



Guided Exercise 2.1: Working with projects in your workspace

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Overview

In this Guided Exercise, you will first import an OpenEdge project named Server. Then you will create an OpenEdge project called Client and add an ABL procedure to it. Then, you will start a Database Server and configure the Server project to connect to the database. Finally, you will modify PROPATH for the Client project to use resources in the Server project.

Important: You must complete this Guided Exercise to perform subsequent Guided Exercises in this course.

The exercise steps take approximately 30 minutes to complete.

Before you begin

Before you begin this Guided Exercise, you must set up your exercise environment, if you have not done so already. See the Before you begin module for details.

Location of files:

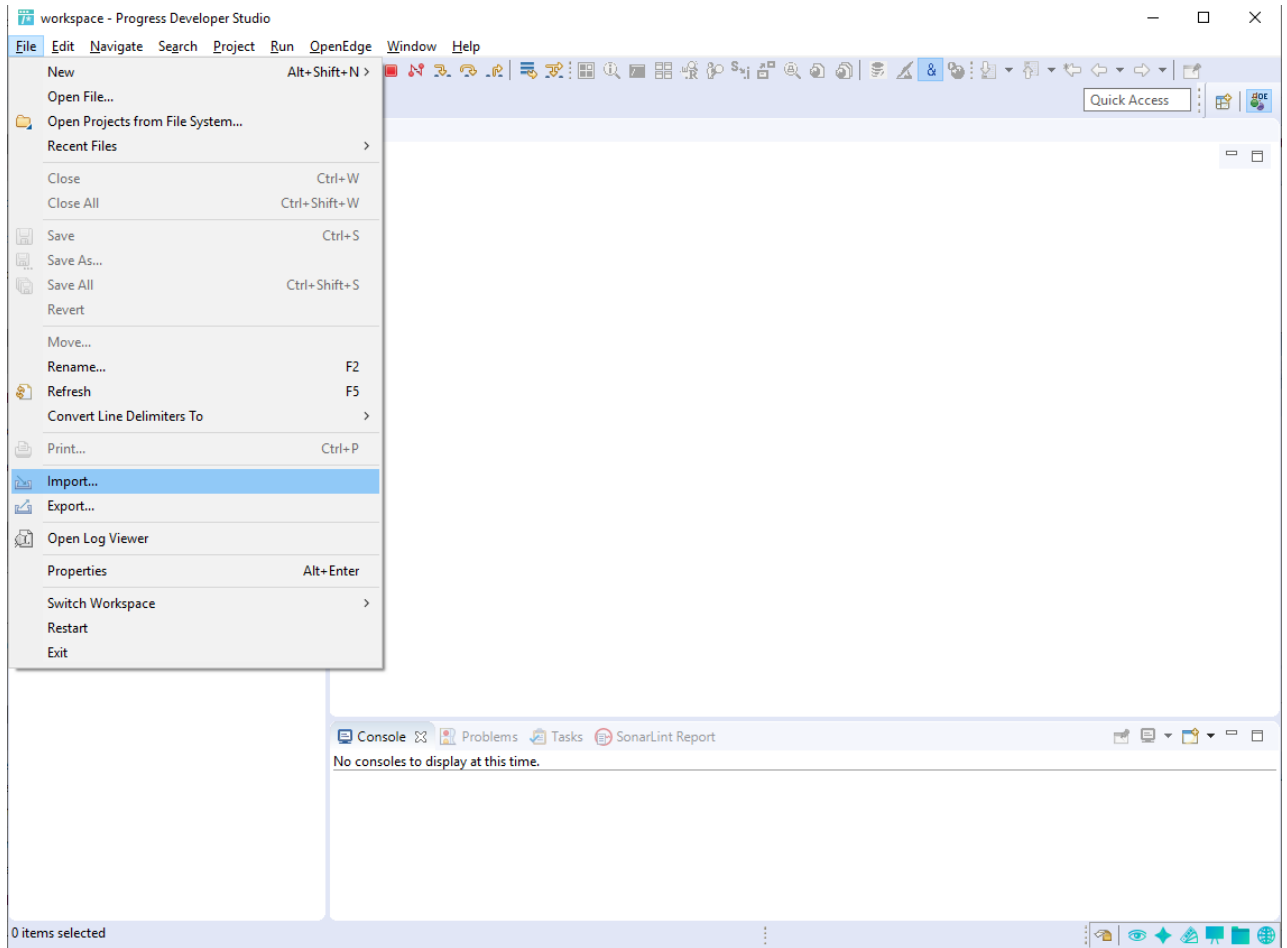
Exercise files: `C:\progress_education\openedge\DeveloperStudio\Exercise.`

Part 1—Importing an OpenEdge project

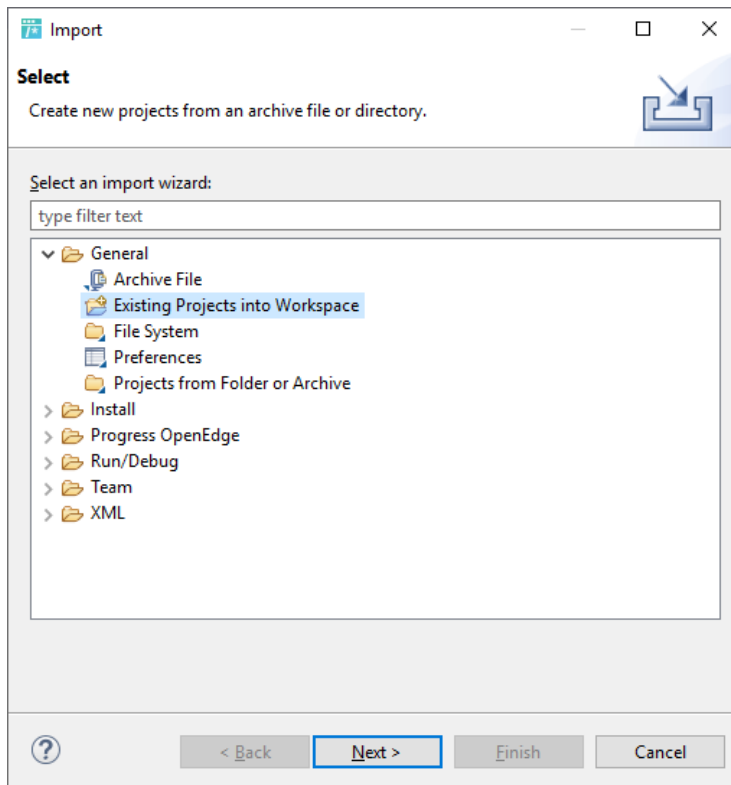
You will now import an existing project called **Server**.

1. Follow these steps to import the **Server** project.:

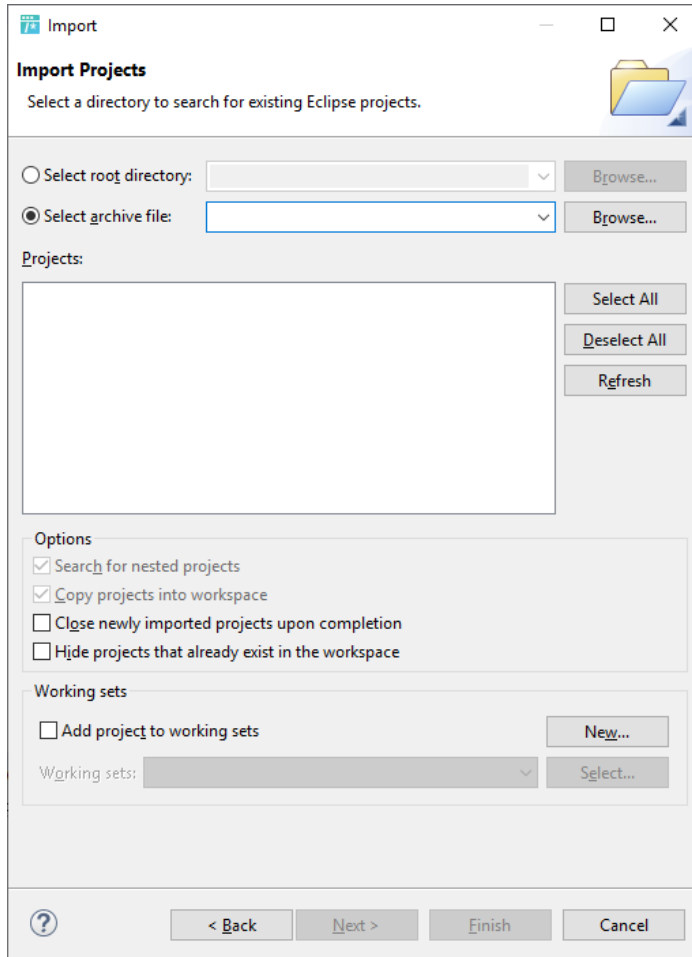
a. Select **File > Import...**



b. Select **General > Existing Projects into Workspace**. And click **Next**.



c. Select **Select archive file.**



The image shows the 'Import Projects' dialog box in Eclipse. The title bar says 'Import'. The main heading is 'Import Projects' with a subtitle 'Select a directory to search for existing Eclipse projects.' and a folder icon. There are two radio buttons: 'Select root directory:' and 'Select archive file:'. The 'Select archive file:' option is selected. Both have a text field and a 'Browse...' button. Below is a 'Projects:' section with an empty list box and buttons for 'Select All', 'Deselect All', and 'Refresh'. The 'Options' section has four checkboxes: 'Search for nested projects' (checked), 'Copy projects into workspace' (checked), 'Close newly imported projects upon completion' (unchecked), and 'Hide projects that already exist in the workspace' (unchecked). The 'Working sets' section has an unchecked checkbox 'Add project to working sets', a 'New...' button, a 'Working sets:' dropdown menu, and a 'Select...' button. At the bottom are buttons for '?', '< Back', 'Next >', 'Finish', and 'Cancel'.

Import

Import Projects
Select a directory to search for existing Eclipse projects.

☐ Select root directory:

☒ Select archive file:

Projects:

Options

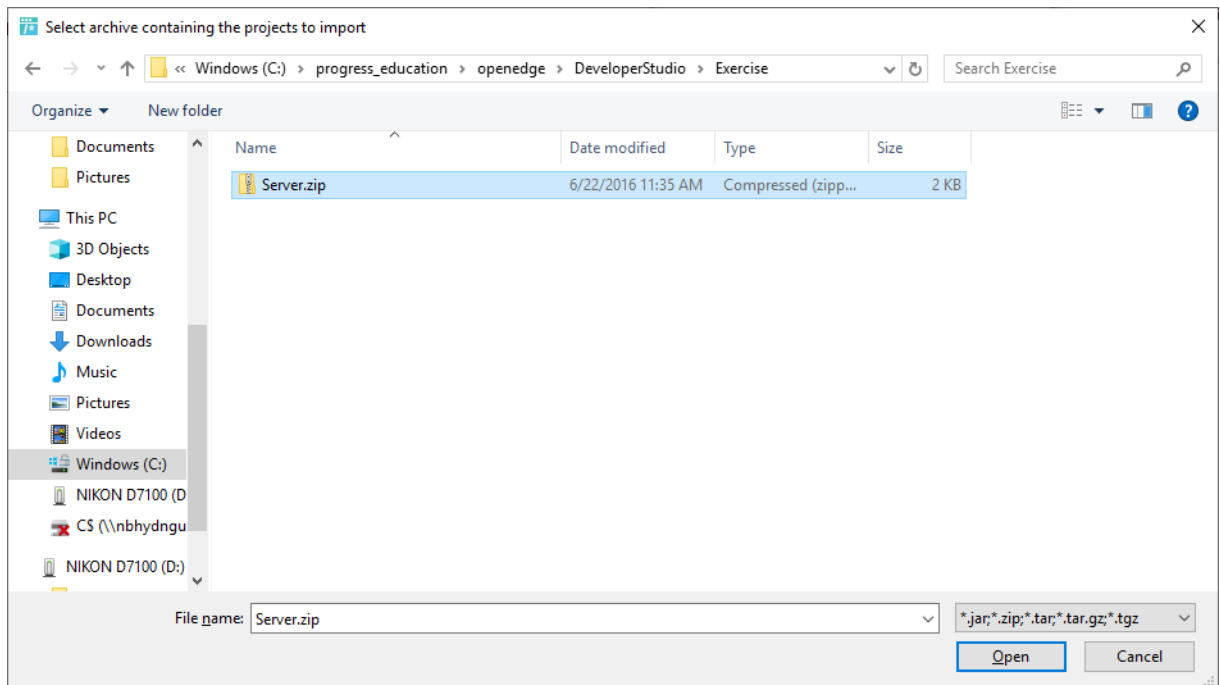
☒ Search for nested projects
☒ Copy projects into workspace
☐ Close newly imported projects upon completion
☐ Hide projects that already exist in the workspace

Working sets

☐ Add project to working sets
Working sets:

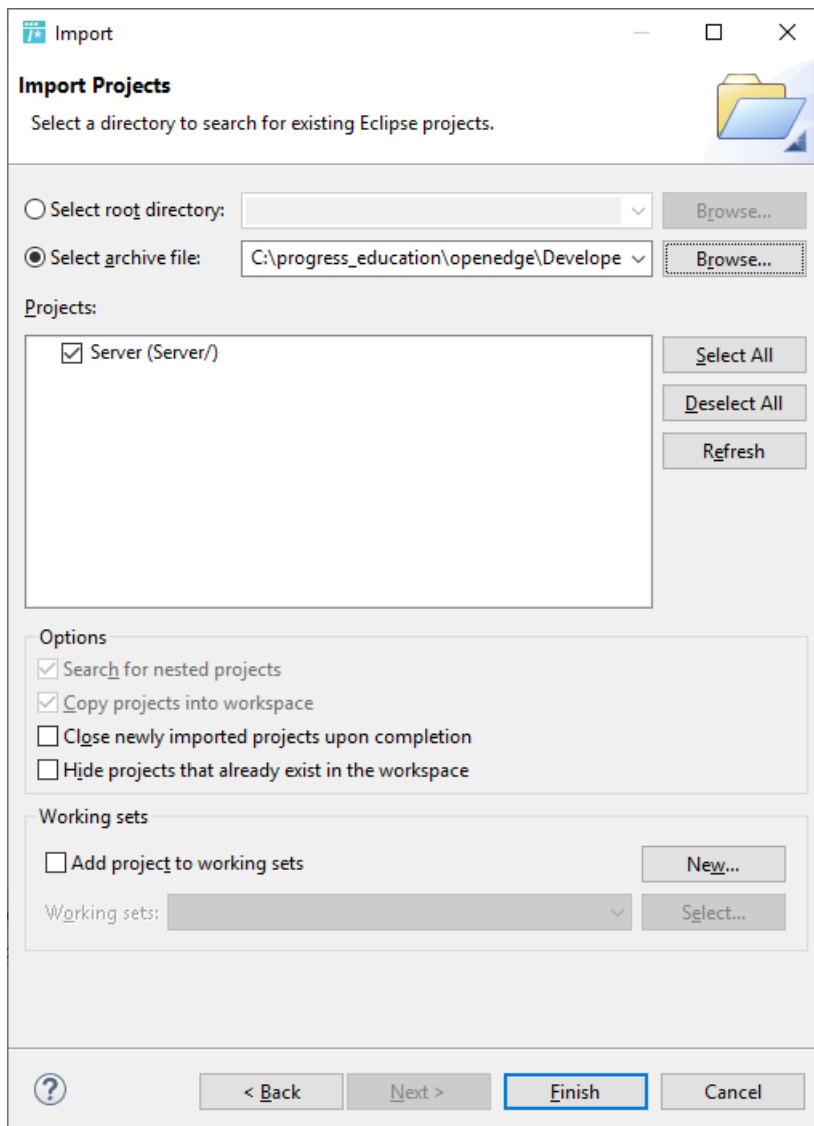
? < Back Next > Finish Cancel

- d. Click the browse button and navigate to `C:\progress_education\openedge\DeveloperStudio\Exercise` and select **Server.zip**.
Click **Open**.



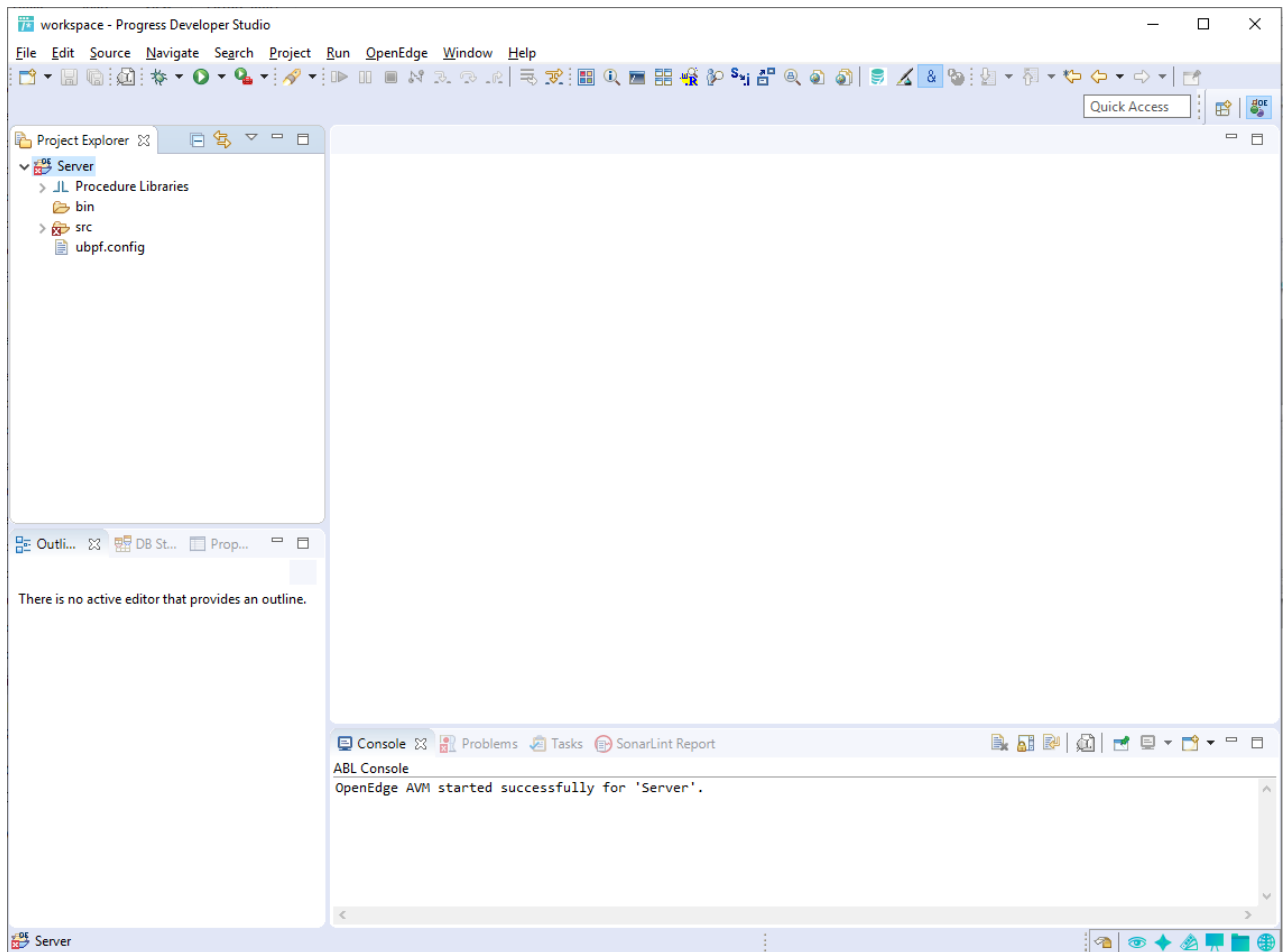
e. Select **Server** in the Projects box.

Click **Finish**.

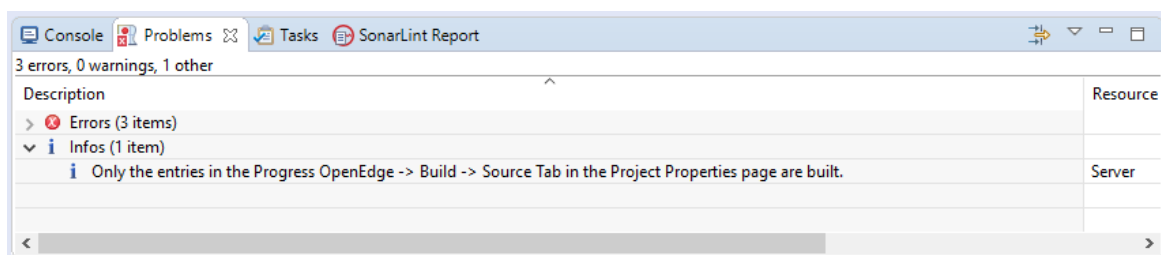


- When you complete the import, you will see the imported project in your workspace and see that an AVM for the **Server** project has started.

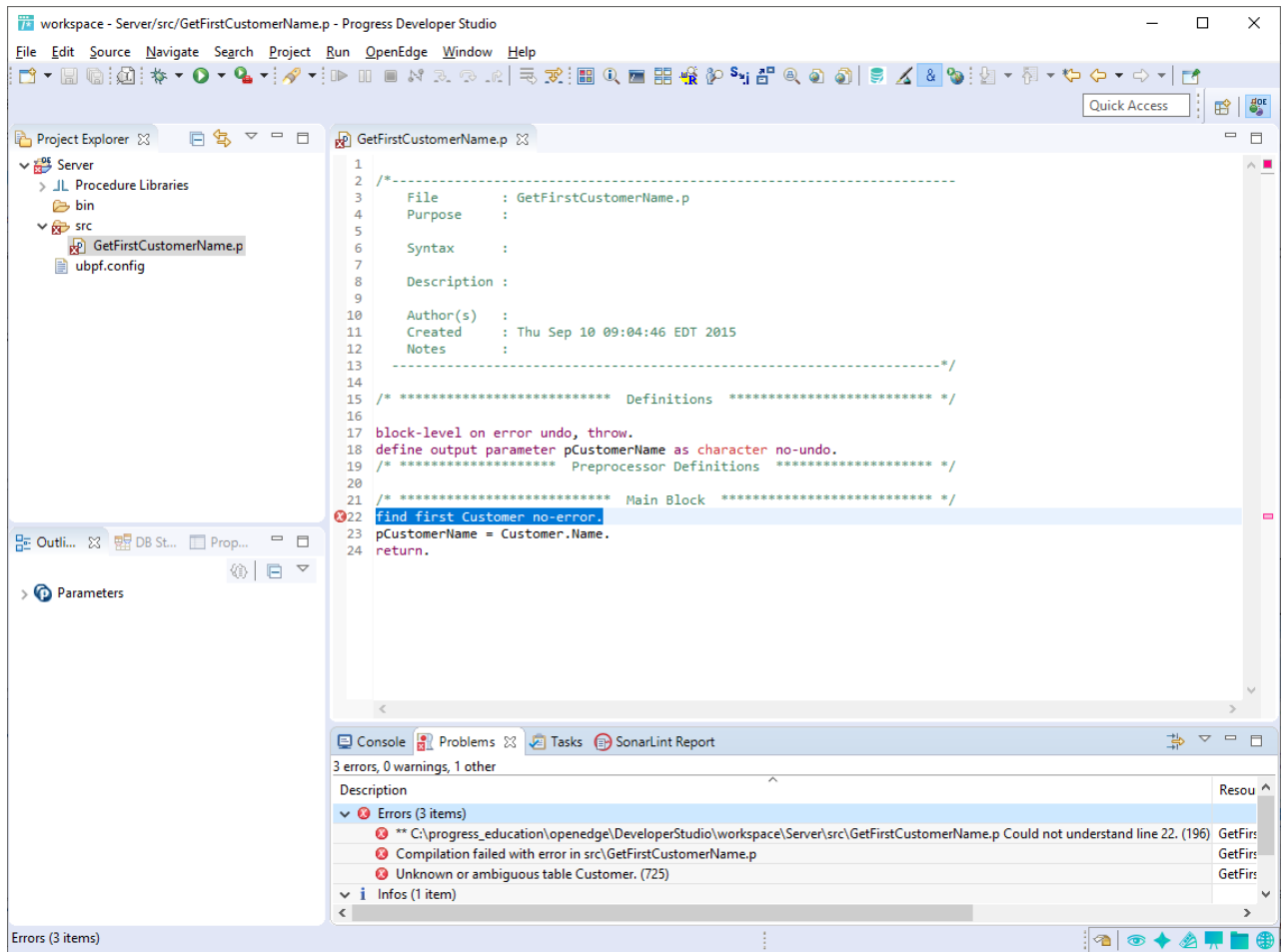
There will be errors (red “X”) in the code for this project. This is because this project requires a connection to the database.



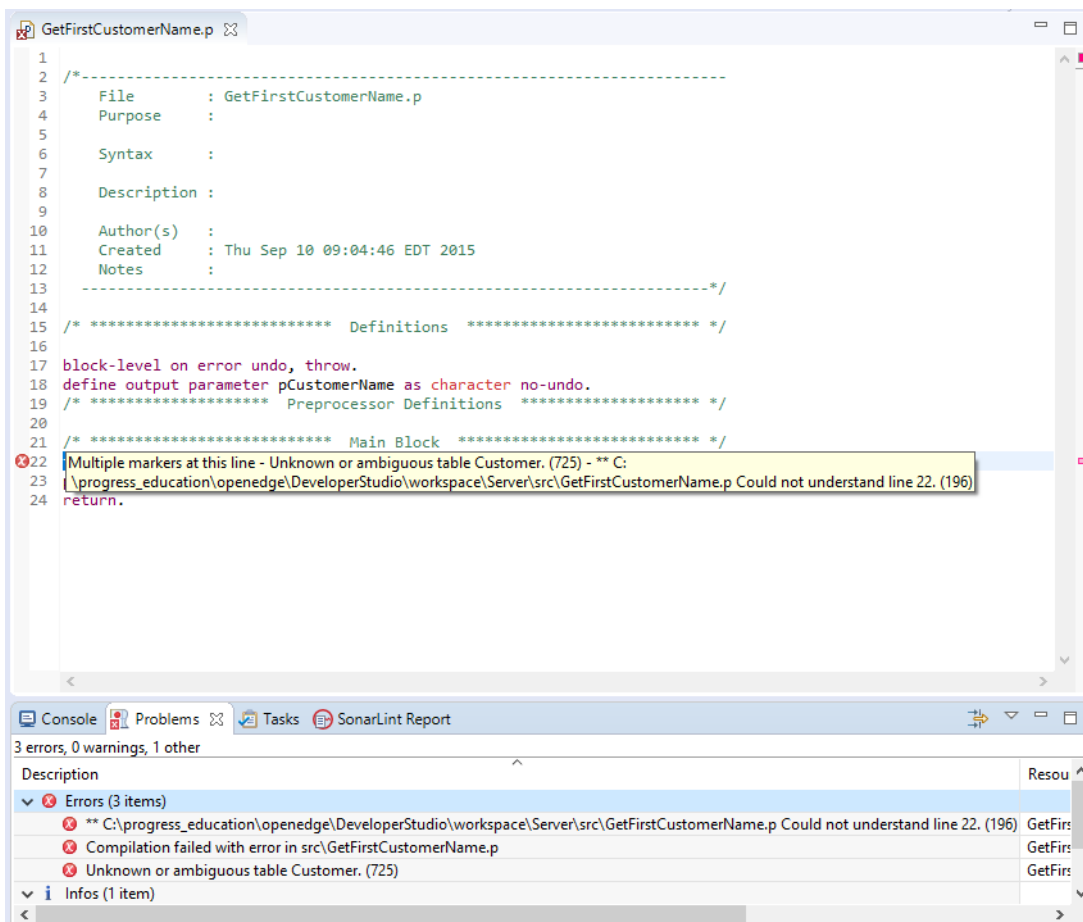
- Click the **Problems** tab in the lower part of the window. This view lists all compilation errors for the workspace when it was recompiled. You can hover your mouse pointer over the errors to see their details.



4. Double-click any error in the Problems view. It opens the corresponding file in OpenEdge Editor.

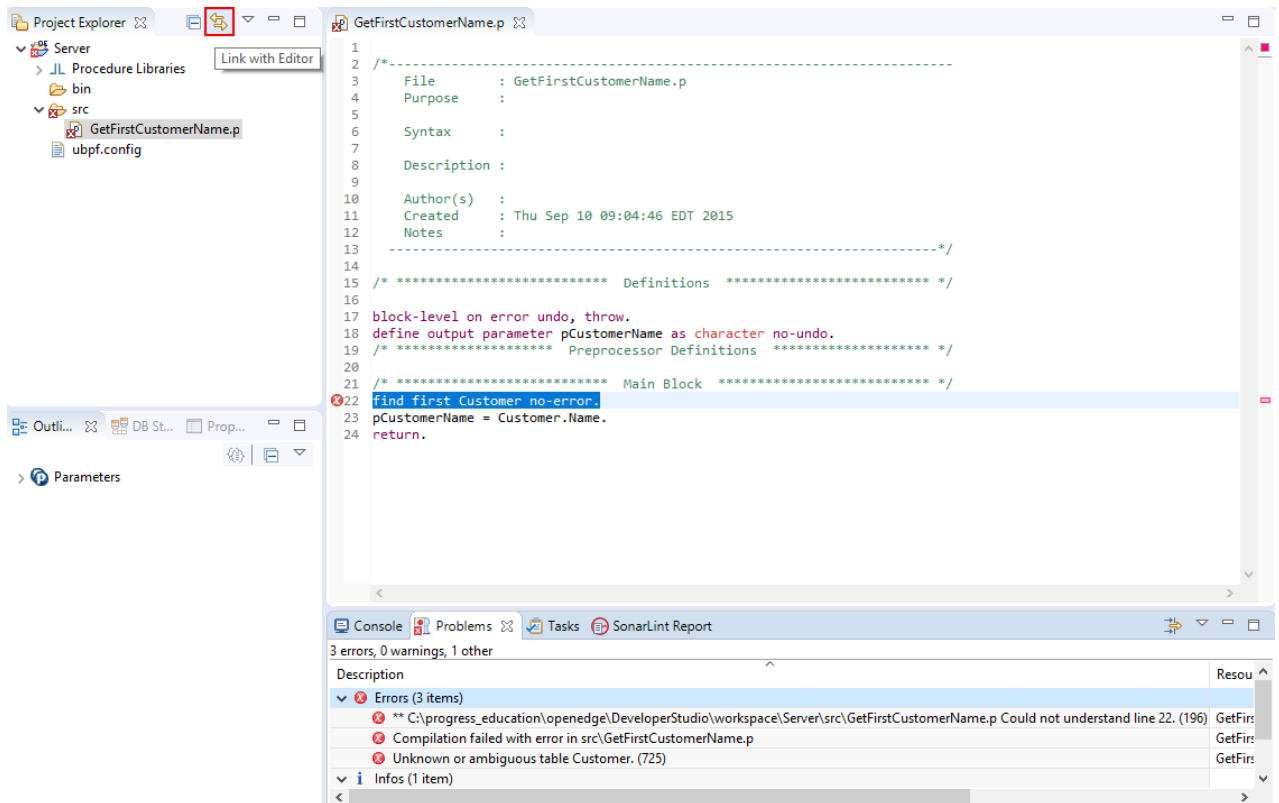


5. If you hover your mouse pointer over the red “X” to the left of the line with the error, the details of the error are also shown in OpenEdge Editor.

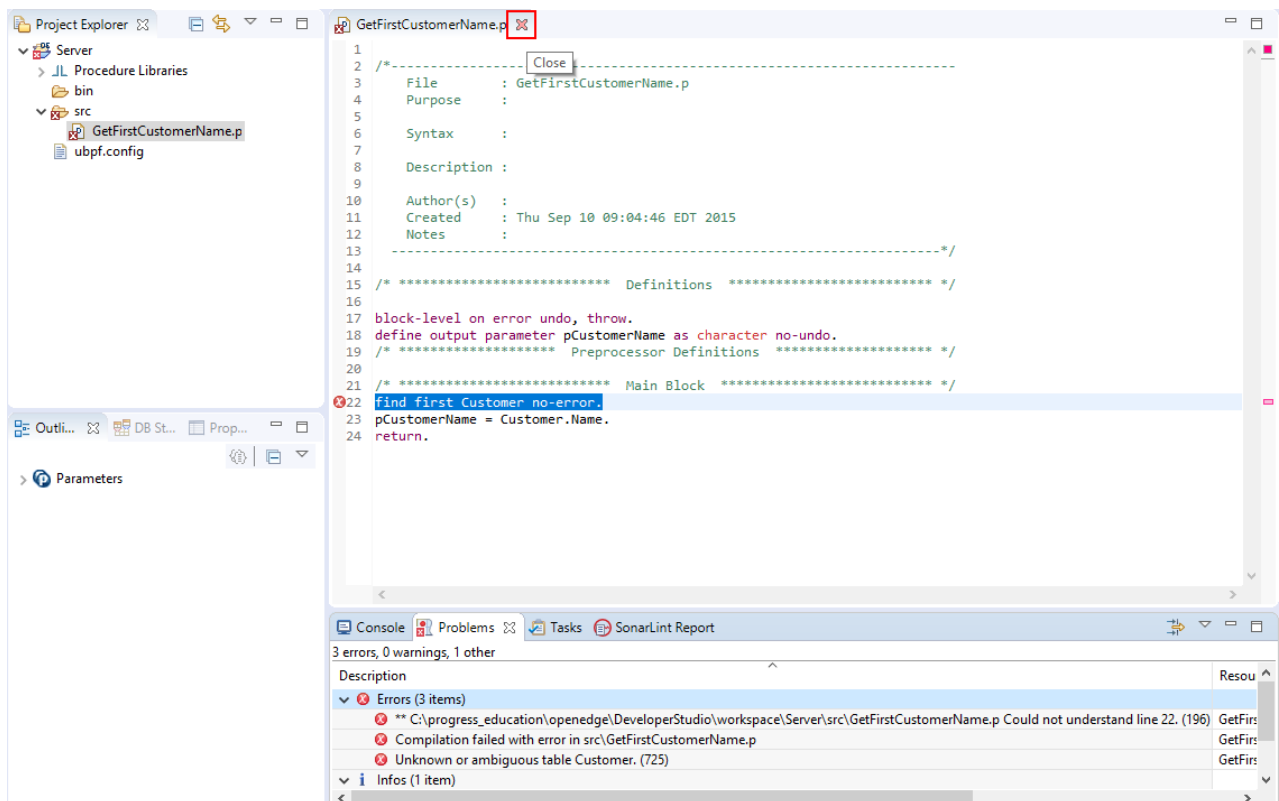


You will correct this error later in this Guided Exercise.

- Set your workspace so that whatever file you currently have selected in OpenEdge Editor will be selected in Project Explorer by selecting the Link with Editor icon in Project Explorer:



- Close the procedure file, **GetFirstCustomerName.p**, by clicking the “X” in the tab for the file.



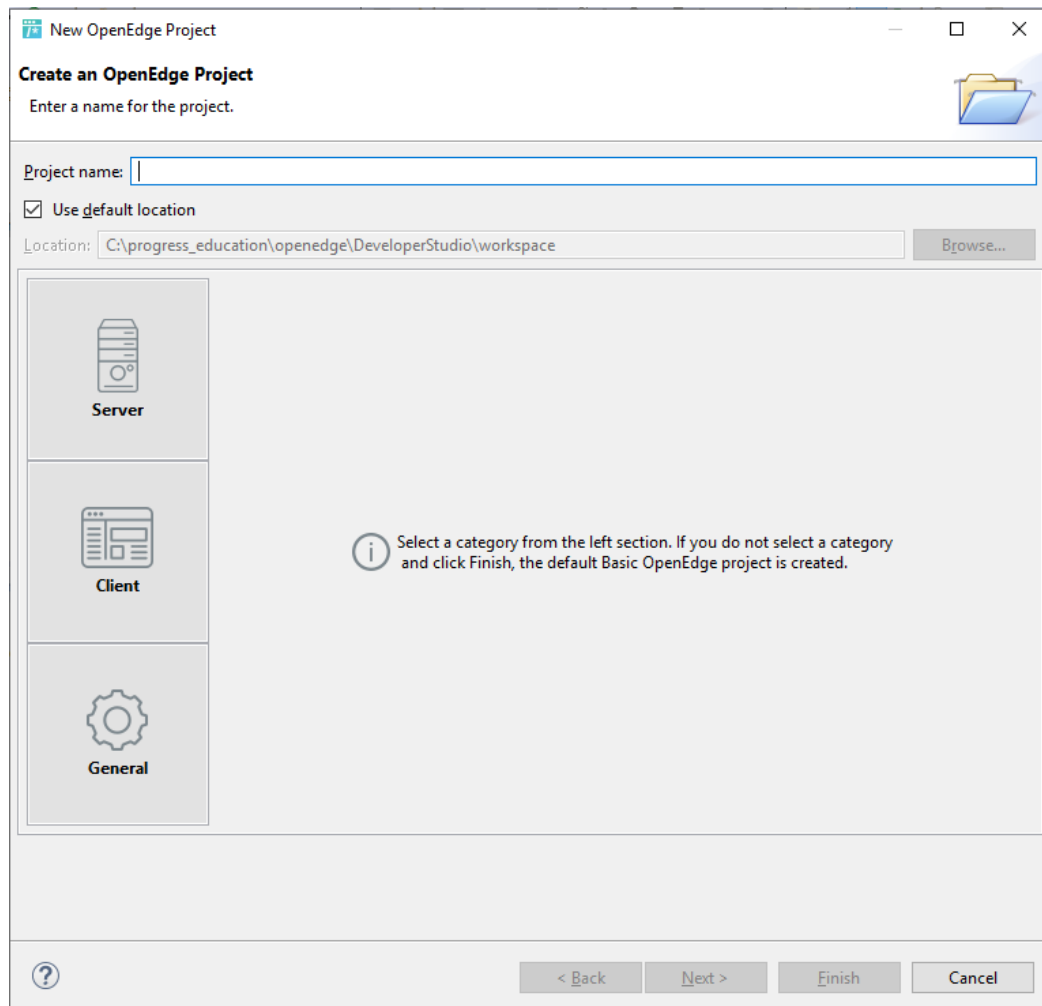
Part 2—Creating a new project and importing a file

Now you will create a project for the client side of the sample application. Then you will import a file into the project you create.

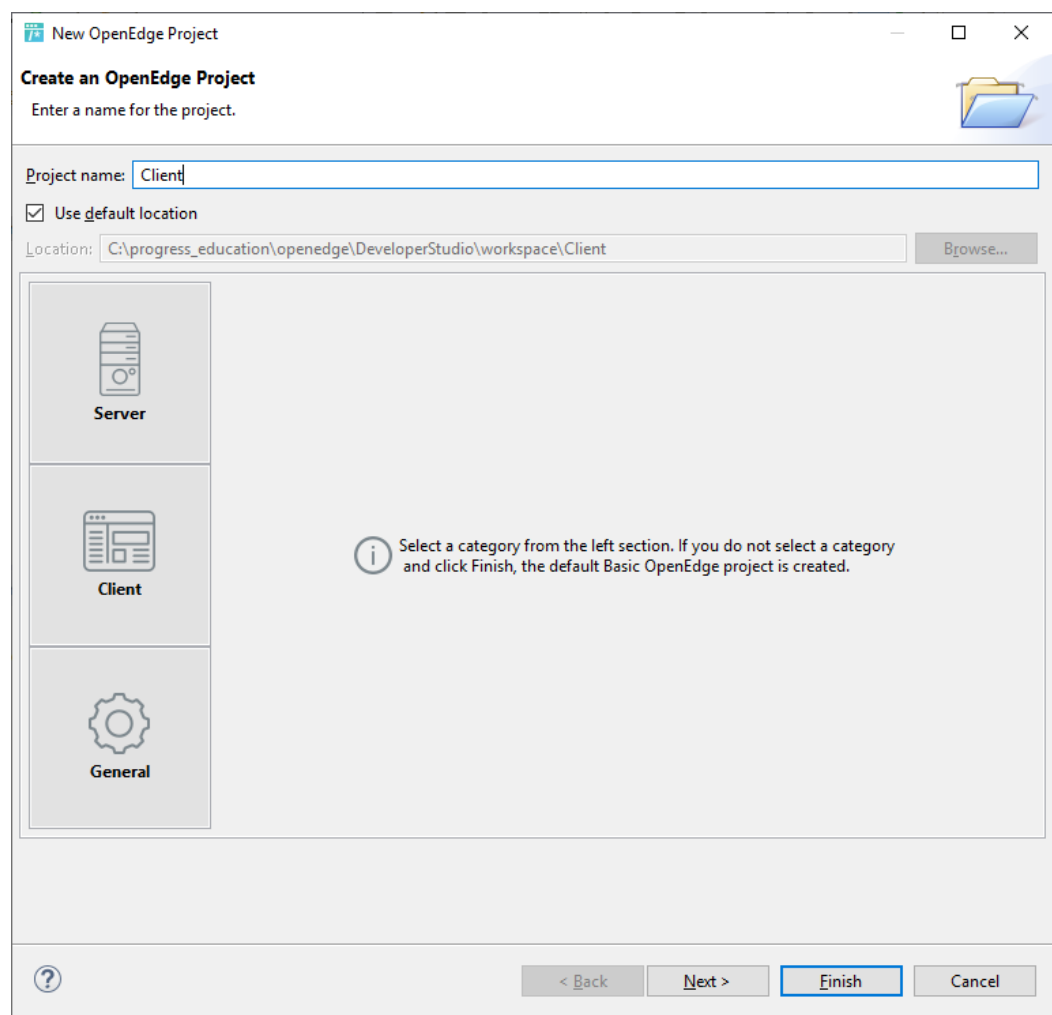
1. Create an OpenEdge project with this information:

- a. Name: **Client**
- b. Ensure 'Use default location' is checked, which is the workspace folder.
- c. Source and r-code directories will be named **src** and **bin**.
 - a. Navigate to **File > New**.
 - b. Notice that in Developer Studio you can create a number of resources that are OpenEdge-specific for ABL development tasks. In this case, select **OpenEdge Project**.
 - c. Notice that you can create server, client, or general OpenEdge projects. Each type of OpenEdge project contains its own specific facets. Here, create a General project.

Notice also that when you create a project, Developer Studio sets the location of the project to the same location as the workspace.



- d. Enter **Client** as the project name and click the **General** icon to create an **OpenEdge Basic** project. Click **Next**.



New OpenEdge Project

Create an OpenEdge Project

Enter a name for the project.

Project name: Client

☒ Use default location

Location: C:\progress_education\openedge\DeveloperStudio\workspace\Client

Browse...

Server

Client

General

Create a project specialized for OpenEdge development.

☒ OpenEdge Basic

☐ ABLUnit

☐ Custom <custom>

Description:

Select to create a basic OpenEdge project without specialized properties.

?

< Back

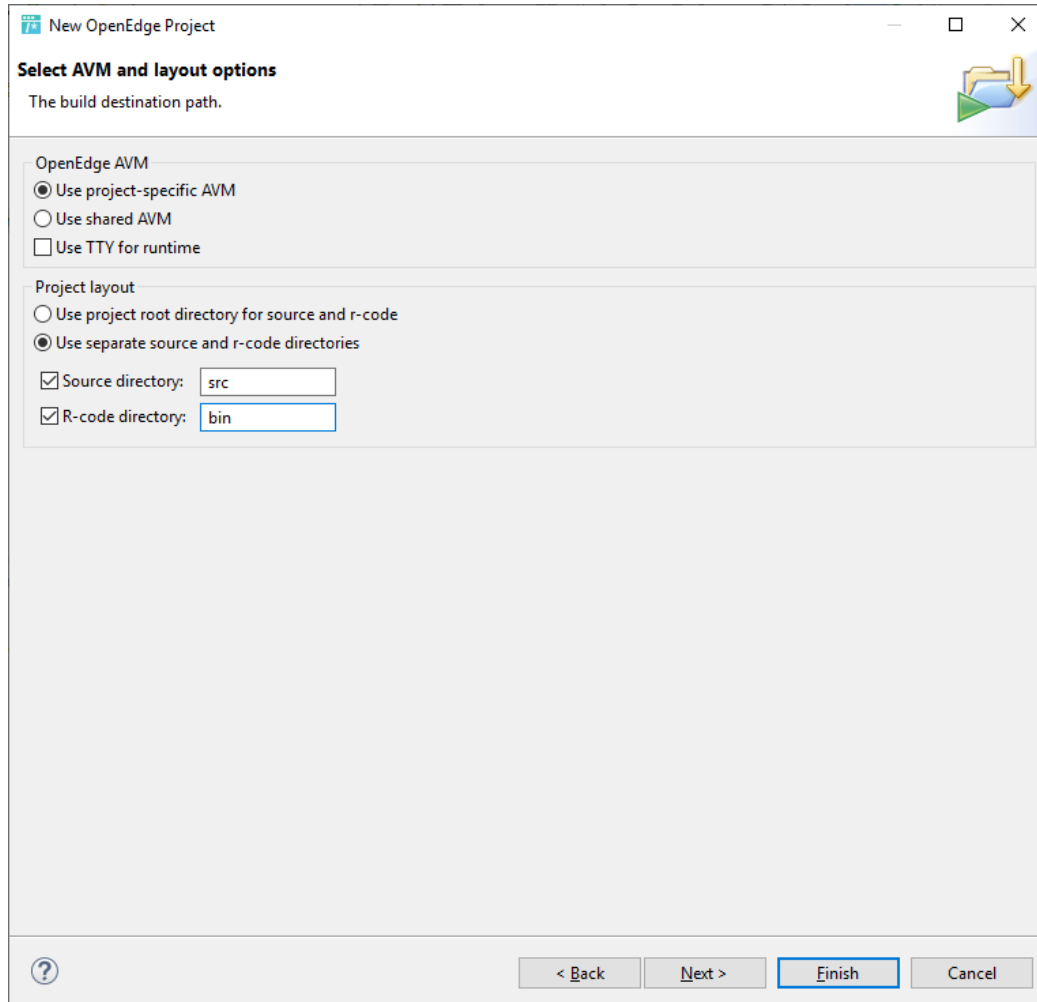
Next >

Finish

Cancel

- e. Next, specify **Use project-specific AVM** and **Use separate source and r-code directories** and then type **src** in the **Source directory** and **bin** in the **R-code directory** field.

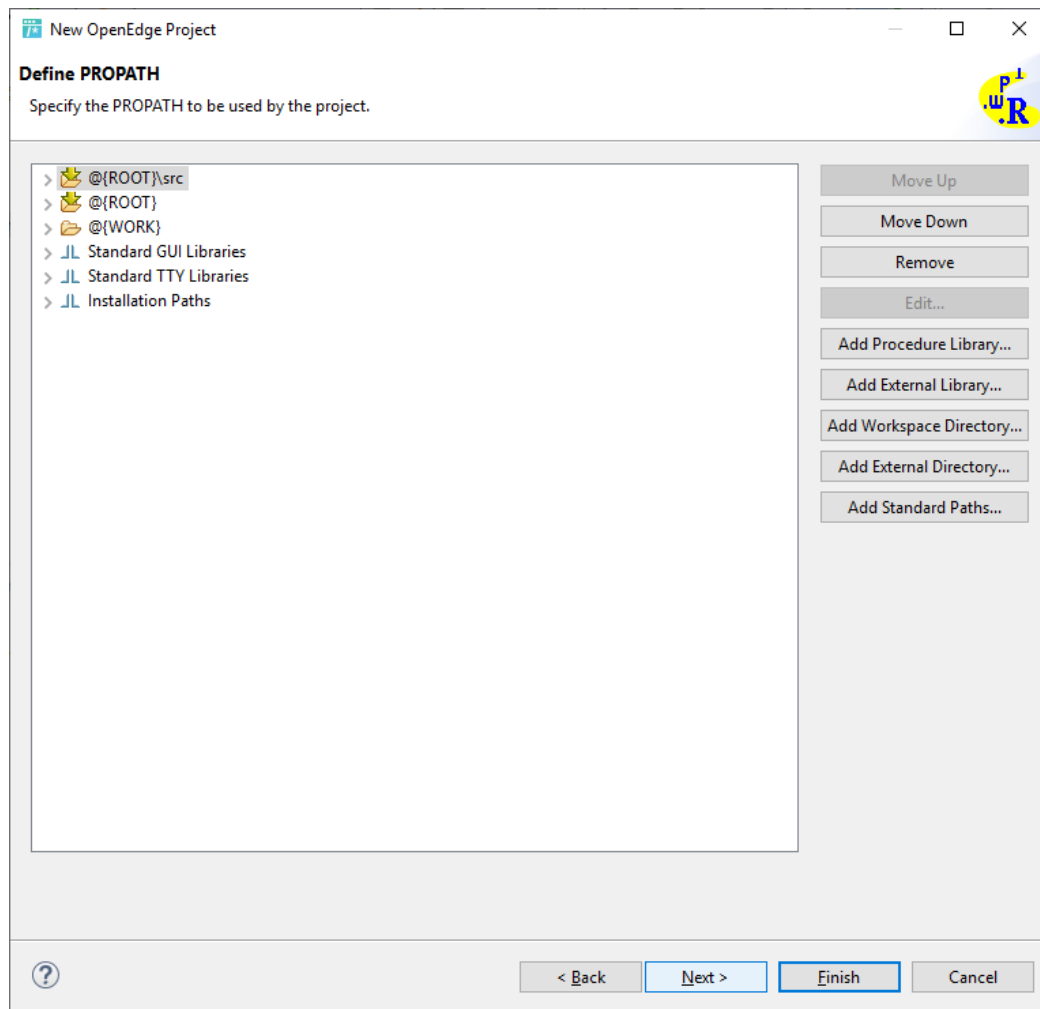
Click **Next**.



The screenshot shows the 'New OpenEdge Project' dialog box. The title bar reads 'New OpenEdge Project'. Below the title bar, the section 'Select AVM and layout options' is displayed, with the subtitle 'The build destination path.' and a folder icon with a green arrow. The dialog is divided into two main sections: 'OpenEdge AVM' and 'Project layout'. In the 'OpenEdge AVM' section, the radio button for 'Use project-specific AVM' is selected, while 'Use shared AVM' and 'Use TTY for runtime' are unselected. In the 'Project layout' section, the radio button for 'Use separate source and r-code directories' is selected, while 'Use project root directory for source and r-code' is unselected. Below this, there are two checked checkboxes: 'Source directory:' with a text field containing 'src', and 'R-code directory:' with a text field containing 'bin'. At the bottom of the dialog, there is a help icon (question mark), and four buttons: '< Back', 'Next >', 'Finish' (which is highlighted with a blue border), and 'Cancel'.

- f. This is a new project, so keep the default PROPATH settings for now.

Click **Next**.



- g. Since this project contains client code, do not specify a connection to the database.

Click **Finish**.

The screenshot shows the 'New OpenEdge Project' dialog box with the 'Select database connections' step active. The dialog has a title bar with the OpenEdge logo and the text 'New OpenEdge Project'. Below the title bar, the section 'Select database connections' is highlighted, with the instruction 'Select the database connections to be used by the project.' and a small icon of a database table. A link 'Configure database connections' is visible in the top right. Below this, there are radio buttons for 'Show selected' and 'Show all', with 'Show all' being selected. A large table with 11 columns (Connection Name, Group, Physical Name, Other Parameters, Description, Logical Name, Aliases, Host, Service/Port, User) and 15 rows is shown. Below the table is a 'Connection string:' label and a text area. At the bottom of the table area are 'Select All' and 'Deselect All' buttons. The bottom of the dialog features a help icon, navigation buttons '< Back', 'Next >', 'Finish' (highlighted in blue), and 'Cancel'.

Select database connections
Select the database connections to be used by the project.

[Configure database connections](#)

☐ Show selected ☒ Show all

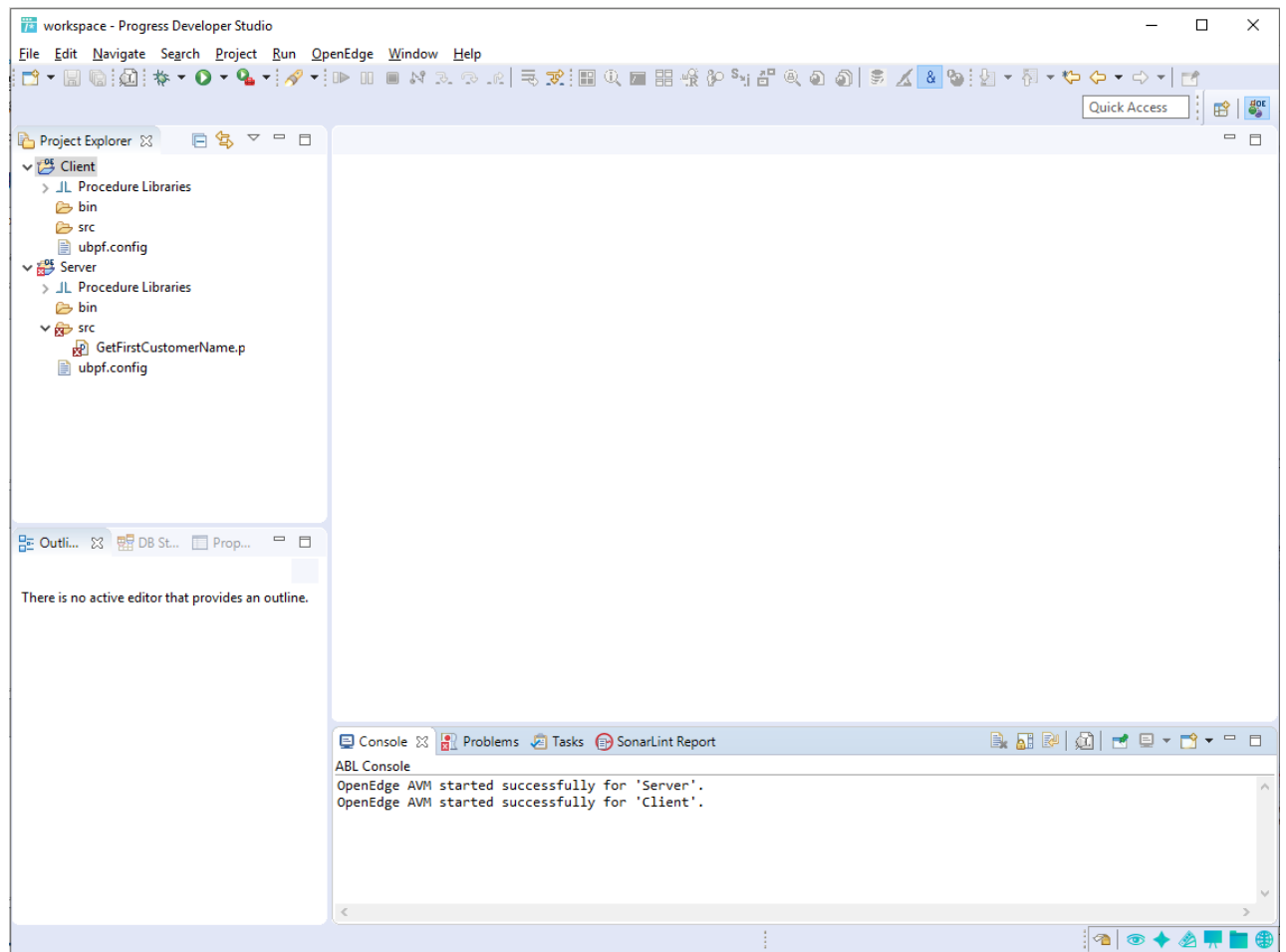
Connection Name	Group	Physical Name	Other Parameters	Description	Logical Name	Aliases	Host	Service/Port	User

Connection string:

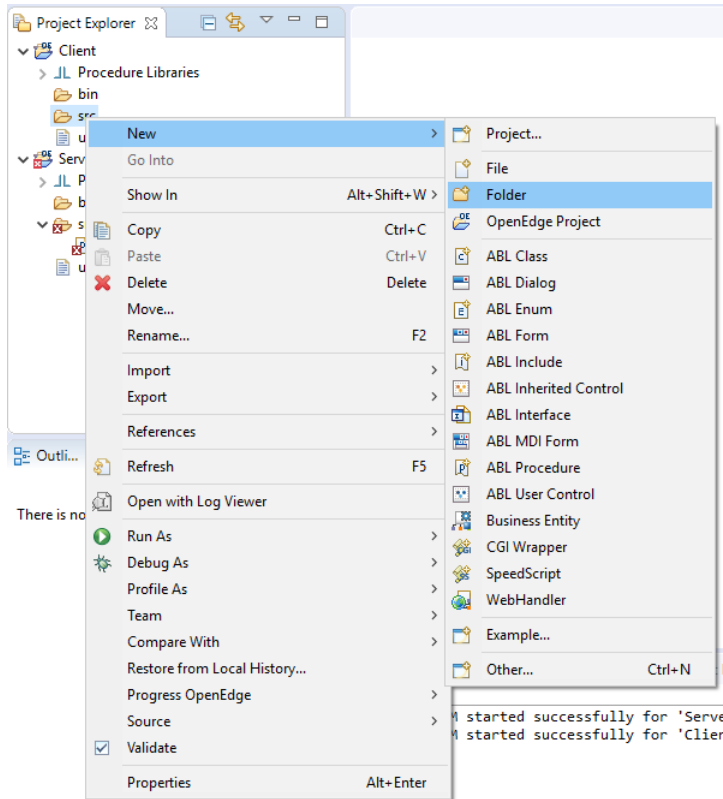
Select All Deselect All

? < Back Next > Finish Cancel

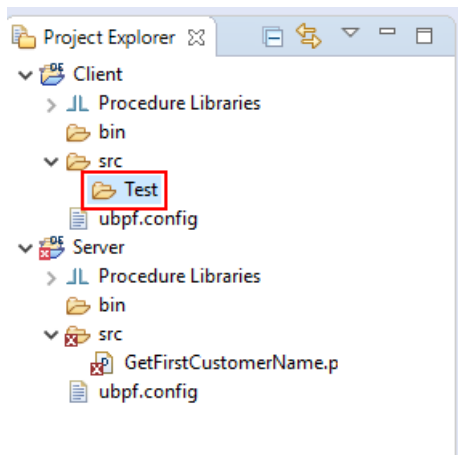
- h. Here you should see your newly created project, with **src** and **bin** folders, in Project Explorer The **src** folder will contain ABL source code.



2. Add a subfolder to the **src** folder of the **Client** project as follows:
 - a. In Project Explorer, navigate to the **src** folder under the **Client** project.
 - b. Right-click **src** and then select **New > Folder**.

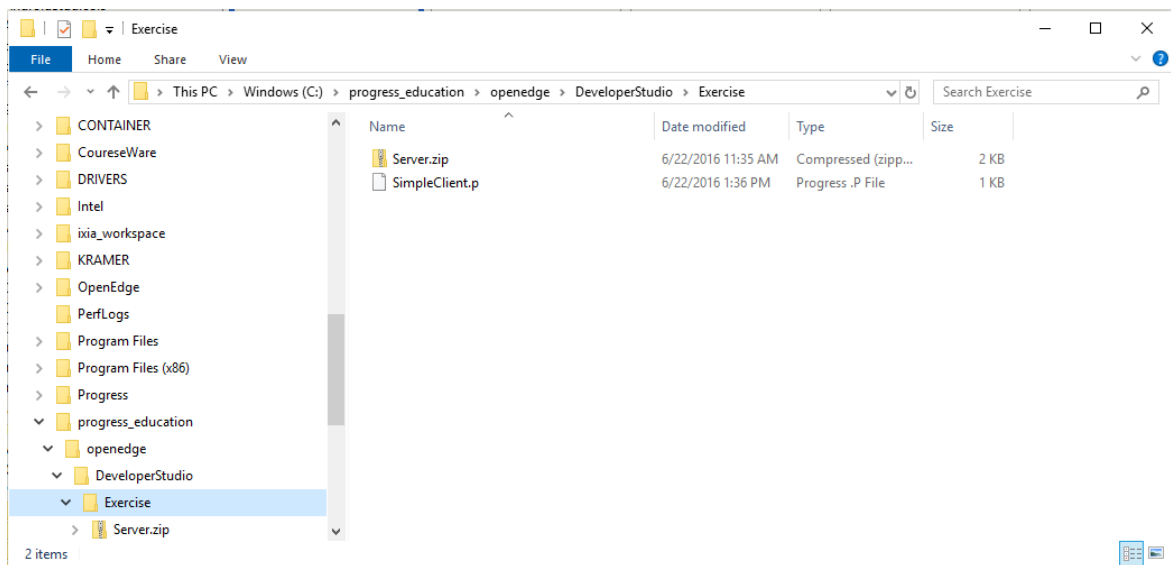


- c. Enter **Test** as the name of the new folder.
- d. Click **Finish**.

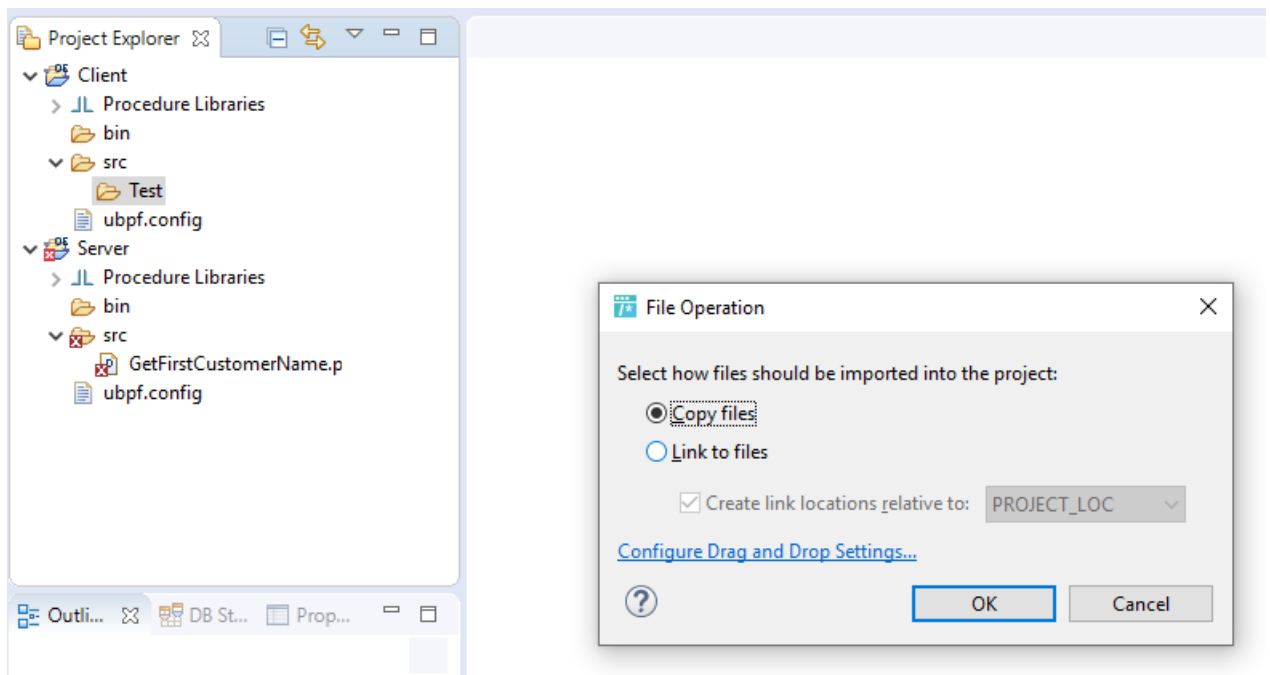


3. Import an ABL source file into your project from
C:\progress_education\openedge\DeveloperStudio\Exercise. The source file is: **SimpleClient.p**.

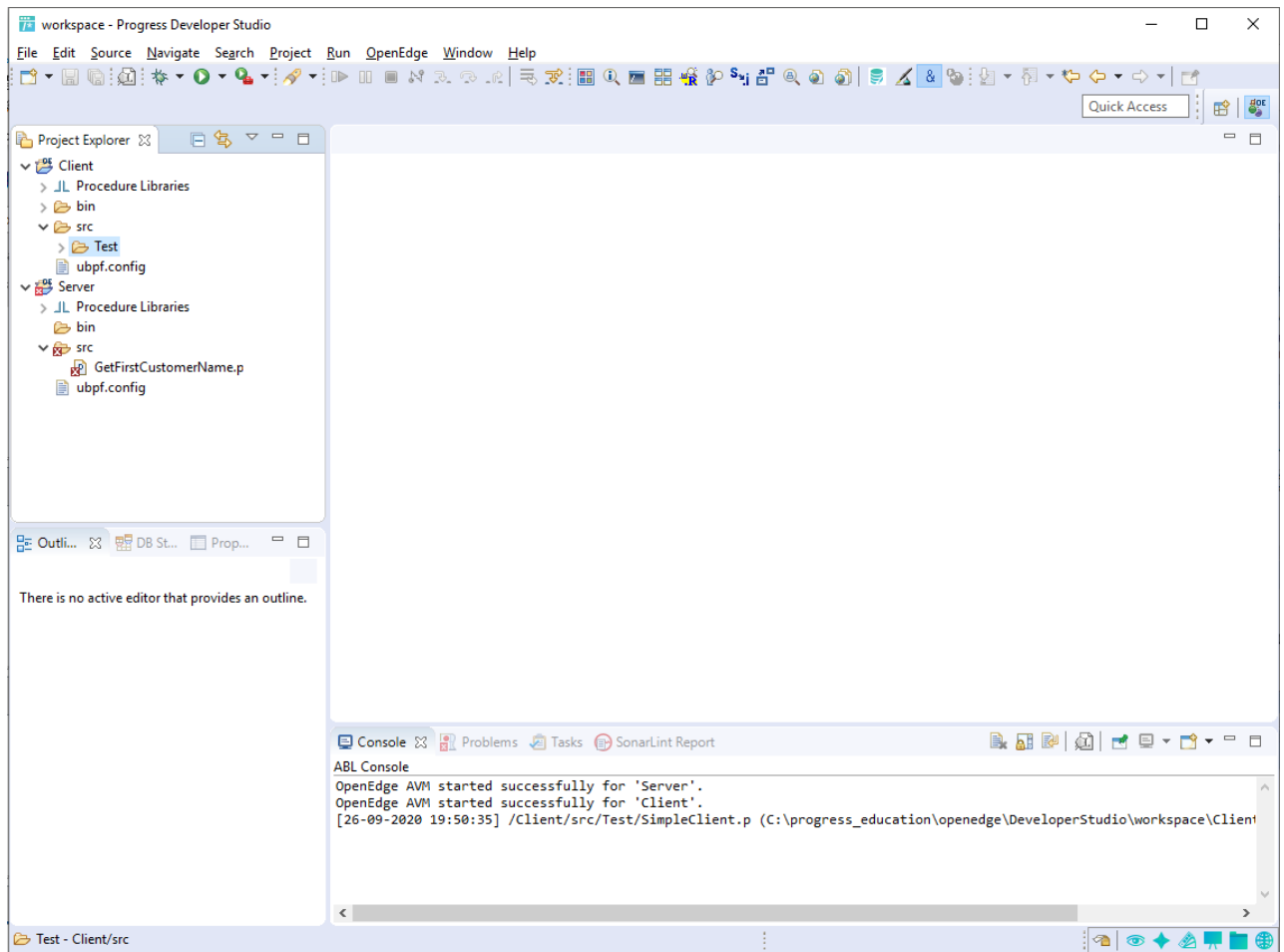
- a. Launch Windows Explorer and browse to
C:\progress_education\openedge\DeveloperStudio\Exercise.



- b. Select **SimpleClient.p**. Then drag and drop the file onto the **Client > src > Test** folder in the Project Explorer view of Developer Studio.

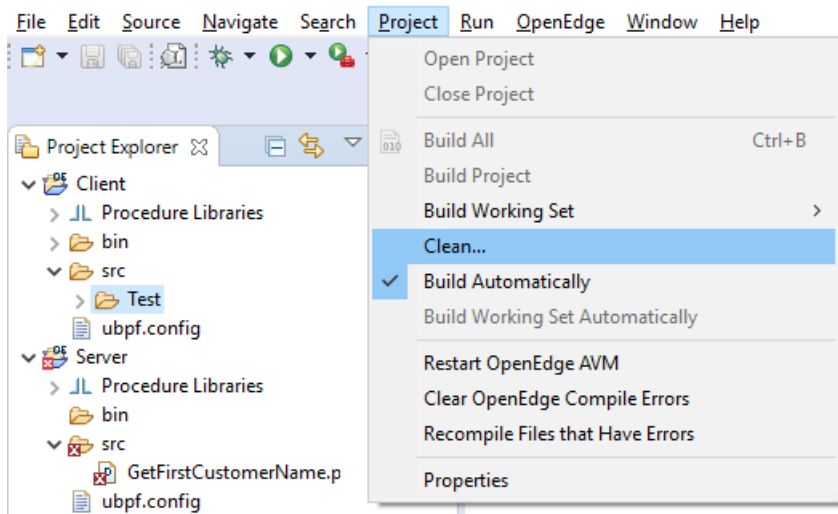


- c. Select **Copy files** and then click **OK**.

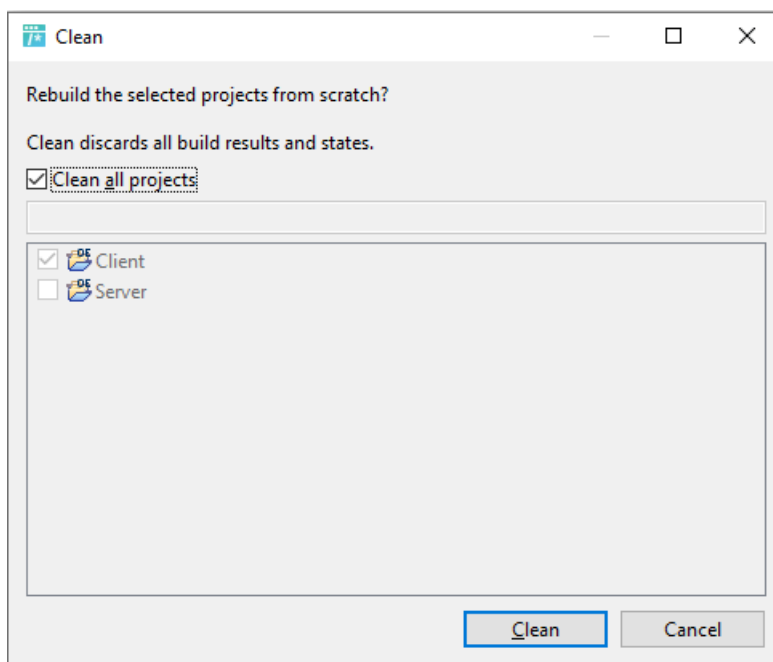


4. Clean and recompile the entire workspace:

a. Select **Project > Clean....**



b. Click **Clean**.



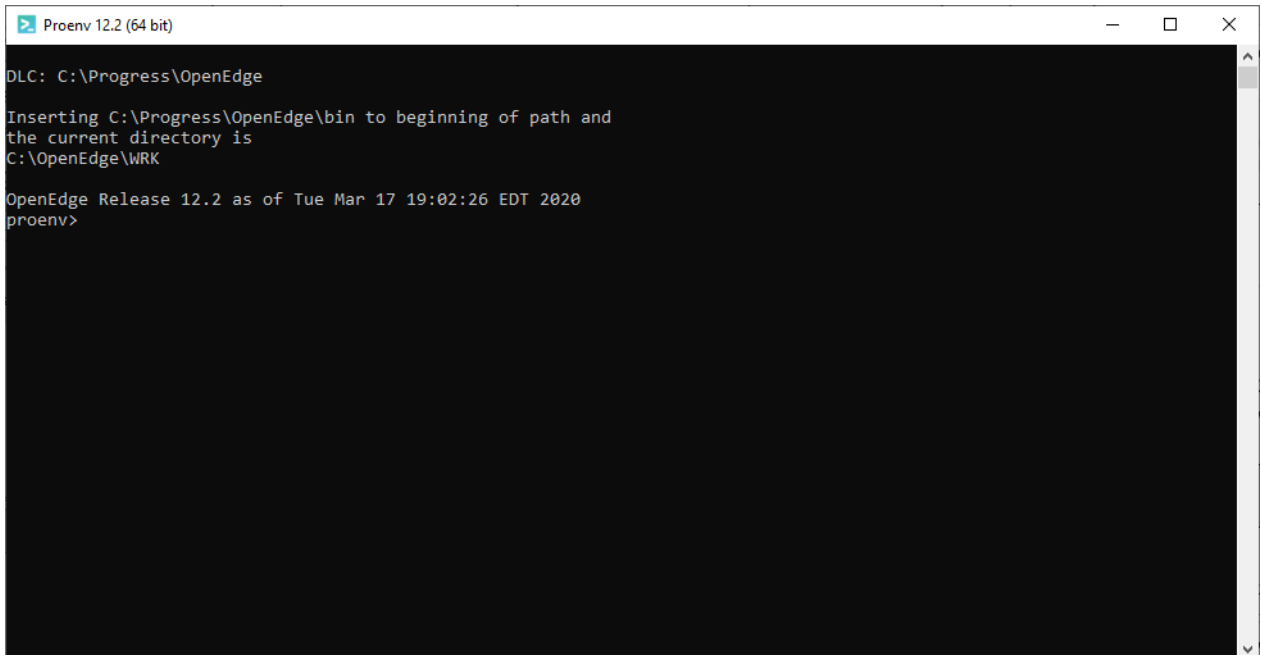
Note: You should always clean your workspace after importing projects and files.

Part 3—Starting the Database Server and configuring the Server project that uses it

In this part of the exercise you start the Database Server for the sports2020 database and configure the Server project to use a connection to this database.

1. Select **Start > Progress > Proenv 12.2 (64 bit)**.

A new window that is set up for a Progress OpenEdge session opens. By default, C:\OpenEdge\WRK is the OpenEdge working directory where the database will be created.



```
Proenv 12.2 (64 bit)

DLC: C:\Progress\OpenEdge

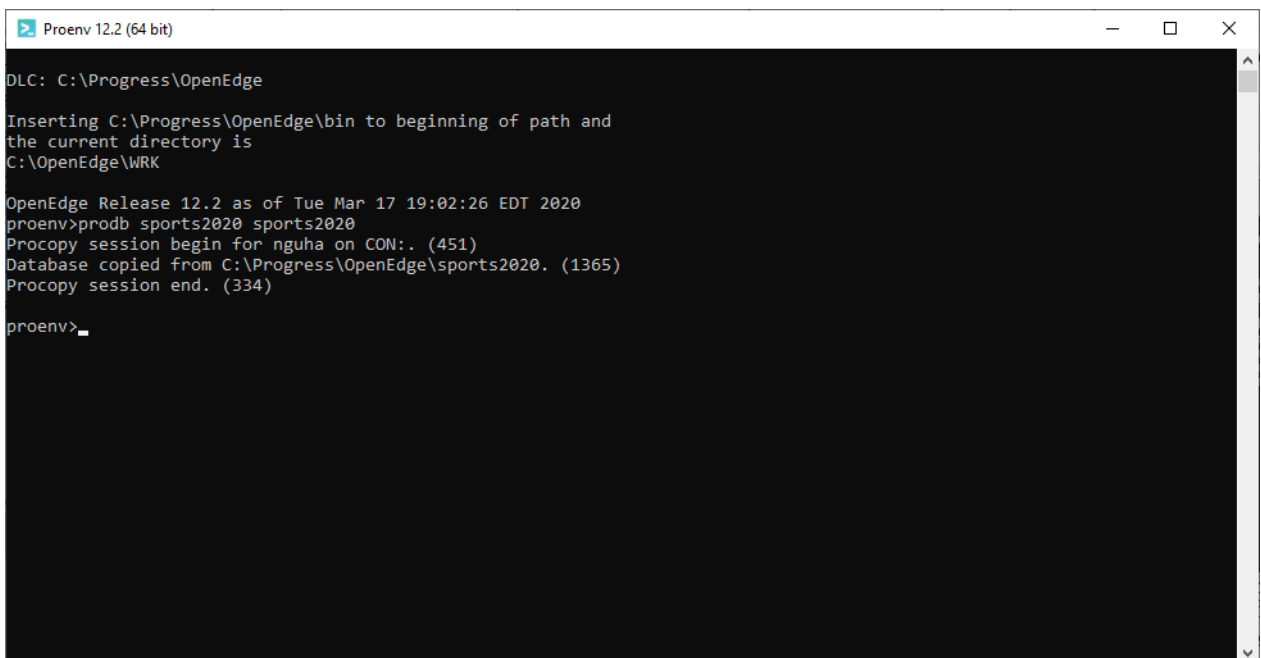
Inserting C:\Progress\OpenEdge\bin to beginning of path and
the current directory is
C:\OpenEdge\WRK

OpenEdge Release 12.2 as of Tue Mar 17 19:02:26 EDT 2020
proenv>
```

2. Type the following command to create the sports2020 database:

prodb sports2020 sports2020

The database files are now added to the C:\OpenEdge\WRK directory and the database is ready for starting. All the database-related file names begin with *sports2020*.



```
Proenv 12.2 (64 bit)

DLC: C:\Progress\OpenEdge

Inserting C:\Progress\OpenEdge\bin to beginning of path and
the current directory is
C:\OpenEdge\WRK

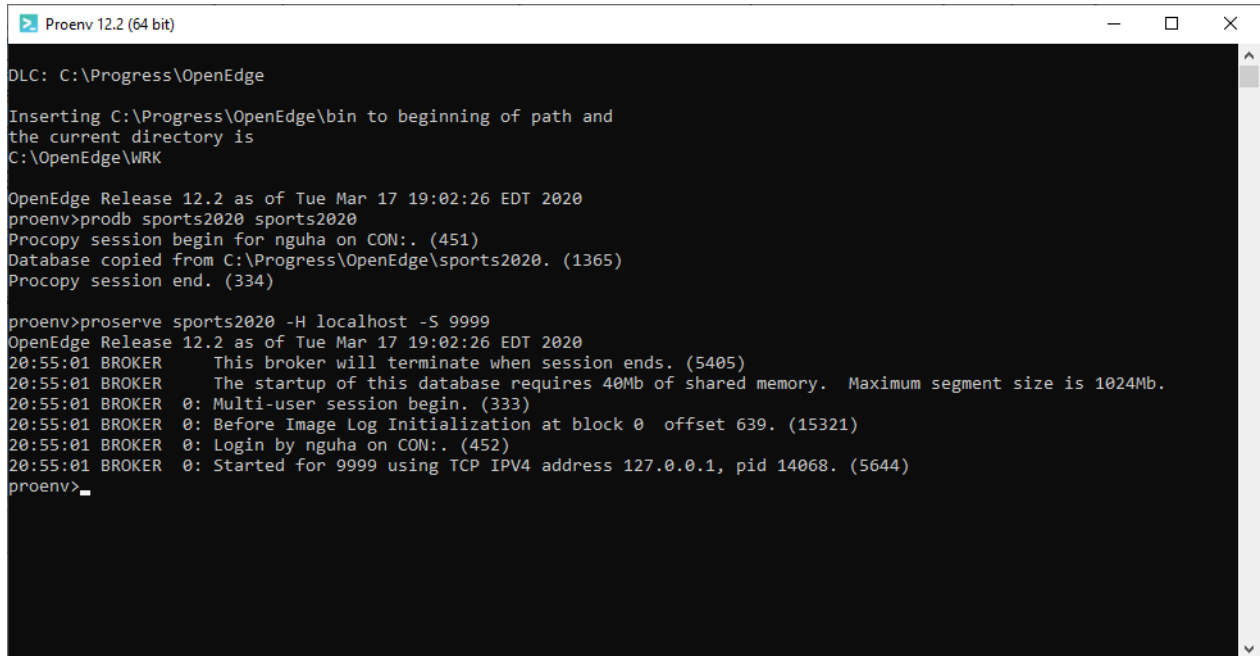
OpenEdge Release 12.2 as of Tue Mar 17 19:02:26 EDT 2020
proenv>prodb sports2020 sports2020
Procopy session begin for nguha on CON:. (451)
Database copied from C:\Progress\OpenEdge\sports2020. (1365)
Procopy session end. (334)

proenv>
```

3. Type the following command:

proserve sports2020 -H localhost -S 9999

The Database Server for this database will start. When the Database Server is started, a **sports2020.lk** file is created; it remains in the directory with the other database files as long as the Database Server runs.



```

Proenv 12.2 (64 bit)

DLC: C:\Progress\OpenEdge

Inserting C:\Progress\OpenEdge\bin to beginning of path and
the current directory is
C:\OpenEdge\WRK

OpenEdge Release 12.2 as of Tue Mar 17 19:02:26 EDT 2020
proenv>prodb sports2020 sports2020
Procopy session begin for nguha on CON:. (451)
Database copied from C:\Progress\OpenEdge\sports2020. (1365)
Procopy session end. (334)

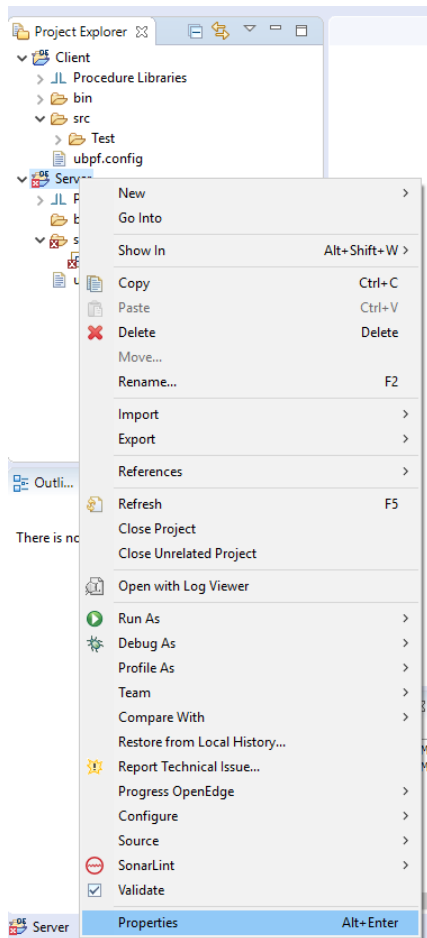
proenv>proserve sports2020 -H localhost -S 9999
OpenEdge Release 12.2 as of Tue Mar 17 19:02:26 EDT 2020
20:55:01 BROKER      This broker will terminate when session ends. (5405)
20:55:01 BROKER      The startup of this database requires 40Mb of shared memory.  Maximum segment size is 1024Mb.
20:55:01 BROKER      0: Multi-user session begin. (333)
20:55:01 BROKER      0: Before Image Log Initialization at block 0  offset 639. (15321)
20:55:01 BROKER      0: Login by nguha on CON:. (452)
20:55:01 BROKER      0: Started for 9999 using TCP IPV4 address 127.0.0.1, pid 14068. (5644)
proenv>_

```

Note: If port 9999 is unavailable on your system, use a different port number.

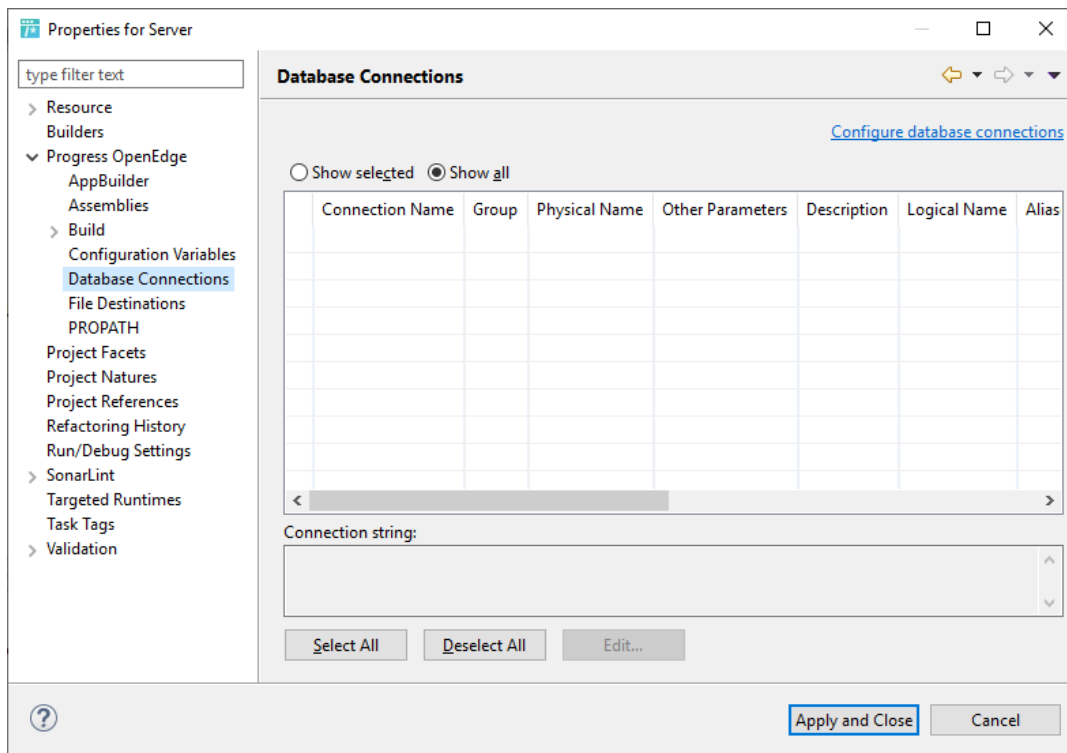
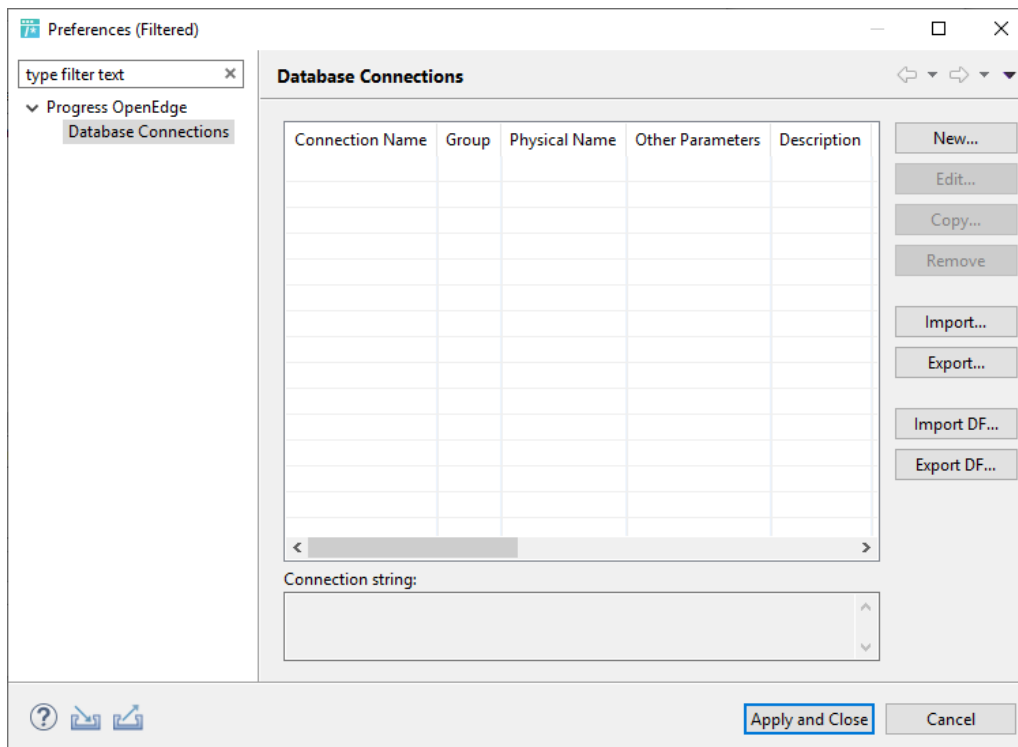
4. Close the Proenv window by clicking the “X” in the top right corner or by typing **exit** in the window. The Database Server will continue to run.

5. In Project Explorer, right-click the **Server** project and then select **Properties**.

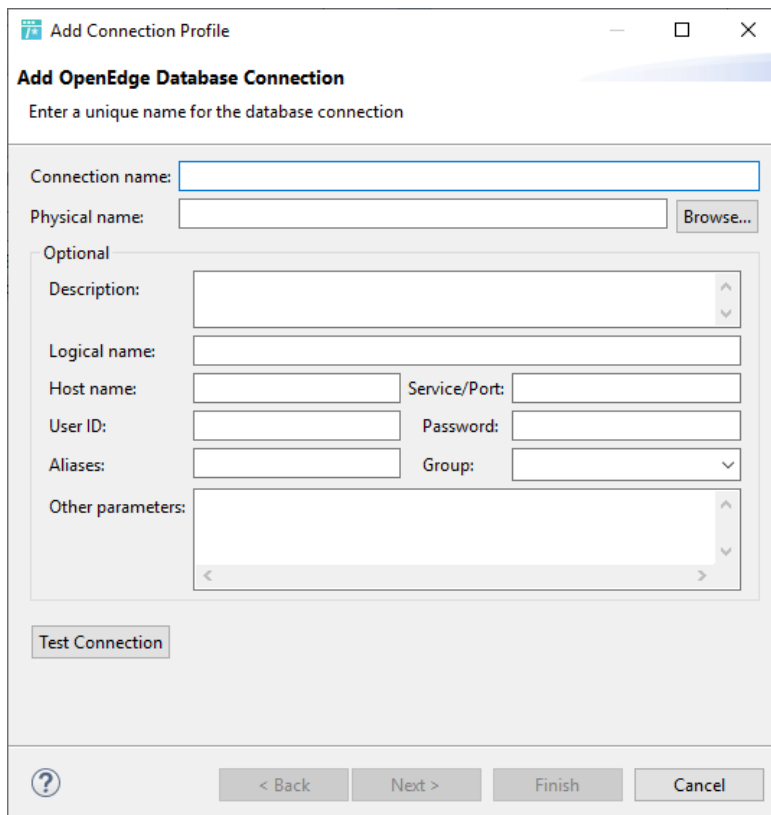


6. Navigate to **Progress OpenEdge > Database Connections**.

Click the link **Configure database connections**.

7. Click **New...** to open the *Add Connection Profile* wizard.

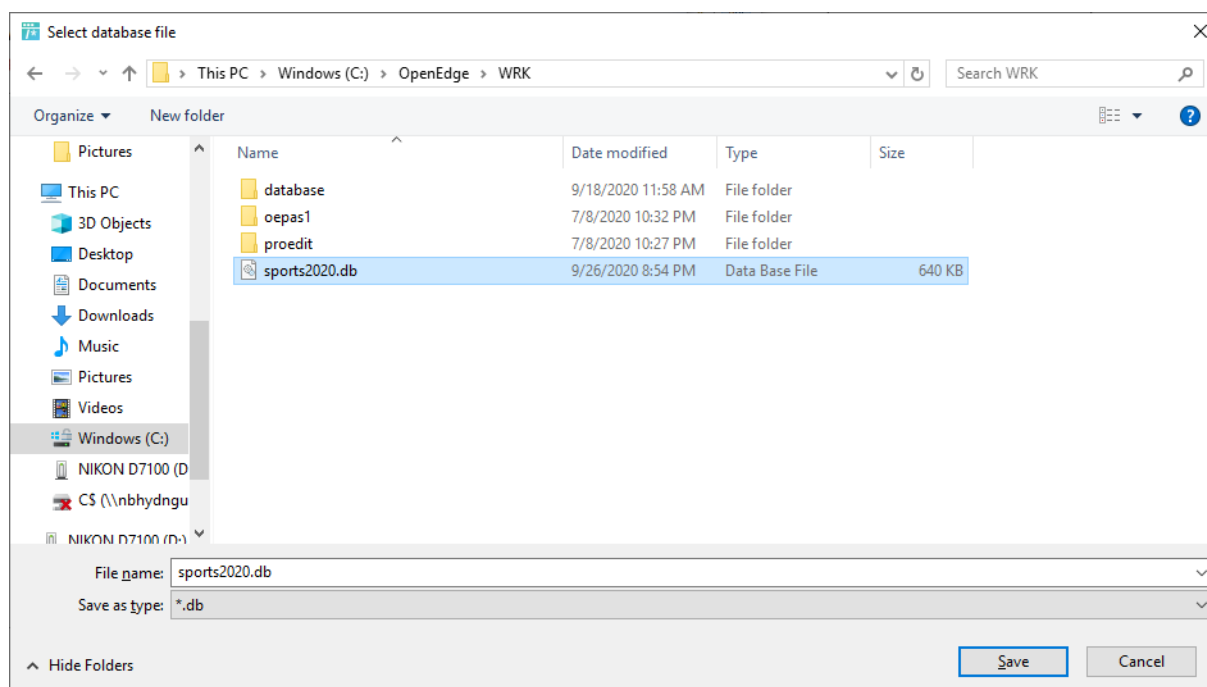
8. Enter the connection name, **Sports2020DB**.



The 'Add Connection Profile' dialog box is shown. It has a title bar with a question mark icon, a minimize button, a maximize button, and a close button. The main title is 'Add OpenEdge Database Connection'. Below it, a subtitle says 'Enter a unique name for the database connection'. The 'Connection name:' field is empty. The 'Physical name:' field is empty, with a 'Browse...' button to its right. Below these is an 'Optional' section. It contains a 'Description:' field with a scroll bar. Below that is a 'Logical name:' field. Then 'Host name:' and 'Service/Port:' fields. Then 'User ID:' and 'Password:' fields. Then 'Aliases:' and 'Group:' fields. At the bottom of the optional section is an 'Other parameters:' field with a scroll bar. Below the optional section is a 'Test Connection' button. At the very bottom of the dialog are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

9. In the Physical name area:

- Click the **Browse** button and then navigate to and select **C : \OpenEdge\WRK\sports2020 .db**.
- Click **Save**.



10. Specify the host name as **localhost**.
11. Specify **9999** as the port number.

The screenshot shows the 'Add Connection Profile' dialog box with the 'Add OpenEdge Database Connection' tab selected. The 'Connection name' is 'Sports2020DB'. The 'Physical name' is 'C:\OpenEdge\WRK\sports2020.db'. Under the 'Optional' section, 'Host name' is 'localhost' and 'Service/Port' is '9999'. There are fields for 'User ID', 'Password', 'Aliases', and 'Group'. A 'Test Connection' button is at the bottom left. Navigation buttons at the bottom are '< Back', 'Next >', 'Finish', and 'Cancel'.

If port 9999 is unavailable on your system, use a different port number. It must be the same port number that you specified when you started the Database Server.

12. Click the **Test Connection** button.
13. The wizard prompts you about which project in your workspace to use for the test because, to run the code to test the connection, you need an AVM. Select the **Server** project and then click **OK**.

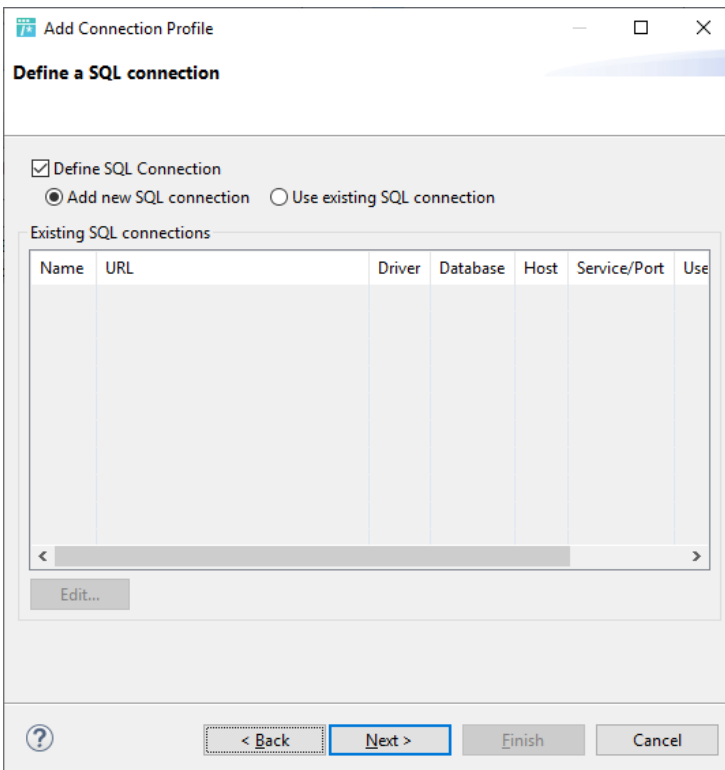
The screenshot shows the 'Select project' dialog box with the 'Test Connection' tab selected. The instruction is 'Select the project from which to test the connection'. A list box contains two items: 'Project: Client (C:\progress_education\openedge\DeveloperStudio\workspace\Client)' and 'Project: Server (C:\progress_education\openedge\DeveloperStudio\workspace\Server)'. The 'Server' project is selected. At the bottom are 'OK' and 'Cancel' buttons.

14. The test should complete successfully. If it does not complete successfully, you need to investigate. Is the Database Server running? Is the port number correct for the connection?

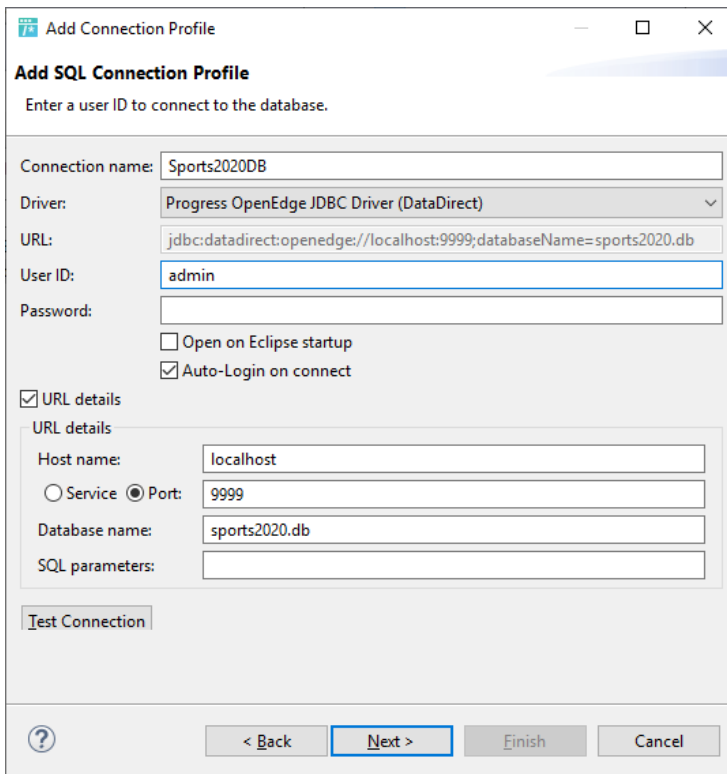
After the test completes successfully, click **OK**.



15. Back in the Add OpenEdge Database Connection window, click **Next**. The Define a SQL connection window opens.



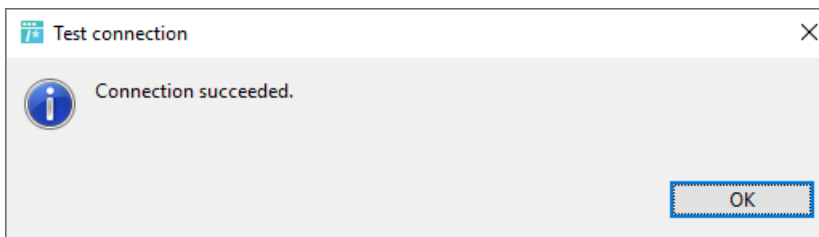
16. Click **Next**. The Add SQL Connection Profile window opens. Here you retain the values that have been automatically set for you by the wizard.



The 'Add SQL Connection Profile' dialog box is shown. It contains the following fields and options:

- Connection name:** Sports2020DB
- Driver:** Progress OpenEdge JDBC Driver (DataDirect)
- URL:** jdbc:datadirect:openedge://localhost:9999;databaseName=sports2020.db
- User ID:** admin
- Password:** (empty field)
- ☐ Open on Eclipse startup
- ☒ Auto-Login on connect
- ☒ URL details
- URL details:**
 - Host name:** localhost
 - ☐ Service ☒ Port: 9999
 - Database name:** sports2020.db
 - SQL parameters:** (empty field)
- Test Connection** button
- Navigation buttons at the bottom: **< Back**, **Next >** (highlighted), **Finish**, and **Cancel**.

17. Click the **Test Connection** button. Then click **OK** when the connection succeeds. Again, if the connection does not succeed, you must investigate the problem.

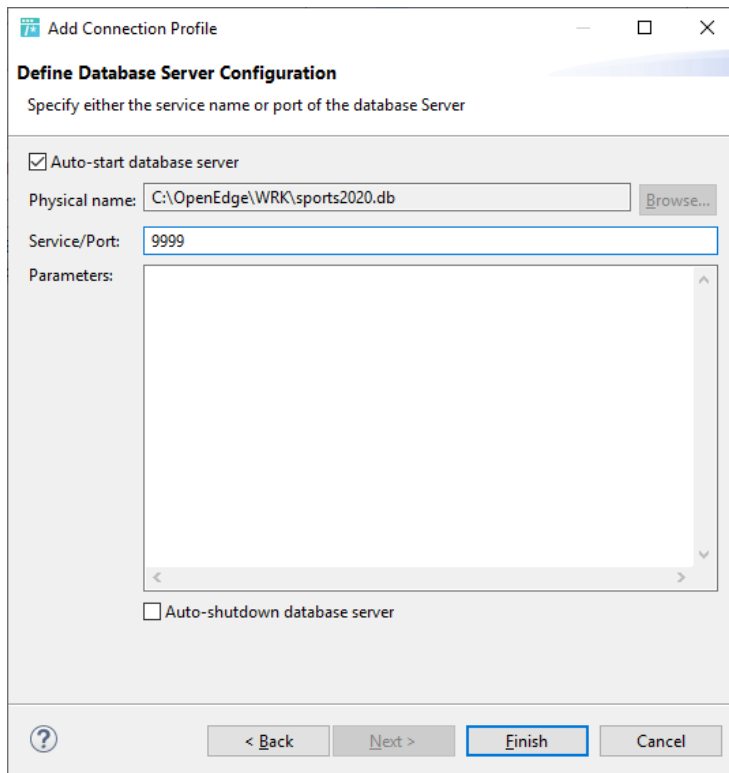


The 'Test connection' dialog box is shown. It contains the following elements:

- Test connection** title bar
- Connection succeeded.** message with an information icon
- OK** button

18. Click **Next**. The Define Database Server Configuration window opens. Notice that Auto-start database server is selected. Leave that box selected; Developer Studio will automatically start the Database Server for you. Do not select **Auto-shutdown database server**.

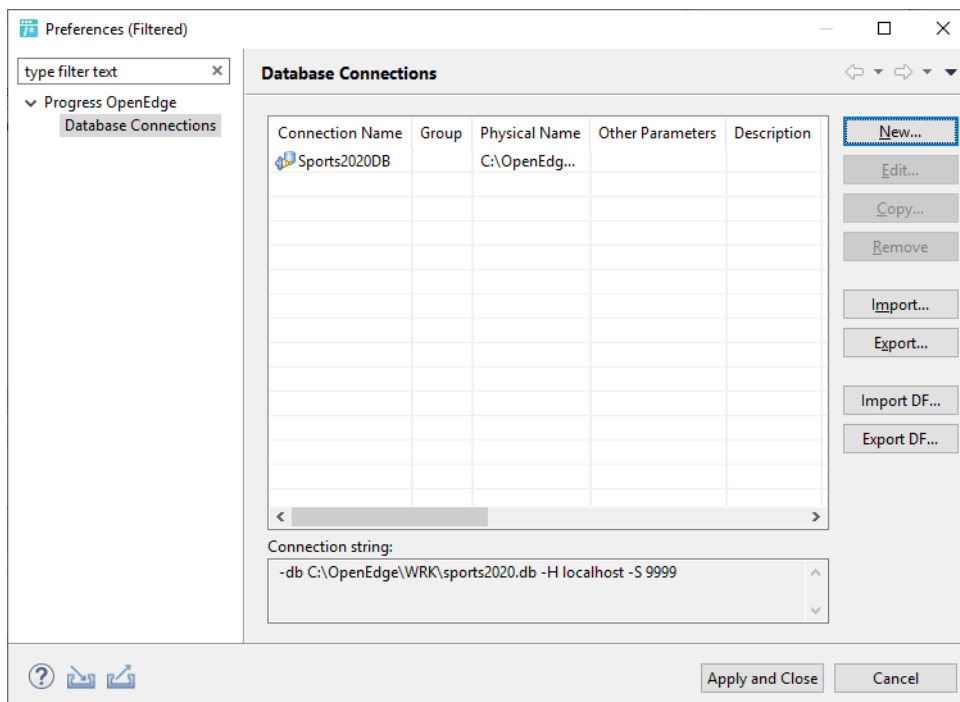
Click **Finish**.



The 'Add Connection Profile' dialog box is shown with the 'Define Database Server Configuration' tab selected. The 'Auto-start database server' checkbox is checked, and the 'Auto-shutdown database server' checkbox is unchecked. The 'Physical name' field contains 'C:\OpenEdge\WRK\sports2020.db' and the 'Service/Port' field contains '9999'. The 'Parameters' field is empty. The 'Finish' button is highlighted.

19. After the configuration is completed, you see the connection string in the lower part of the Database Connections window.

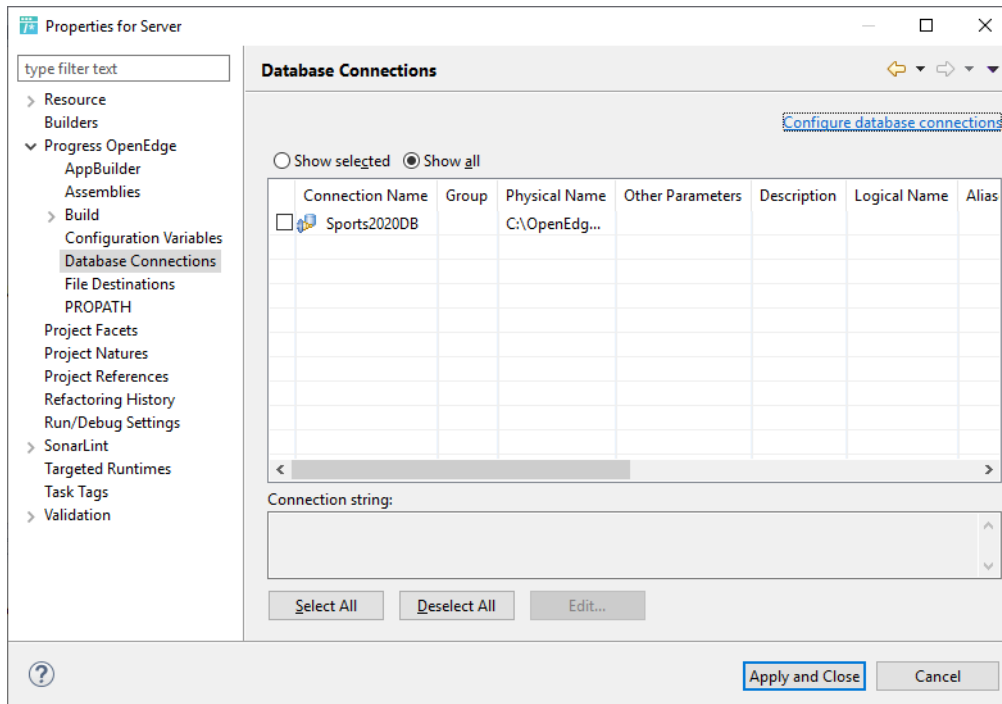
Click **Apply and Close**.



The 'Database Connections' window is shown. The 'Connection Name' column contains 'Sports2020DB'. The 'Physical Name' column contains 'C:\OpenEdge...'. The 'Connection string' field at the bottom contains '-db C:\OpenEdge\WRK\sports2020.db -H localhost -S 9999'. The 'Apply and Close' button is highlighted.

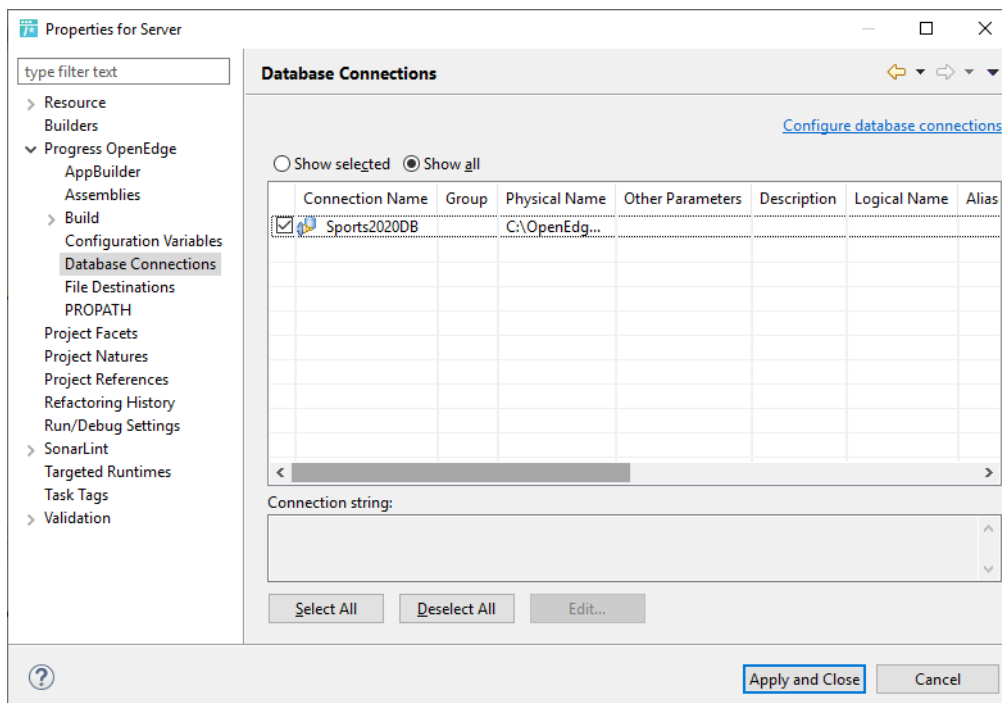
Connection Name	Group	Physical Name	Other Parameters	Description
Sports2020DB		C:\OpenEdge...		

20. You are now back in the Database Connections window of the Server project.

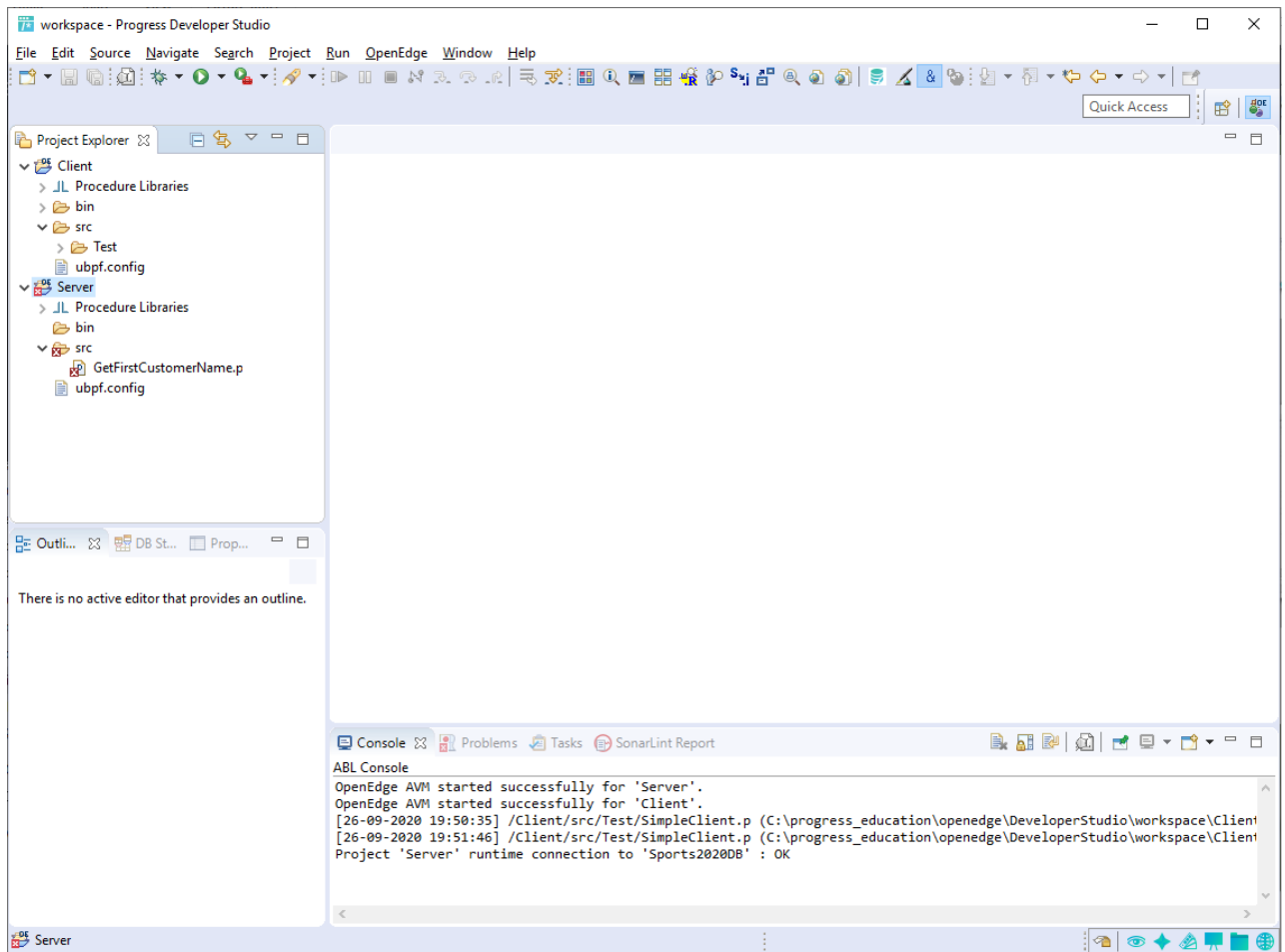


21. Select the connection profile you just configured.

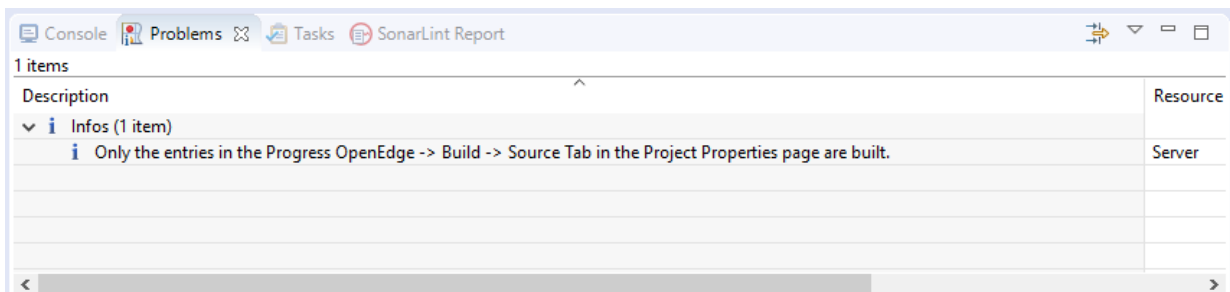
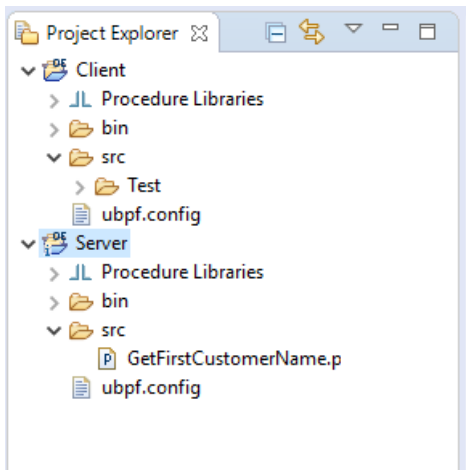
Click **Apply and Close** to complete the configuration.



22. You will notice in the Console that the AVM for the Server project restarts. This is because it must start an AVM that has an active connection to the Database Server.



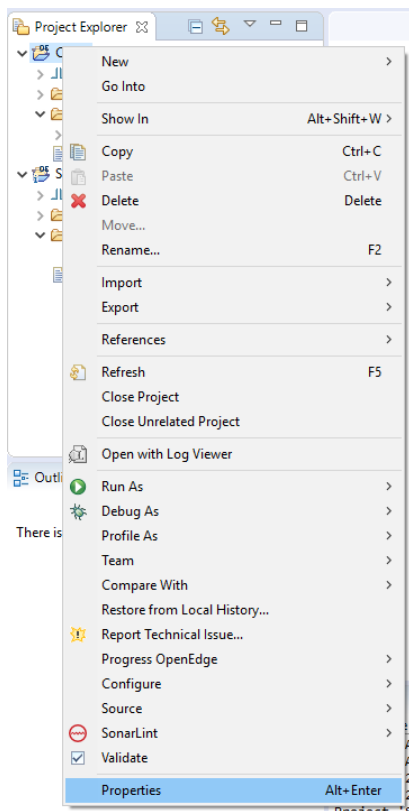
23. Now that the Server project has a connection to the sports2020 database, the code in this project should compile without errors. Clean the workspace to recompile all files:
- a. Select **Project > Clean....**
 - b. Click **OK**.
24. You should now see that all compilation errors have been cleared since the project now has a connection to the database.



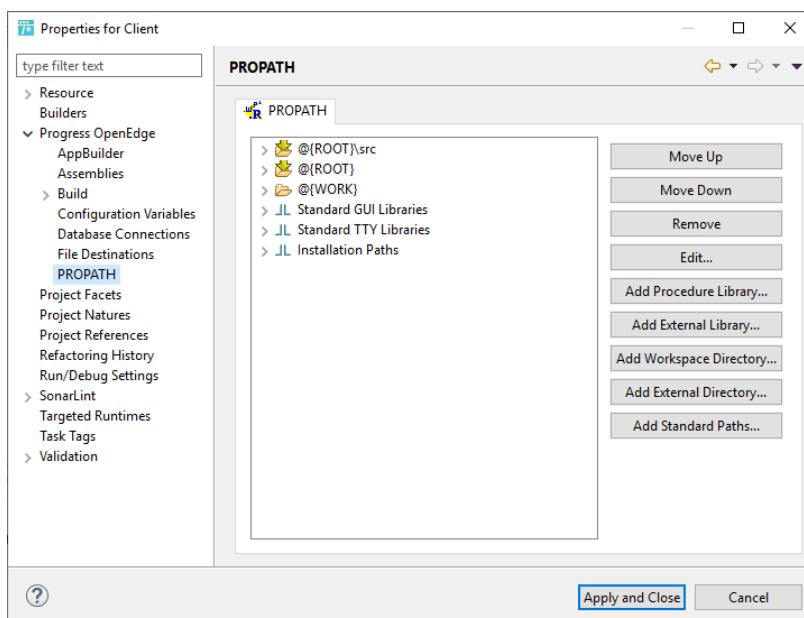
Part 4—Adding PROPATH to the Client project

The ABL code in the Client project references code in the Server project. For the ABL code to run successfully, it must find the code at runtime. Next, you will modify the properties for the Client project to use the Server project bin folder in its PROPATH.

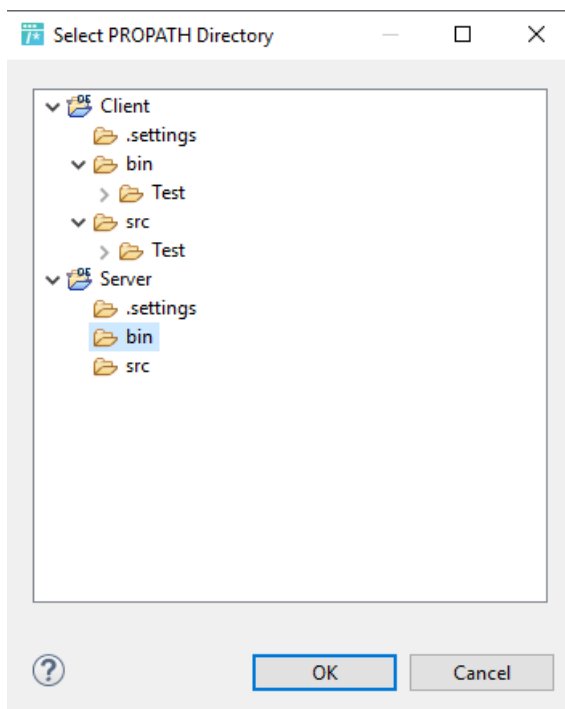
1. In Project Explorer, right-click the **Client** project and then select **Properties**.



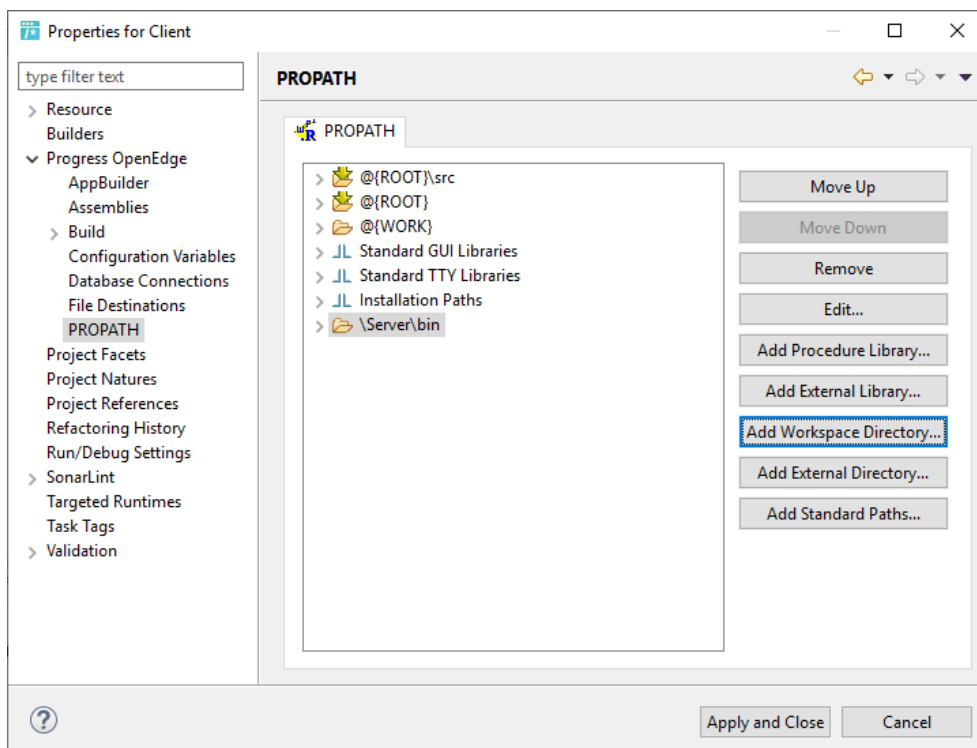
2. Navigate to **Progress OpenEdge > PROPATH**.



3. Click **Add Workspace Directory...**
4. In the Select PROPATH Directory window, select the **bin** directory of the **Server** project.



5. Click **OK**.
6. Your PROPATH for the Client Project should now appear as like this:



7. Click **Apply and Close**.

Wrap-up

In this Guided Exercise, you imported an OpenEdge project named Server. Then you created an OpenEdge project named Client and added an ABL procedure to it. Then, you started a Database Server and configured the Server project to connect to the database. Finally, you modified PROPATH for the Client project to use resources in the Server project.