-	-	-	✓	-	-
	<u>COUNTRY</u>	Varchar2	50	-	-	-	-	-	-
	<u>EMAIL</u>	Varchar2	50	-	-	-	✓	-	-
1 - 7									

3.2 Create the columns for the CUSTOMERS table.

The table description for the CUSTOMERS table is as follows:

Object Type **TABLE** Object **CUSTOMERS**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUSTOMER_ID	Number	-	5	0	1	-	-	-
	CUSTOMER_NAME	Varchar2	50	-	-	-	-	-	-
	ADDRESS	Varchar2	50	-	-	-	-	-	-
	CITY	Varchar2	50	-	-	-	-	-	-
	STATE_PROVINCE	Varchar2	50	-	-	-	✓	-	-
	COUNTRY	Varchar2	50	-	-	-	-	-	-
	EMAIL	Varchar2	50	-	-	-	✓	-	-

1 - 7

Enter the column information in the **Create Table** window.

- Enter CUSTOMERS in the **Table Name** textbox.
- Create the fields in the table by entering the data in the picture into the **Column Name**, **Type**, **Precision** and **Scale** textboxes.
- According to the ERD, some columns are optional and others are required. Check **Not Null** for the columns that must not have a null value (a NOT NULL constraint will be created when the table is created).

Note: Primary Keys will set to NOT NULL by default, but in this case, we are checking the value anyway.

- When you are finished, click **Next**.

3.3 Create the primary key for the CUSTOMERS table.

A primary key allows each row in a table to be uniquely identified.

Primary Key

Table name: CUSTOMERS

Primary Key: ☐ No Primary Key ☒ Populated from a new sequence ☐ Populated from an existing sequence ☐ Not populated

* Primary Key Constraint Name: CUSTOMERS_PK

* Sequence Name: CUSTOMERS_SEQ


* Primary Key: CUSTOMER_ID(NUMBER)

- Select Primary Key -
CUSTOMER_ID(NUMBER)
CUSTOMER_NAME(VARCHAR2)
ADDRESS(VARCHAR2)
CITY(VARCHAR2)
STATE_PROVINCE(VARCHAR2)
COUNTRY(VARCHAR2)
EMAIL(VARCHAR2)

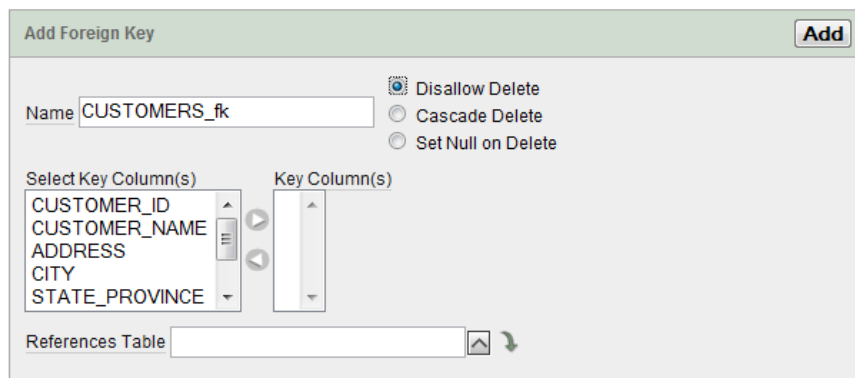
- A. The primary key values for the CUSTOMERS table will be generated from a sequence. Choose “**Populated from a new sequence**” for the Primary Key.
- B. Confirm that the **Primary Key Constraint Name** is CUSTOMERS_PK and the Sequence Name is CUSTOMERS_SEQ. These are automatically entered by Application Express.
- C. In the **Primary Key** drop-down menu, choose CUSTOMER_ID.
- D. When you are finished, click **Next**.

3.4 Skip the step of creating a foreign key for the CUSTOMERS table.

The next part of creating a table in Application Express is defining the foreign key. Since CUSTOMERS is the first table in this project, there are no foreign keys to reference yet. Click **Next** to continue.



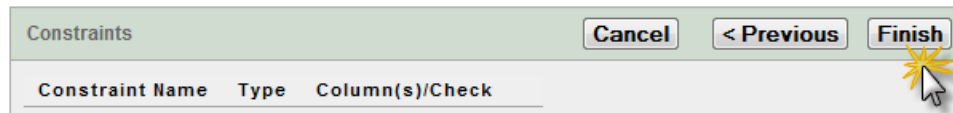
The 'Foreign Keys' dialog box has a title bar with 'Cancel', '< Previous', and 'Next >' buttons. Below the title bar is a tabbed interface with tabs for 'Foreign Key', 'Columns', 'Referenced Table', 'Referenced Columns', and 'Action'. The 'Foreign Key' tab is selected. A yellow starburst icon is next to the 'Next >' button.



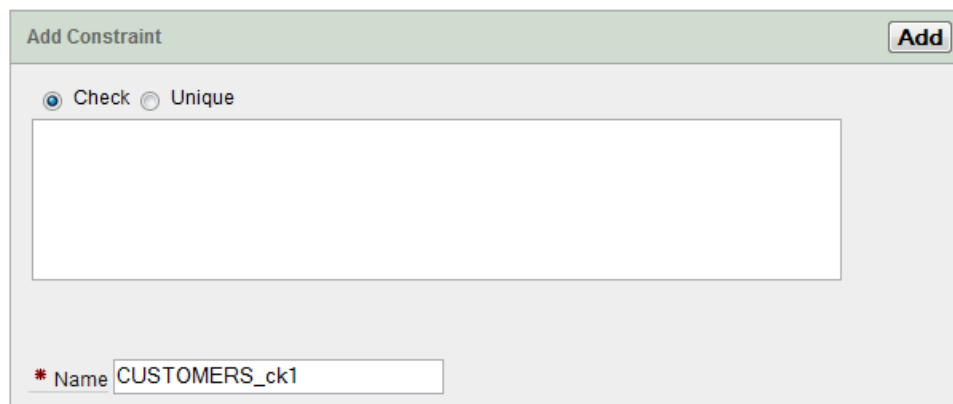
The 'Add Foreign Key' dialog box has an 'Add' button in the top right. It contains a 'Name' field with the text 'CUSTOMERS_fk'. Below the name field are three radio buttons: 'Disallow Delete' (selected), 'Cascade Delete', and 'Set Null on Delete'. There are two list boxes: 'Select Key Column(s)' and 'Key Column(s)'. The 'Select Key Column(s)' list box contains the following columns: CUSTOMER_ID, CUSTOMER_NAME, ADDRESS, CITY, and STATE_PROVINCE. The 'Key Column(s)' list box is empty. Below the list boxes is a 'References Table' field with a dropdown arrow. A yellow starburst icon is next to the 'Add' button.

3.5 Skip the step of creating additional constraints for the CUSTOMERS table.

The next step in the table creation process is to create constraints for the table. There are no constraints needed for the CUSTOMERS table. Click **Finish**.



The 'Constraints' dialog box has a title bar with 'Cancel', '< Previous', and 'Finish' buttons. Below the title bar is a table with columns 'Constraint Name', 'Type', and 'Column(s)/Check'. A yellow starburst icon is next to the 'Finish' button.



The 'Add Constraint' dialog box has an 'Add' button in the top right. It contains two radio buttons: 'Check' (selected) and 'Unique'. Below the radio buttons is a large empty text area. At the bottom, there is a 'Name' field with the text 'CUSTOMERS_ck1'. A yellow starburst icon is next to the 'Add' button.

3.6 Confirm the create table request.

The final step in the create table process is to confirm your request to create the CUSTOMERS table. In the **Create Table** window, click **Create**.

Note that you can review the SQL code that will be used to create the table by expanding the SQL section.



SQL

```
CREATE table "CUSTOMERS" (  
  "CUSTOMER_ID"    NUMBER(5,0) NOT NULL,  
  "CUSTOMER_NAME"  VARCHAR2(50) NOT NULL,  
  "ADDRESS"        VARCHAR2(50) NOT NULL,  
  "CITY"           VARCHAR2(50) NOT NULL,  
  "STATE_PROVINCE" VARCHAR2(50),  
  "COUNTRY"        VARCHAR2(50) NOT NULL,  
  "EMAIL"          VARCHAR2(50),  
  constraint "CUSTOMERS_PK" primary key ("CUSTOMER_ID")  
)  
/  
  
CREATE sequence "CUSTOMERS_SEQ"  
/  
  
CREATE trigger "BI_CUSTOMERS"  
  before insert on "CUSTOMERS"  
  for each row  
begin  
  if :NEW."CUSTOMER_ID" is null then  
    select "CUSTOMERS_SEQ".nextval into :NEW."CUSTOMER_ID"
```

3.7 Examine the new table.

The newly created table should look like the sample below.

DO NOT MAKE ANY OTHER CHANGES TO THIS TABLE AT THIS TIME.

CUSTOMERS

Create ▼

Table

Data

Indexes

Model

Constraints

Grants

Statistics

UI Defaults

Triggers

Dependencies

SQL

Add Column

Modify Column

Rename Column

Drop Column

Rename

Copy

Drop

Truncate

Create Lookup Table

Column Name	Data Type	Nullable	Default	Primary Key
CUSTOMER_ID	NUMBER(5,0)	No	-	1
CUSTOMER_NAME	VARCHAR2(50)	No	-	-
ADDRESS	VARCHAR2(50)	No	-	-
CITY	VARCHAR2(50)	No	-	-
STATE_PROVINCE	VARCHAR2(50)	Yes	-	-
COUNTRY	VARCHAR2(50)	No	-	-
EMAIL	VARCHAR2(50)	Yes	-	-

1 - 7

Step 4: Creating the ORDERS table

4.1 Review the ORDERS entity in the ERD and data model.

ORDERS	
pk	order_id
fk	customer_id
	order_date
	quantity
fk	item_id

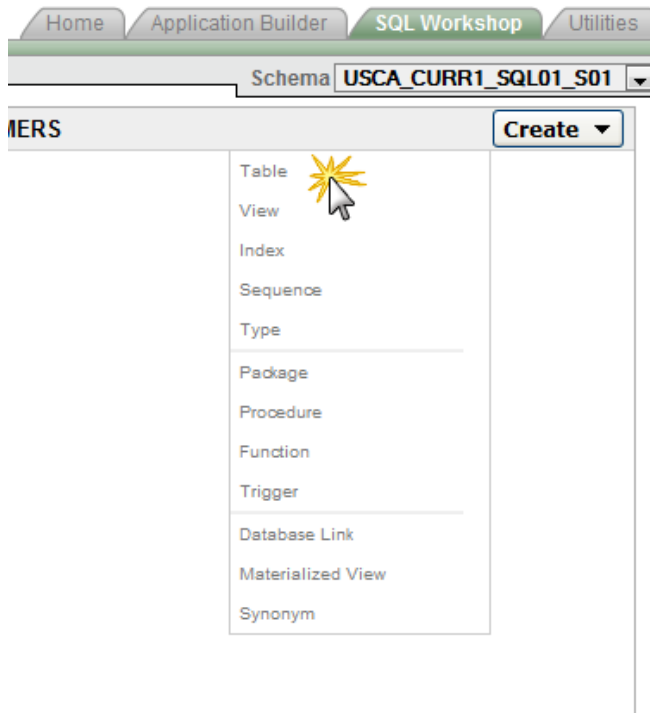
ORDERS	
#	order_id
*	order_date
*	quantity

The table description for the ORDERS table is as follows:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ORDER_ID	Number	-	5	0	1	-	-	-
	CUSTOMER_ID	Number	-	5	0	-	-	-	-
	ORDER_DATE	Date	7	-	-	-	-	-	-
	QUANTITY	Number	-	-	-	-	-	-	-
	ITEM_ID	Number	-	5	0	-	-	-	-
1 - 5									

4.2 Create the columns for the ORDERS table.

Click Table in the CREATE menu.



Part 1: Building Tables and Adding Constraints

Enter the following column definitions.

Create Table Cancel Next >

* Table Name ☐ Preserve Case

Column Name	Type	Precision	Scale	Not Null	Move
<input type="text" value="ORDER_ID"/>	<input type="text" value="NUMBER"/>	<input type="text" value="5"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/>	<input type="button" value="▼ ▲"/>
<input type="text" value="CUSTOMER_ID"/>	<input type="text" value="NUMBER"/>	<input type="text" value="5"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/>	<input type="button" value="▼ ▲"/>
<input type="text" value="ORDER_DATE"/>	<input type="text" value="DATE"/>			<input checked="" type="checkbox"/>	<input type="button" value="▼ ▲"/>
<input type="text" value="QUANTITY"/>	<input type="text" value="NUMBER"/>			<input checked="" type="checkbox"/>	<input type="button" value="▼ ▲"/>
<input type="text" value="ITEM_ID"/>	<input type="text" value="NUMBER"/>	<input type="text" value="5"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/>	<input type="button" value="▼ ▲"/>
<input type="text"/>	<input type="text" value="- Select Datatype -"/>				<input type="button" value="▼ ▲"/>
<input type="text"/>	<input type="text" value="- Select Datatype -"/>				<input type="button" value="▼ ▲"/>
<input type="text"/>	<input type="text" value="- Select Datatype -"/>				<input type="button" value="▼ ▲"/>

Add Column

4.3 Create the primary key for the ORDERS table.

Create a primary key for the ORDERS table using a new sequence. Use the default constraint and sequence names. Specify ORDER_ID as the primary key.

4.4 Skip the step for creating a foreign key for the ORDERS table.

There is a bug in version 2.2.1 of Oracle Application Express that does not allow you to

create a foreign key on a column with a number data type in the create table workflow. We will work around this problem by creating all of the foreign keys for the project after all of the tables are created.

4.5 Skip the step for creating a constraint for the ORDERS table.

Other than the foreign key constraints (which we will create later), there are no other constraints for this table. Click Next.

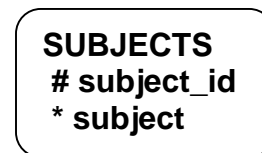
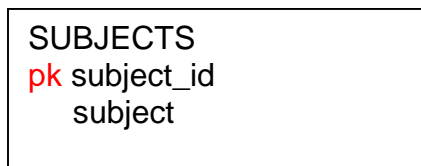
4.6 Confirm the create table request.

4.7 Examine the new table.

Column Name	Data Type	Nullable	Default	Primary Key
ORDER_ID	NUMBER(5,0)	No	-	1
CUSTOMER_ID	NUMBER(5,0)	No	-	-
ORDER_DATE	DATE	No	-	-
QUANTITY	NUMBER	No	-	-
ITEM_ID	NUMBER(5,0)	No	-	-
1 - 5				

Step 5: Creating the SUBJECTS table

5.1 Review the SUBJECTS entity in the ERD and data model.



The table description for the SUBJECTS table is as follows:

Object Type TABLE Object SUBJECTS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SUBJECTS	SUBJECT_ID	Number	-	5	0	1	-	-	-
	SUBJECT	Varchar2	50	-	-	-	-	-	-
1 - 2									

5.2 Create the columns for the SUBJECTS table.

Create Table dialog box showing the table name SUBJECTS and the columns SUBJECT_ID (NUMBER, 5, 0) and SUBJECT (VARCHAR2, 50). The Not Null checkbox is checked for both columns.

5.3 Create the primary key for the SUBJECTS table.

Create a primary key for the SUBJECTS table using a new sequence. Use the default constraint and sequence names. Specify SUBJECT_ID as the primary key.

5.4 Create a foreign key for the SUBJECTS table.

There are no foreign keys for the SUBJECTS table.

5.5 Create constraints for the SUBJECTS table.

Other than the foreign key constraint, there are no other constraints for this table. Click Next.

5.6 Confirm the create table request.

5.7 Examine the new table.

Column Name	Data Type	Nullable	Default	Primary Key
SUBJECT_ID	NUMBER(5,0)	No	-	1
SUBJECT	VARCHAR2(50)	No	-	-
				1 - 2

Step 6: Creating the PUBLISHERS table

6.1 Review the PUBLISHERS entity in the ERD and data model.



The table description for the PUBLISHERS table is as follows:

Object Type TABLE Object PUBLISHERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PUBLISHERS	PUBLISHER_ID	Number	-	5	0	1	-	-	-
	PUBLISHER	Varchar2	50	-	-	-	-	-	-
1 - 2									

6.2 Create the columns for the PUBLISHERS table.

The 'Create Table' dialog box shows the table name 'PUBLISHERS' and a 'Preserve Case' checkbox. Below, a table lists the columns to be created:

Column Name	Type	Precision	Scale	Not Null	Move
PUBLISHER_ID	NUMBER	5	0	<input checked="" type="checkbox"/>	▼ ▲
PUBLISHER	VARCHAR2		50	<input checked="" type="checkbox"/>	▼ ▲

6.3 Create the primary key for the PUBLISHERS table.

Create a primary key for the PUBLISHERS table using a new sequence. Use the default constraint and sequence names. Specify PUBLISHER_ID as the primary key.

6.4 Create a foreign key for the PUBLISHERS table.

There are no foreign keys for the PUBLISHERS table.

6.5 Create constraints for the PUBLISHERS table.

Other than the foreign key constraint, there are no other constraints for this table. Click Next.

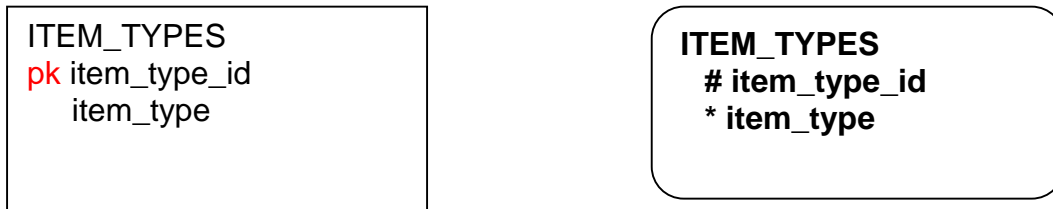
6.6 Confirm the create table request.

6.7 Examine the new table.

Column Name	Data Type	Nullable	Default	Primary Key
PUBLISHER_ID	NUMBER(5,0)	No	-	1
PUBLISHER	VARCHAR2(50)	No	-	-
				1 - 2

Step 7: Creating the ITEM_TYPES table

7.1 Review the ITEM_TYPES entity in the ERD and data model.



The table description for the ITEM_TYPES table is as follows:

Object Type	TABLE	Object	ITEM_TYPES						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ITEM_TYPES	ITEM_TYPE_ID	Number	-	5	0	1	-	-	-
	ITEM_TYPE	Varchar2	50	-	-	-	-	-	-
									1 - 2

7.2: Create the columns for the ITEM_TYPES table.

Create Table

Cancel Next >

* Table Name ITEM_TYPES ☐ Preserve Case

Column Name	Type	Precision	Scale	Not Null	Move
ITEM_TYPE_ID	NUMBER			<input checked="" type="checkbox"/>	▼ ▲
ITEM_TYPE	VARCHAR2		50	<input checked="" type="checkbox"/>	▼ ▲

7.3 Create the primary key for the ITEM_TYPES table.

Create a primary key for the ITEMS table using a new sequence. Use the default constraint and sequence names. Specify ITEM_ID as the primary key.

7.4 Create a foreign key for the ITEM_TYPES table.

There are no foreign keys for the ITEM_TYPES table.

7.5 Create constraints for the ITEM_TYPES table.

Other than the foreign key constraint, there are no other constraints for this table. Click Next.

7.6 Confirm the create table request.

7.7 Examine the new table.

Column Name	Data Type	Nullable	Default	Primary Key
ITEM_TYPE_ID	NUMBER(5,0)	No	-	1
ITEM_TYPE	VARCHAR2(50)	No	-	-
				1 - 2

Step 8: Creating the ITEMS table

8.1 Review the ITEMS entity in the ERD and data model.

ITEMS	
pk	item_id
	isbn
	title
	author
fk	publisher_id
fk	subject_id
fk	item_type_id
	wholesale_cost
	retail_price

ITEMS	
#	item_id
*	isbn
*	title
*	author
*	wholesale_cost
*	retail_price

The table description for the ITEMS table is as follows:

Object Type TABLE Object ITEMS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ITEMS	ITEM_ID	Number	-	5	0	1	-	-	-
	ISBN	Varchar2	50	-	-	-	-	-	-
	TITLE	Varchar2	50	-	-	-	-	-	-
	AUTHOR	Varchar2	50	-	-	-	-	-	-
	PUBLISHER_ID	Number	-	5	0	-	-	-	-
	SUBJECT_ID	Number	-	5	0	-	-	-	-
	ITEM_TYPE_ID	Number	-	5	0	-	-	-	-
	WHOLESALE_COST	Number	-	-	-	-	-	-	-
	RETAIL_PRICE	Number	-	-	-	-	-	-	-

1 - 9

Step 8.2: Create the columns for the ITEMS table.

Note: if you run out of textboxes, click Add Column. Click Next to continue.

Create Table
Cancel
Next >

* Table Name ITEMS
☐ Preserve Case

Column Name	Type	Precision	Scale	Not Null	Move
ITEM_ID	NUMBER	5	0	<input checked="" type="checkbox"/>	▼ ▲
ISBN	VARCHAR2		50	<input checked="" type="checkbox"/>	▼ ▲
TITLE	VARCHAR2		50	<input checked="" type="checkbox"/>	▼ ▲
AUTHOR	VARCHAR2		50	<input checked="" type="checkbox"/>	▼ ▲
PUBLISHER_ID	NUMBER	5	0	<input checked="" type="checkbox"/>	▼ ▲
SUBJECT_ID	NUMBER	5	0	<input checked="" type="checkbox"/>	▼ ▲
ITEM_TYPE_ID	NUMBER	5	0	<input checked="" type="checkbox"/>	▼ ▲
WHOLESALE_COST	NUMBER			<input checked="" type="checkbox"/>	▼ ▲
RETAIL_PRICE	NUMBER			<input checked="" type="checkbox"/>	▼ ▲

Add Column

8.3 Create the primary key for the ITEMS table.

Create a primary key for the ITEMS table using a new sequence. Use the default constraint and sequence names. Specify ITEM_ID as the primary key.

8.4 Create a foreign key for the ITEMS table.

There are three foreign keys for the ITEMS table. We will create these foreign keys in the next step.

8.5 Create constraints for the ITEMS table.

Other than the foreign key constraint, there are no other constraints for this table. Click Next.

8.6 Confirm the create table request.

8.7 Examine the new table.

Column Name	Data Type	Nullable	Default	Primary Key
ITEM_ID	NUMBER(5,0)	No	-	1
ISBN	VARCHAR2(50)	No	-	-
TITLE	VARCHAR2(50)	No	-	-
AUTHOR	VARCHAR2(50)	No	-	-
PUBLISHER_ID	NUMBER(5,0)	No	-	-
SUBJECT_ID	NUMBER(5,0)	No	-	-
ITEM_TYPE_ID	NUMBER(5,0)	No	-	-
WHOLESALE_COST	NUMBER	No	-	-
RETAIL_PRICE	NUMBER	No	-	-
				1 - 9

Summary

In Steps 1 through 8, you created six tables: CUSTOMERS, ORDERS, SUBJECTS, PUBLISHERS, ITEM_TYPES and ITEMS.

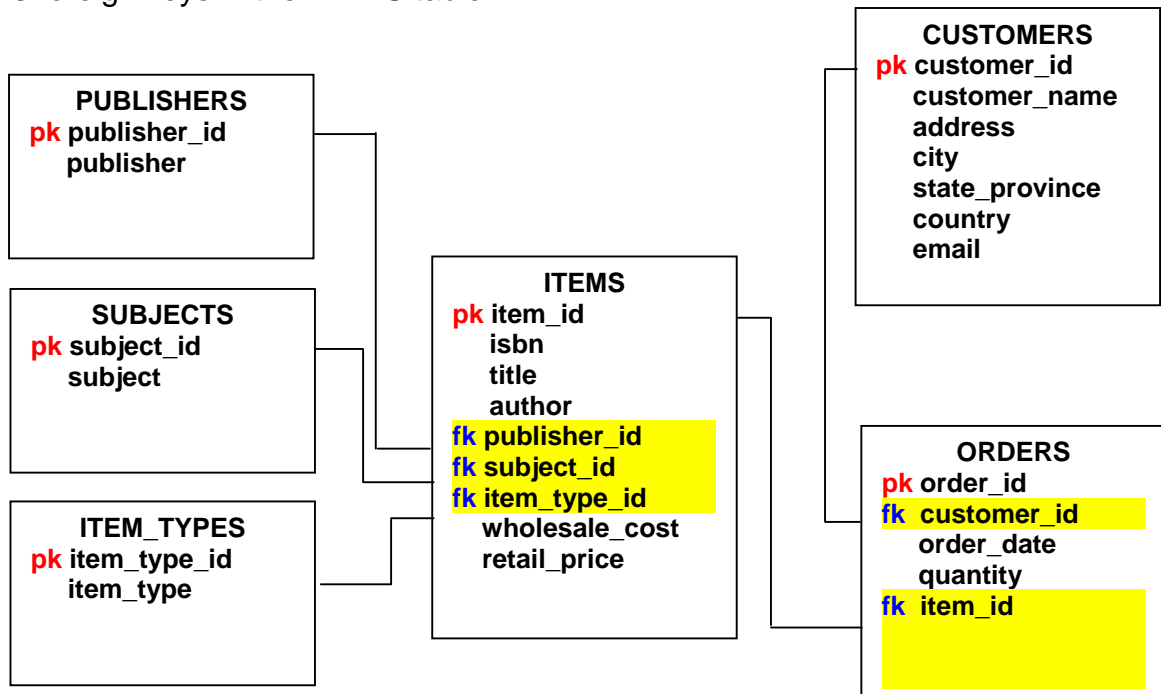
In the next steps, you will add foreign key constraints to the ORDERS and ITEMS tables.

Step 9: Creating Foreign Keys for the ORDERS table

Depending on the order in which you create your tables, you may or may not be able to create constraints using the Create Table wizard. In the following steps, you will manually create foreign key constraints.

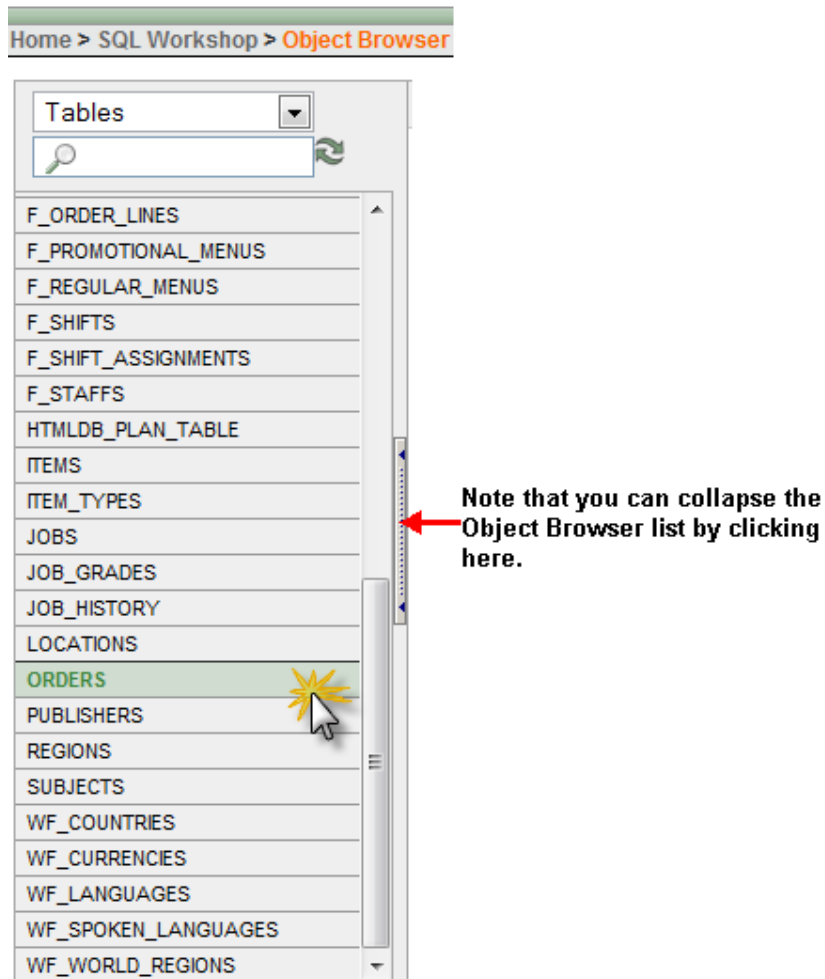
A foreign key establishes a relationship between a column or columns in one table and a primary or unique key in another table.

According to the schema diagram, there are 2 foreign keys in the ORDERS table and 3 foreign keys in the ITEMS table.



Part 1: Building Tables and Adding Constraints

9.1 Select the ORDERS table in the Object Browser window.



9.2 Create the ORDERS_CUSTOMER_ID_FK constraint.

Table Data Indexes Model Constraints Grants Statistics UI Defaults Triggers Dependencies SQL									
Create	Drop	Enable	Disable						
Constraint	Type	Search Condition	Related Constraint	Delete Rule	Status	Last Change	Index	Invalid	
ITEMS_PK	P	-	-	-	ENABLED	02-APR-07	ITEMS_PK	-	
SYS_C0012763604	C	"ITEM_ID" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	
SYS_C0012763605	C	"ISBN" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	
SYS_C0012763606	C	"TITLE" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	
SYS_C0012763607	C	"AUTHOR" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	
SYS_C0012763608	C	"PUBLISHER_ID" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	
SYS_C0012763609	C	"SUBJECT_ID" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	
SYS_C0012763610	C	"WHOLESALE_COST" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	
SYS_C0012763611	C	"RETAIL_PRICE" IS NOT NULL	-	-	ENABLED	02-APR-07	-	-	

1 - 9

A. Click **Constraints**.

B. In the **Constraints** window, click **Create**.

Part 1: Building Tables and Adding Constraints

The screenshot shows the 'Add Constraint' dialog box. The 'Schema' is 'USCA_CURR1_SQL01_S01' and the 'Table' is 'ORDERS'. The 'Constraint Name' is 'ORDERS_CUSTOMER_ID_FK'. The 'Constraint Type' is 'Foreign Key'. The 'Foreign Key Column(s)' is 'CUSTOMER_ID'. The 'Reference Table Name' is 'CUSTOMERS' and the 'Reference Table Column List' is 'CUSTOMER_ID'. The 'Next >' button is highlighted.

In the Add Constraint window follow these steps:

- C. Enter ITEMS_PUBLISHER_ID_FK in the **Constraint Name** textbox.
- D. Specify Foreign Key in the **Constraint Type** drop down menu.
- E. Select Customer_ID as the **Foreign Key Column**.
- F. Specify Customers in the **Reference Table Name** drop down menu.
- G. Select Customer_ID in the **Reference Table Column List**.
- H. Click Next.

The screenshot shows the 'Please confirm your request.' dialog box. The 'Schema' is 'USCA_CURR1_SQL01_S01', the 'Object' is 'ORDERS', and the 'Action' is 'add constraint ORDERS_CUSTOMER_ID_FK'. The 'Finish' button is highlighted.

- I. In the **Confirmation** window, click **Finish**.

9.3 Create the ORDERS_ITEM_ID_FK constraint.

Add Constraint [Cancel] [Next >]

Schema: **USCA_CURR1_SQL01_S01**
Table: **ORDERS**

* Constraint Name: **ORDERS_ITEM_ID_FK**

☐ Preserve Case

Constraint Type: **Foreign Key** ☐ On Delete Cascade

* Foreign Key Column(s):
ORDER_ID
CUSTOMER_ID
ORDER_DATE
QUANTITY
ITEM_ID

* Reference Table Name: **ITEMS**

* Reference Table Column List:
AUTHOR
ISBN
ITEM_ID
ITEM_TYPE_ID
PUBLISHER_ID

9.4 Review the new constraint information for the ORDERS table.

Constraint	Type	Search Condition	Related Constraint	Delete Rule	Status
ORDERS_CUSTOMER_ID_FK	R	-	USCA_CURR1_SQL01_S01.CUSTOMERS.CUSTOMERS_PK	NO ACTION	ENABLED
ORDERS_ITEM_ID_FK	R	-	USCA_CURR1_SQL01_S01.ITEMS.ITEMS_PK	NO ACTION	ENABLED
ORDERS_PK	P	-	-	-	ENABLED

Step 10: Creating Foreign Keys for the ITEMS table

10.1 Select the ITEMS table in the Object Browser window.

10.2 Create the ITEMS_PUBLISHER_ID_FK constraint.

Constraint Name: ITEMS_PUBLISHER_ID_FK
Constraint Type: Foreign Key
Foreign Key Column: PUBLISHER_ID
Reference Table Name: PUBLISHERS
Reference Table Column List: PUBLISHER_ID

10.3 Create the ITEMS_SUBJECT_ID_FK constraint.

Constraint Name: ITEMS_SUBJECT_ID_FK
Constraint Type: Foreign Key
Foreign Key Column: SUBJECT_ID
Reference Table Name: SUBJECTS
Reference Table Column List: SUBJECT_ID

10.4 Create the ITEMS_ITEM_TYPE_ID_FK constraint.

Constraint Name: ITEMS_ITEM_TYPE_ID_FK
Constraint Type: Foreign Key
Foreign Key Column: ITEM_TYPE_ID
Reference Table Name: ITEM_TYPES
Reference Table Column List: ITEM_TYPE_ID

10.5 Review the new constraint information.

Constraint	Type	Search Condition	Related Constraint	Delete Rule	Status
ITEMS_ITEM_TYPE_ID_FK	R	-	USCA_CURR1_SQL01_S01.ITEM_TYPES.ITEM_TYPES_PK	NO ACTION	ENABLED
ITEMS_PK	P	-	-	-	ENABLED
ITEMS_PUBLISHER_ID_FK	R	-	USCA_CURR1_SQL01_S01.PUBLISHERS.PUBLISHERS_PK	NO ACTION	ENABLED
ITEMS_SUBJECT_ID_FK	R	-	USCA_CURR1_SQL01_S01.SUBJECTS.SUBJECTS_PK	NO ACTION	ENABLED