

Projects for *Murach's PHP and MySQL* (4th Edition)

The projects in this document let you apply the programming skills you learn in *Murach's PHP and MySQL* by developing an application called SportsPro Technical Support. This application is designed for the technical support department of a hypothetical software company that develops software for sports leagues, and it uses a database named tech_support.

The purpose of the application is to track technical support service calls (referred to as *incidents*) in a database that also stores information about the company's customers, software products, and technicians. Before you do any of the projects, you should read the introductory information that follows.

An introduction to the projects	2
The design of the SportsPro Technical Support application	2
The design of the tech_support database	3
How to install the database	4
How to restore the database	4
How to structure your directories	4
How to format the web pages	4
A starting point for the projects	5
The projects	5
Project 6-1: Manage products	6
Project 6-2: Manage technicians	8
Project 6-3: Manage customers	10
Project 6-4: Register product	12
Project 6-5: Create incident	14
Project 7-1: Use a drop-down list	16
Project 8-1: Improve controller code	17
Project 10-1: Improve date handling	17
Project 12-1: Use sessions	18
Project 13-1: Use type declarations	19
Project 14-1: Use objects	19
Project 15-1: Improve validation	20
Project 15-2: Handle a TypeError	21
Project 19-1: Handle data access errors	22
Project 20-1: Use the same form for adding and updating data	23
Project 20-2: Assign incidents	25
Project 20-3: Update incidents	28
Project 20-4: Display incidents	31
Project 21-1: Add user authentication	33

An introduction to the projects

This introduction describes the design of the SportsPro Technical Support application and the tech_support database. In addition, it explains how to make the tech_support database available to your applications, how to restore the database so it contains its original data, and how to prepare for developing the application. Finally, it provides some general information about developing the projects.

The design of the SportsPro Technical Support application

The SportsPro Technical Support application consists of web pages that provide functions for three types of users. First, it lets administrators perform functions such as maintaining the Products, Customers, and Technicians tables of the tech_support database. Second, it lets technicians perform functions such as updating incidents. And third, it lets customers perform functions such as registering products.

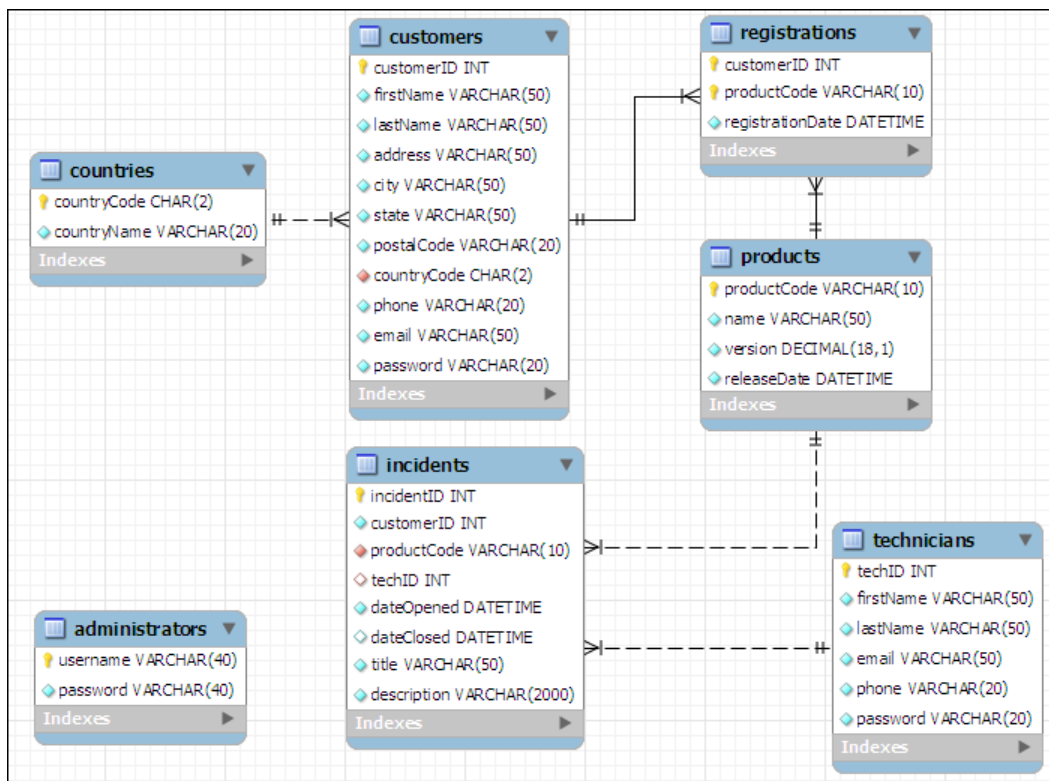
Most projects have you add one or more new pages to the SportsPro application. For example, project 6-1 has you add two pages that let an administrator manage the products in the database. If you complete all of the projects for this book, you'll have a relatively realistic web application.

Note that the first number in a project refers to the chapter in the book. So, for example, you can complete projects 6-1 through 6-5 after reading chapter 6. Similarly, you can complete project 7-1 after reading chapter 7. However, some projects don't require all of the preceding chapters. That's why each project lists the required chapters.

The design of the tech_support database

The tech_support database is used to track technical support incidents. It consists of the seven tables shown in the diagram that follows. The incidents table contains one row for each technical support incident. Each row in the incidents table is related to one row in the customers table, which contains information about the company's customers; one row in the products table, which contains information about the company's products; and one row in the technicians table, which contains information about the company's technical support staff.

In addition, a table named registrations keeps track of the products that are registered to each customer, a table named countries stores the countries of the world, and a table named administrators stores the usernames and passwords for the administrators. Note that the administrators table is not related to any of the other tables.



In addition to the column data types shown above, you should know that the **customerID**, **incidentID**, and **techID** columns in the **customers**, **incidents**, and **technicians** tables are **AUTO_INCREMENT** columns. So, the values of these columns are set automatically when new rows are added to these tables. For more details about this database, you can use phpMyAdmin to view the structure and data that's stored in the database.

How to install the database

To install the tech_support database, you can start phpMyAdmin and run the tech_support.sql file that's provided by your instructor.

How to restore the database

As you test some of the projects that you develop, you'll need to add, modify, and delete rows in the database. Then, at some point, you may want to restore the original data. To do that, you can use phpMyAdmin to run the tech_support.sql file again. This deletes both the structure and the data of the current tech_support database and restores the original database.

How to structure your directories

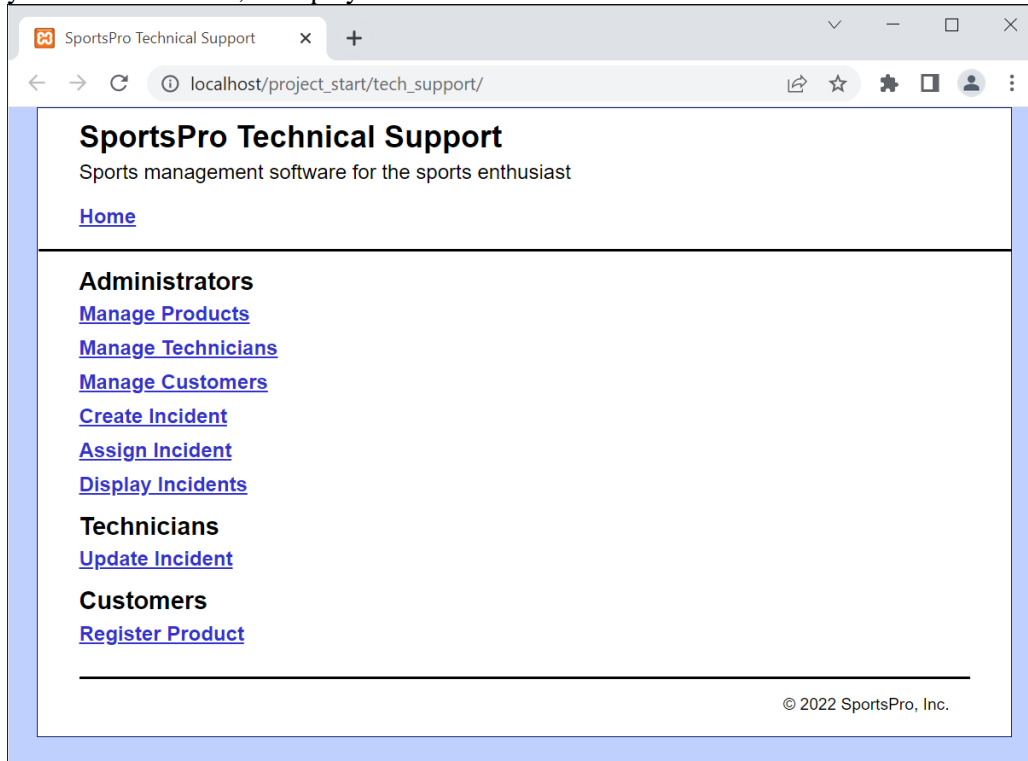
As you develop the web pages needed for each project, you will need to decide where to store the files needed to implement each project. To keep each project independent of other projects, make sure to store each project in its own directory. For example, store the Manage Projects project in its own directory. This directory should have a descriptive name such as manage_projects or project_manager.

How to format the web pages

As you develop the web pages needed for each project, you will need to apply some formatting to them. To make that easier, you can use the main.css file that's provided by your instructor. If necessary, you can modify this file, but it contains all of the tags needed to format the pages as shown in this document.

A starting point for the projects

To make it easy to get started, your instructor may give you the `tech_support` directory. This directory includes some of the files for a website that can help you get started with the projects. These files include the `tech_support.sql` file that you can use to create the `tech_support` database, and a `main.css` file that you can use to format the web pages. If you run the website, it displays a menu like the one shown here:



Most projects correspond to one of the links on this menu. However, at this point, if you click on any of these links, they display a message that indicates that the page is under construction. That's because you still need to write the code that implements these projects.

The projects

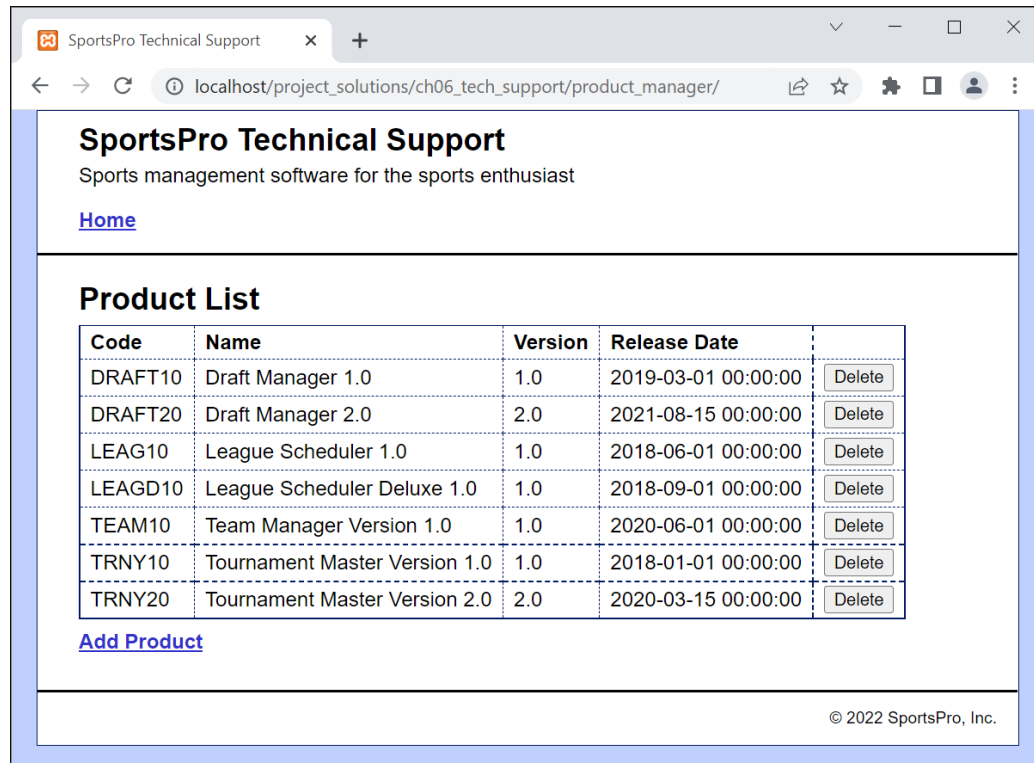
The description of each project includes an image of how the pages should appear in a browser, a description of how the pages operate, and specifications for how the project should be coded. This information is detailed enough for you to complete each project. However, you'll need to use your best judgment on how to code many of the details. To do that, write the code in the way that you think is best, based on the skills that were presented in the book.

Unless you're instructed otherwise, you can implement each project using any programming techniques you wish. In some cases, however, the project's specifications will direct you to use a specific programming technique. For example, a project may direct you to use sessions. In that case, you should implement the project as directed.

Project 6-1: Manage products

For this project, you'll create an application that lets an admin user view and delete existing products. In addition, this application lets the user add new products by entering the product information into text boxes. (*Required reading: chapters 1-6*)

The Product List page



SportsPro Technical Support
Sports management software for the sports enthusiast

[Home](#)

Product List

Code	Name	Version	Release Date	
DRAFT10	Draft Manager 1.0	1.0	2019-03-01 00:00:00	Delete
DRAFT20	Draft Manager 2.0	2.0	2021-08-15 00:00:00	Delete
LEAG10	League Scheduler 1.0	1.0	2018-06-01 00:00:00	Delete
LEAGD10	League Scheduler Deluxe 1.0	1.0	2018-09-01 00:00:00	Delete
TEAM10	Team Manager Version 1.0	1.0	2020-06-01 00:00:00	Delete
TRNY10	Tournament Master Version 1.0	1.0	2018-01-01 00:00:00	Delete
TRNY20	Tournament Master Version 2.0	2.0	2020-03-15 00:00:00	Delete

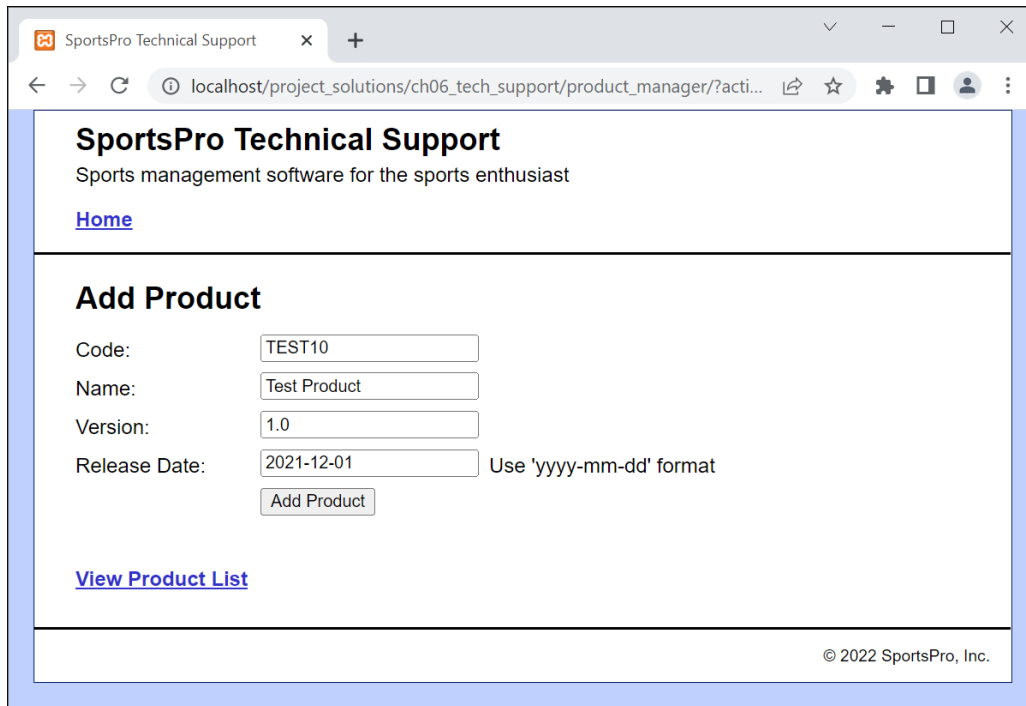
[Add Product](#)

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Operation

- When the user clicks the Delete button for a product, the product is deleted from the database.
- When the user clicks the Add Product link, the Add Product page is displayed.
- When the user clicks the Home link, the main menu is displayed.

The Add Product page



The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows the URL "localhost/project_solutions/ch06_tech_support/product_manager/?acti...". The page content includes a header with the title "SportsPro Technical Support" and the subtitle "Sports management software for the sports enthusiast". Below the header is a link labeled "Home". The main content area is titled "Add Product" and contains a form with the following fields: "Code:" with the value "TEST10", "Name:" with the value "Test Product", "Version:" with the value "1.0", and "Release Date:" with the value "2021-12-01". A note next to the Release Date field says "Use 'yyyy-mm-dd' format". Below the form is a button labeled "Add Product". At the bottom of the form area is a link labeled "View Product List". The footer of the page shows the copyright notice "© 2022 SportsPro, Inc."

Operation

- When the user enters the data for a new product into the text boxes and clicks the Add Product button, the product is added to the database and the Product List page is displayed again, so the user can view the newly added product.
- When the user clicks the View Product List link, the Product List page is displayed.

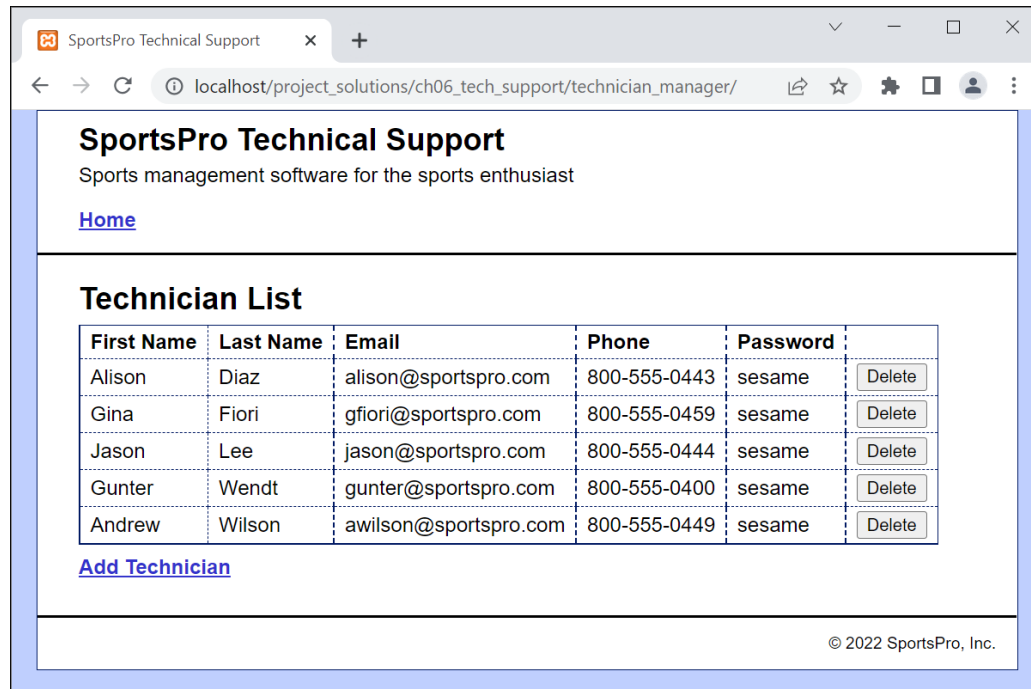
Specifications

- Validate the data the user enters on the Add Product page to be sure that the user enters a product code, name, version, and release date. If this data isn't provided, display an Error page that indicates that a required field was not entered.

Project 6-2: Manage technicians

For this project, you'll create an application that lets an admin user view and delete existing technicians. In addition, this application lets the user add a new technician. (*Required reading: chapters 1-6*)

The Technician List page



Operation

- When the user clicks the Delete button for a technician, the technician is deleted from the database.
- When the user clicks the Add Technician link, the Add Technician page is displayed.

The Add Technician page

SportsPro Technical Support
Sports management software for the sports enthusiast
[Home](#)

Add Technician

First Name:

Last Name:

Email:

Phone:

Password:

[View Technician List](#)

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Operation

- When the user enters the data for a new technician into the text boxes and clicks the Add Technician button, the technician is added to the database.

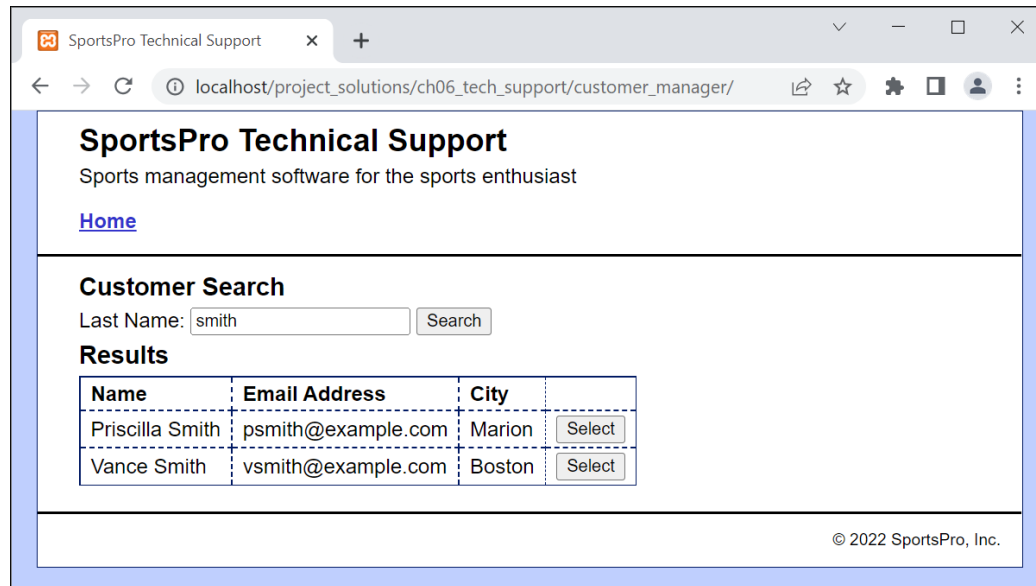
Specifications

- Validate the data the user enters on the Add Technician page to be sure that the user enters data in every text box. If this data isn't provided, display an Error page that indicates that a required field was not entered.

Project 6-3: Manage customers

For this project, you'll create an application that lets an admin user maintain customer data. To start, this application lets the user select an existing customer. Then, the user can view or update the customer's data. (*Required reading: chapters 1-6*)

The Select Customer page



SportsPro Technical Support
Sports management software for the sports enthusiast

[Home](#)

Customer Search
Last Name:

Results

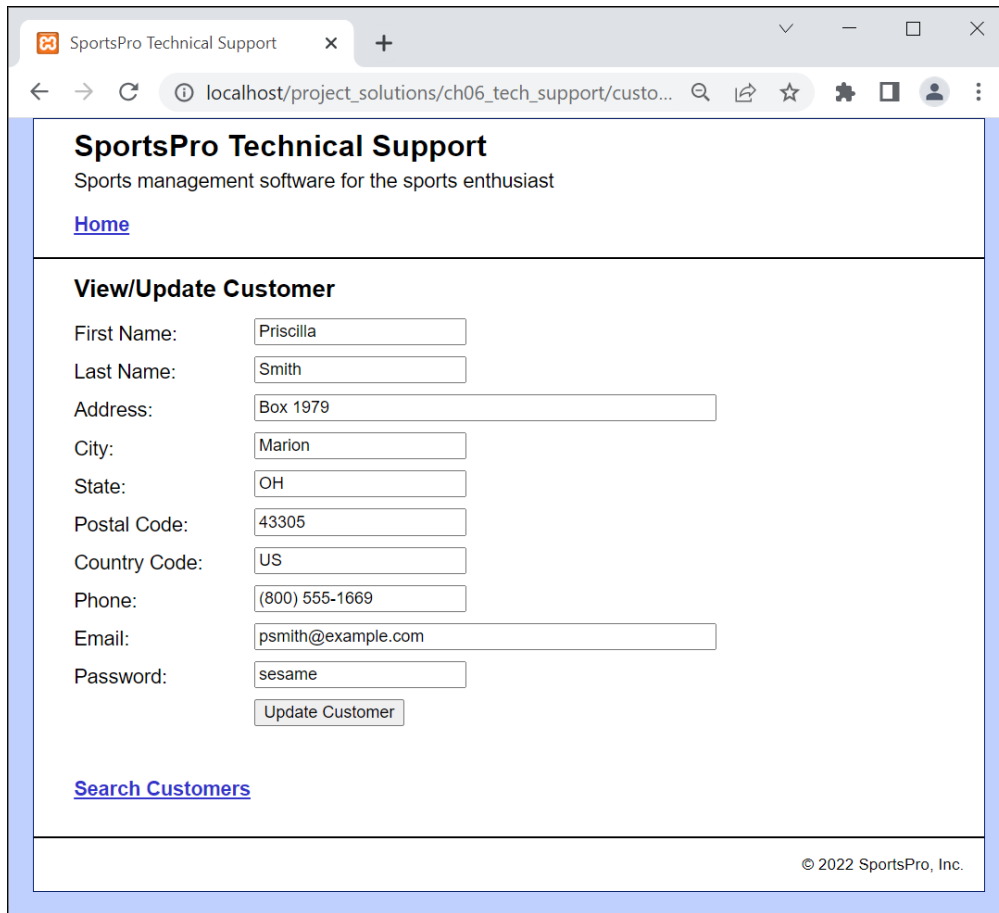
Name	Email Address	City	
Priscilla Smith	psmith@example.com	Marion	<input type="button" value="Select"/>
Vance Smith	vsmith@example.com	Boston	<input type="button" value="Select"/>

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Operation

- When the user enters a last name and clicks the Search button, the application displays a table of customers with the specified last name.
- When the user clicks the Select button for a customer, the data for that customer is displayed on the View/Update Customer page.

The View/Update Customer page



The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows the URL "localhost/project_solutions/ch06_tech_support/custo...". The page content includes a header with the title "SportsPro Technical Support" and the subtitle "Sports management software for the sports enthusiast". Below the header is a link labeled "Home". The main content area is titled "View/Update Customer" and contains a form with the following fields and values:

First Name:	Priscilla
Last Name:	Smith
Address:	Box 1979
City:	Marion
State:	OH
Postal Code:	43305
Country Code:	US
Phone:	(800) 555-1669
Email:	psmith@example.com
Password:	sesame

Below the form is a button labeled "Update Customer". At the bottom of the form area is a link labeled "Search Customers". The footer of the page shows the copyright notice "© 2022 SportsPro, Inc."

Operation

- When the user clicks the Update Customer button for a customer, the application updates the database. The user can also click the Back button or the Search Customers link to return to the Search Customers page without modifying the database.

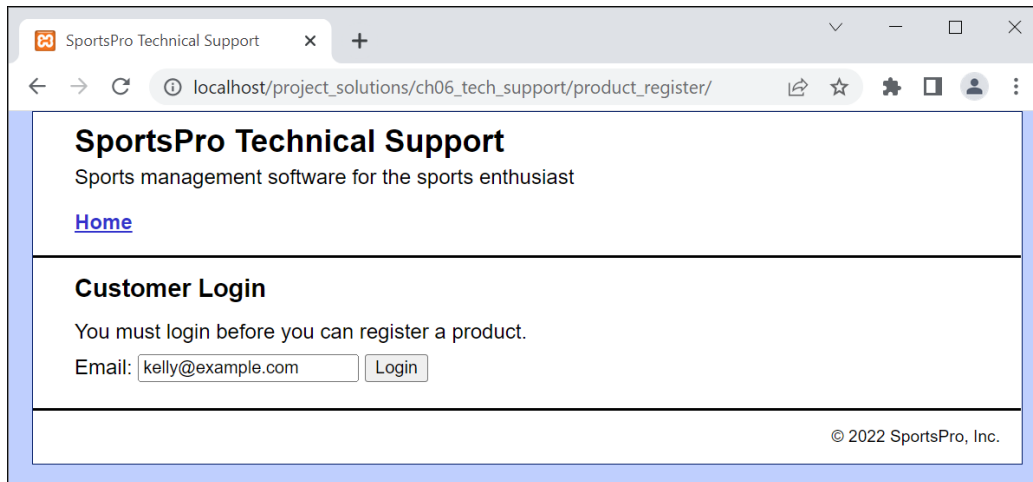
Specifications

- US is the country code for the United States.

Project 6-4: Register product

For this project, you'll create an application that lets a customer register a product.
(Required reading: chapters 1-6)

The Customer Login page

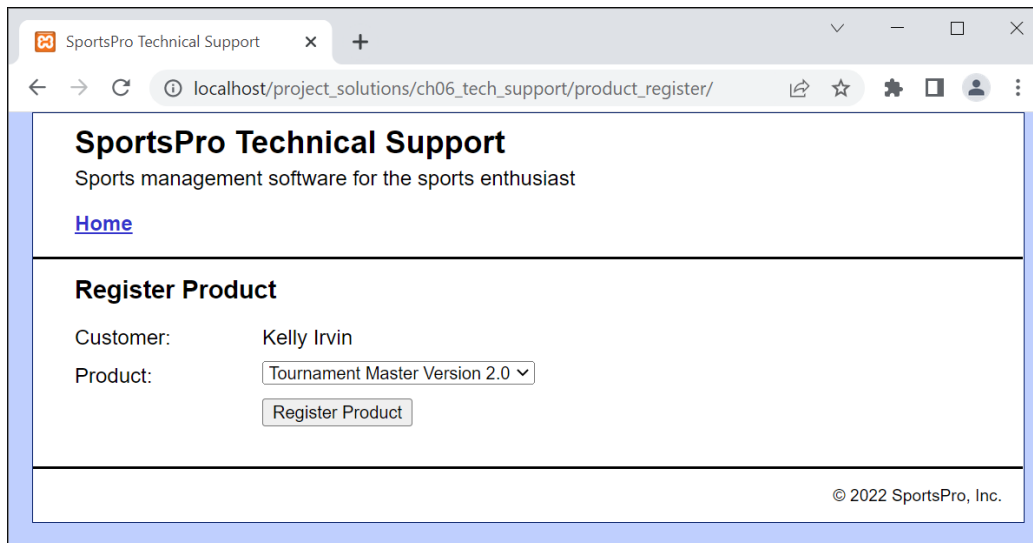


The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows the URL "localhost/project_solutions/ch06_tech_support/product_register/". The page content includes a header with the title "SportsPro Technical Support" and the subtitle "Sports management software for the sports enthusiast", followed by a link to "Home". Below this is a section titled "Customer Login" with the text "You must login before you can register a product." and a form with an "Email:" label, a text input field containing "kelly@example.com", and a "Login" button. At the bottom right, there is a copyright notice "© 2022 SportsPro, Inc.".

Operation

- To log in, the customer can enter his or her email address and click on the Login button.

The Register Product page (view 1)



The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows the URL "localhost/project_solutions/ch06_tech_support/product_register/". The page content includes a header with the title "SportsPro Technical Support" and the subtitle "Sports management software for the sports enthusiast", followed by a link to "Home". Below this is a section titled "Register Product" with a form. The form has two labels: "Customer:" with the text "Kelly Irvin" and "Product:" with a dropdown menu showing "Tournament Master Version 2.0". There is a "Register Product" button. At the bottom right, there is a copyright notice "© 2022 SportsPro, Inc.".

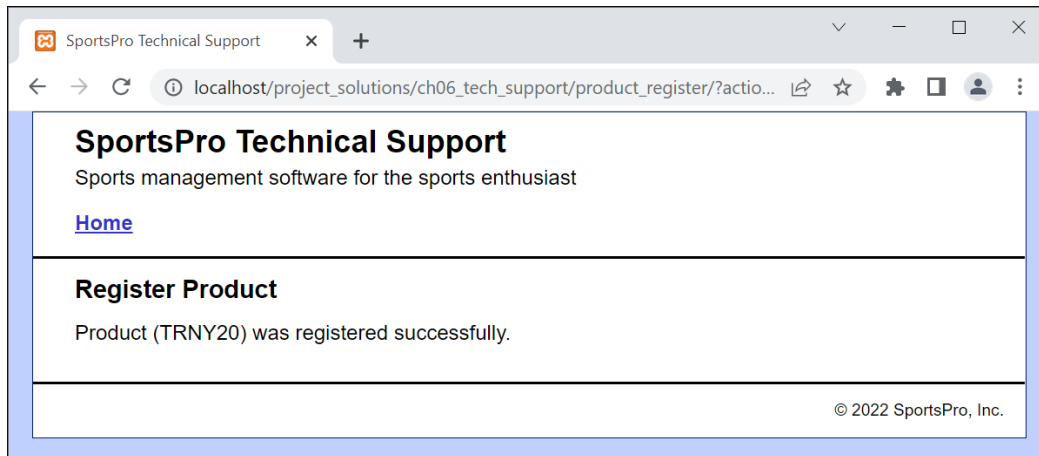
Operation

- To register a product, the customer can select the product and click on the Register Product button.

Specifications

- The Product drop-down list should include all products. If you have any trouble with this, look ahead to figure 7-5 in chapter 7 and figure 8-13 in chapter 8.

The Register Product page (view 2)



Operation

- After the customer clicks on the Register Product button, the application displays a message that indicates that the product was registered successfully. This message should include the product's code.

Project 6-5: Create incident

For this project, you'll create an application that lets an admin user enter new incidents. To do that, you'll begin by letting the user select a customer. (*Required reading: chapters 1-6*)

The Get Customer page

SportsPro Technical Support
Sports management software for the sports enthusiast
[Home](#)

Get Customer
You must enter the customer's email address to select the customer.

Email:

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Operation

- To get a customer, the user can enter the customer's email address. Then, the user can click on the Get Customer button to retrieve the customer's data and display the Create Incident page.

The Create Incident page (view 1)

SportsPro Technical Support
Sports management software for the sports enthusiast
[Home](#)

Create Incident

Customer: Kelly Irvin

Product:

Title:

Description:

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Operation

- To create an incident, the user selects a product from the Product drop-down list, enters a title, enters a description, and clicks on the Create Incident button.

Specifications

- The Product drop-down list should only include products that the customer has registered. If you have any trouble with this drop-down list, look ahead to figure 7-5 in chapter 7 and figure 8-13 in chapter 8.

The Create Incident page (view 2)

SportsPro Technical Support
Sports management software for the sports enthusiast
[Home](#)

Create Incident

This incident was added to our database.

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Specifications

- If successful, the Create Incident page should display a message that indicates that the incident was added to the database.

Project 7-1: Use a drop-down list

For this project, you'll modify the Manage Customers application so it uses a drop-down list to display the country. Also, you'll allow the user to use this drop-down to change the country. (*Required reading: chapters 1-7*)

The View/Update Customer page

The screenshot shows a web browser window with the address bar displaying `localhost/project_solutions/ch15_tech_support/custo...`. The page title is "SportsPro Technical Support". The main content area is titled "View/Update Customer" and contains a form with the following fields:

- First Name:
- Last Name:
- Address:
- City:
- State:
- Postal Code:
- Country: (dropdown menu is open showing a list of countries)
- Phone:
- Email:
- Password:

Below the form is an "Update Customer" button and a "Search Customers" link. The footer of the page displays "© 2022 SportsPro, Inc."

Operation

- When the user selects a customer, the View/Update Customer page should display the country in a drop-down list, and it should select the correct country for the customer. If you have any trouble with this, look ahead to figure 8-13 in chapter 8.
- The user can use the Country drop-down list to change the country for the customer.

Specifications

- In the Country drop-down list, display all countries that are available in the countries table in the tech_support database.
- When the page is first displayed, make sure to select the correct country for the specified customer. To do that, write code that sets the selected attribute of the `<option>` tag for the appropriate country.

Project 8-1: Improve controller code

For this project, modify one or more of the controller files so they use switch statements instead of if/else statements to select the appropriate action. (*Required reading: chapters 1-6 and 8*)

Project 10-1: Improve date handling

For this project, you'll modify the Manage Products application to improve its handling of the release date. (*Required reading: chapters 1-6 and 10*)

The Add Product page

SportsPro Technical Support

Sports management software for the sports enthusiast

[Home](#)

Add Product

Code:

Name:

Version:

Release Date: Use any valid date format

[View Product List](#)

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Operation

- The same as project 6-1, but the user can specify any valid date format for the release date.

Specifications

- On the Product List page, use the mm-dd-yyyy format for the release date (no leading zeros for the month or day). Also, don't display any data for the time.
- On the Add Product page, allow the user to use any standard date format.

Project 12-1: Use sessions

For the Register Product application, let the customer skip the Customer Login page if they have already logged in. (*Required reading: chapters 1-6 and 12*)

The Register Product page

The screenshot shows a web browser window with the title 'SportsPro Technical Support'. The address bar shows the URL 'localhost/project_solutions/ch15_tech_support/product_register/'. The page content includes a header with the title 'SportsPro Technical Support' and the subtitle 'Sports management software for the sports enthusiast'. Below the header is a 'Home' link. The main section is titled 'Register Product' and contains a form with the following fields: 'Customer:' with the value 'Kelly Irvin', and 'Product:' with a dropdown menu showing 'Draft Manager 1.0'. There is a 'Register Product' button. Below the form, it says 'You are logged in as kelly@example.com' with a 'Logout' button. At the bottom right, there is a copyright notice: '© 2022 SportsPro, Inc.'

Operation

- Same as project 6-4, but a customer who has logged in can skip the Customer Login page.
- The customer can view the message on the Register Product page to verify that they are logged in.
- To log out, the customer can click on the Logout button or close the browser. If the user clicks the Logout button, the Customer Login page is displayed.

Specifications

- Use a session cookie for the session. That way, the session ends when the user closes the browser.
- Store the customer data in the session. That way, you don't have to use hidden fields to pass the customer ID to the controller.

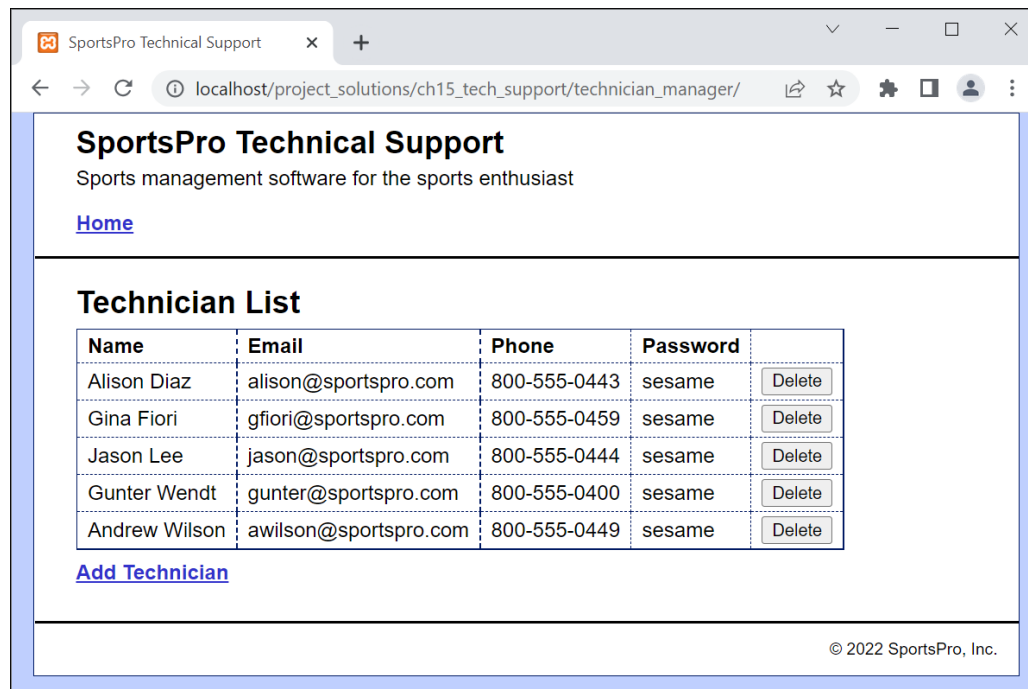
Project 13-1: Use type declarations

For the Manage Products application, modify the `add_product` and `update_product` functions in the `product_db.php` file so they declare the types of their parameters. Be sure to use strict typing. (*Required reading: chapters 1-6 and 13*)

Project 14-1: Use objects

For the Manage Technicians application, use the object-oriented techniques described in chapter 14. (*Required reading: chapters 1-6 and 14*)

The Technician List page



Operation

- Same as project 6-2. However, for the Technician List page, the First Name and Last Name columns are combined into a single Name column that contains the full name.

Specifications

- Use a class named `Database` to get a connection to the database.
- Store the `Database` class in a file named `database_oo.php`.
- Use a class named `Technician` to store data about each technician. This class should include a method that returns the full name of the technician.
- Store the `Technician` class in a file named `technician.php`.
- Use a class named `TechnicianDB` to store the methods that access the data. These methods should accept or return a `Technician` object or an array of `Technician` objects whenever appropriate.
- Store the `TechnicianDB` class in a file named `technician_db_oo.php`.

Project 15-1: Improve validation

For the Manage Customers application, improve the data validation so it uses the techniques described in chapter 15. (*Required reading: chapters 1-6, 14, and 15*)

The View/Update Customer page

SportsPro Technical Support
Sports management software for the sports enthusiast

[Home](#)

View/Update Customer

First Name:

Last Name: Required.

Address:

City:

State: Required.

Postal Code:

Country:

Phone: Use (999) 999-9999 format.

Email: Invalid email address.

Password: Too short.

[Search Customers](#)

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Operation

- Same as 6-3, but with data validation for all fields on the View/Update Customer page.

Specifications

- All fields except for phone are required.
- The first name, last name, address, city, and state must have at least 1 and less than 51 characters.
- The postal code must have at least 1 and less than 21 characters.
- The password must have at least 6 and less than 21 characters.
- The phone number must be in the (999) 999-9999 format.
- The email address must be a valid email address.
- You don't need to validate the country field since the drop-down list requires the user to select a valid country.

Project 15-2: Handle a TypeError

For the Manage Products application, modify the code that calls the `add_product` function so it catches a `TypeError`. (*Required reading: chapters 1-6, 13, and 15*)

The Error page



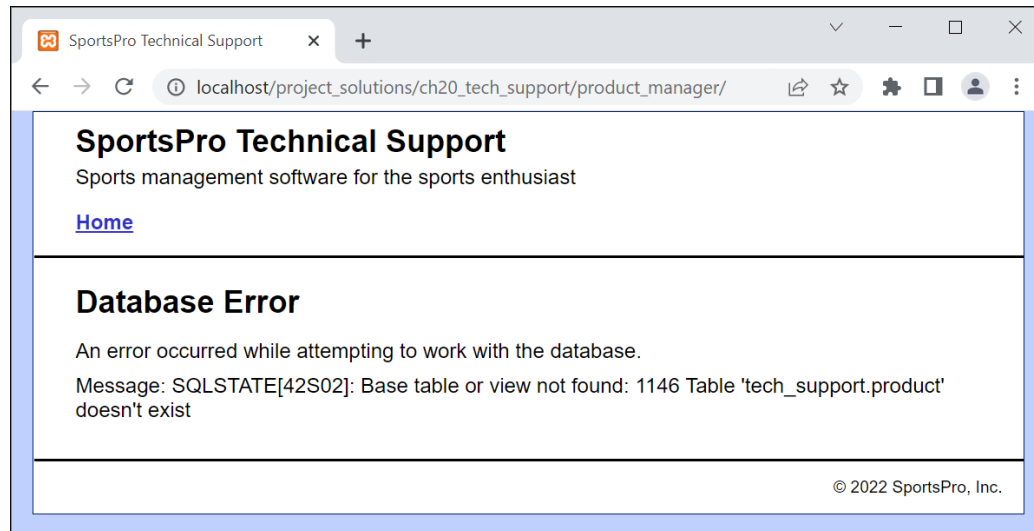
Specifications

- If a `TypeError` occurs when the user tries to add a product, the Add Product page should display the error message on the Error page.

Project 19-1: Handle data access errors

For all classes in the model, use try/catch statements to handle data access errors. Also, make sure to use prepared statements that return arrays instead of PDOStatement objects. (*Required reading: chapters 1-6 and 19*)

The Database Error page



Operation

- From the user's point of view, all applications should work the same as they did previously. However, if any application encounters a database error, the user should see a Database Error page like the one above.
- To simulate a database error, you can modify one of the SQL statements in the model so it causes an error. For example, on the page above, the SQL statement is trying to access the "product" table instead of the "products" table.

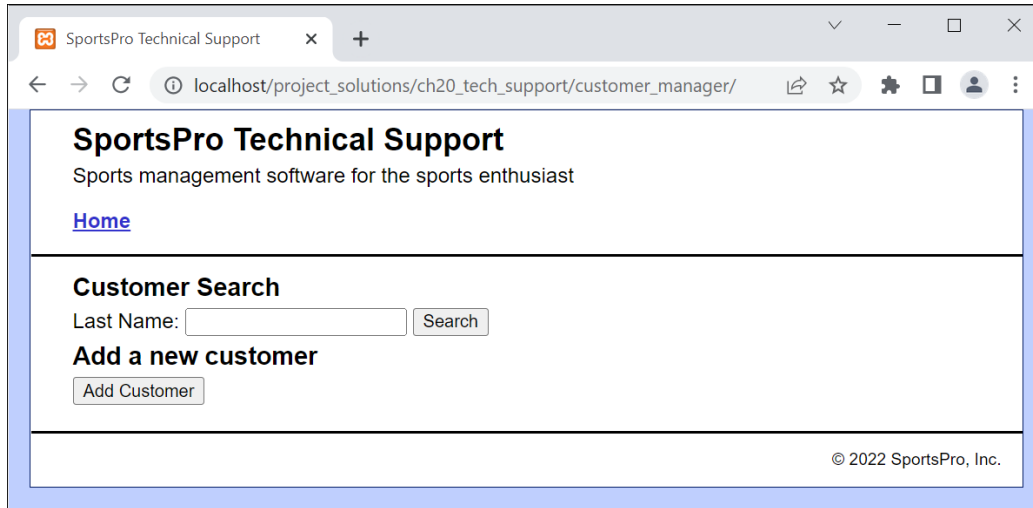
Specifications

- Modify all data access functions so they use a try/catch statement to handle any data access errors that may occur. To do that, they can display a Database Error page like the one shown above.
- Make sure all data access code uses prepared statements.
- Make sure all data access functions return arrays of rows.

Project 20-1: Use the same form for adding and updating data

Enhance the Manage Customers application so it allows you to add a new customer as well as update an existing customer. (*Required reading: chapters 1-6 and 18-20*)

The Customer Search page



The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows the URL "localhost/project_solutions/ch20_tech_support/customer_manager/". The page content is as follows:

SportsPro Technical Support

Sports management software for the sports enthusiast

[Home](#)

Customer Search

Last Name:

Add a new customer

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Operation

- Search works the same as project 6-3.
- The Add Customer button displays the Add/Update Customer page.

The Add/Update Customer page

The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows the URL "localhost/project_solutions/ch20_tech_support/custo...". The page content includes a header with the title "SportsPro Technical Support" and the subtitle "Sports management software for the sports enthusiast". Below the header is a link to "Home". The main content area is titled "Add/Update Customer" and contains a form with the following fields: First Name, Last Name, Address, City, State, Postal Code, Country (a dropdown menu with "United States" selected), Phone, Email, and Password. There is an "Add Customer" button at the bottom of the form. Below the form is a link to "Search Customers". The footer of the page shows the copyright notice "© 2022 SportsPro, Inc."

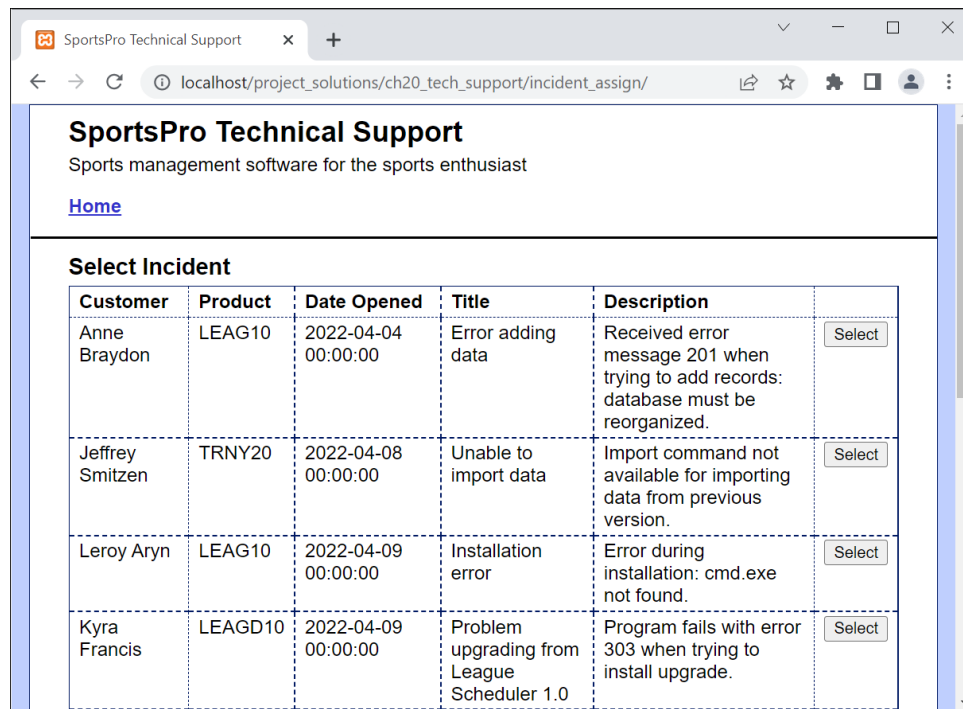
Operation

- If the user is adding a new customer, this page should display blank fields and the Add Customer button as shown above. The United States options should be selected from the Country drop-down list by default.
- If the user is viewing or updating an existing customer, this page should display the customer data and the Update Customer button as shown in project 6-3.

Project 20-2: Assign incidents

For this project, you'll create an application that assigns an incident to a technician.
(Required reading: chapters 1-6, 12, and 18-20)

The Select Incident page



Customer	Product	Date Opened	Title	Description	
Anne Braydon	LEAG10	2022-04-04 00:00:00	Error adding data	Received error message 201 when trying to add records: database must be reorganized.	Select
Jeffrey Smitzen	TRNY20	2022-04-08 00:00:00	Unable to import data	Import command not available for importing data from previous version.	Select
Leroy Aryn	LEAG10	2022-04-09 00:00:00	Installation error	Error during installation: cmd.exe not found.	Select
Kyra Francis	LEAGD10	2022-04-09 00:00:00	Problem upgrading from League Scheduler 1.0	Program fails with error 303 when trying to install upgrade.	Select

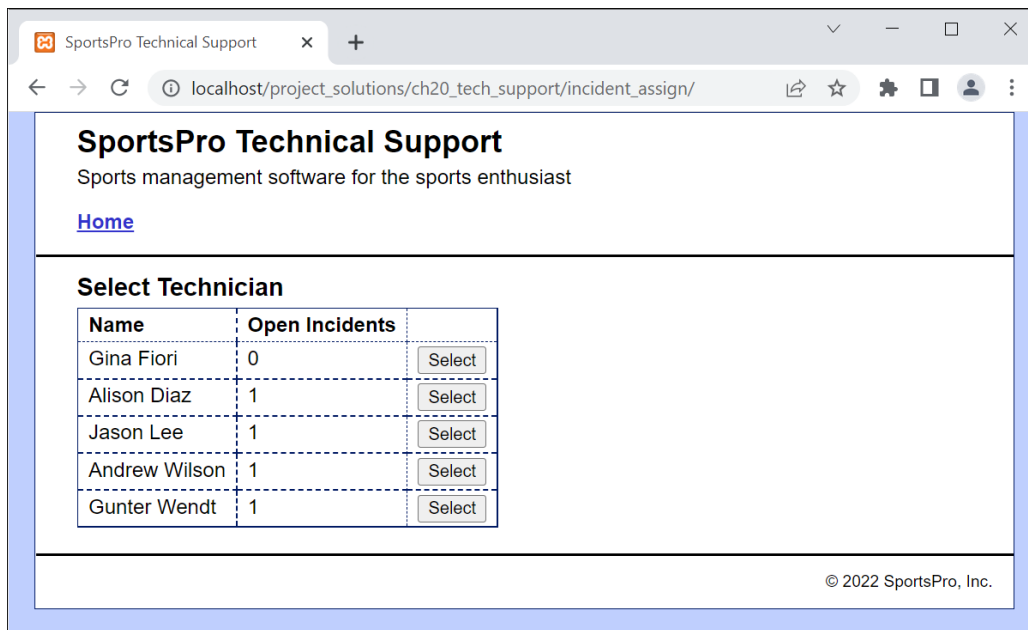
Operation

- When this application starts, the Select Incident page uses a table to display all of the incidents that have not been assigned to a technician (techID IS NULL).
- When the admin user clicks the Select button for an incident, the Select Technician page is displayed.

Specifications

- Use a join in the SELECT statement for this page so it retrieves data from the incidents and customers tables.
- Save the incident ID in the \$_SESSION array so it can be used later in the application.

The Select Technician page



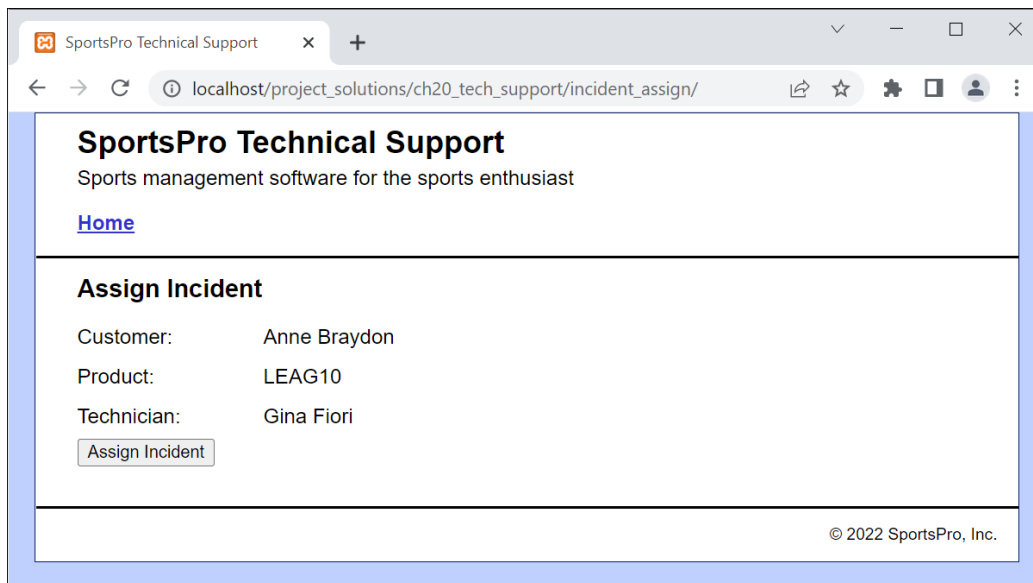
Operation

- When the user clicks the Select button for a technician, the Assign Incident page is displayed.

Specifications

- To get the number of open incidents for each technician, use a `SELECT` statement that includes a correlated subquery.
- Save the technician ID in the `$_SESSION` array so it can be used later in the application.

The Assign Incident page (view 1)

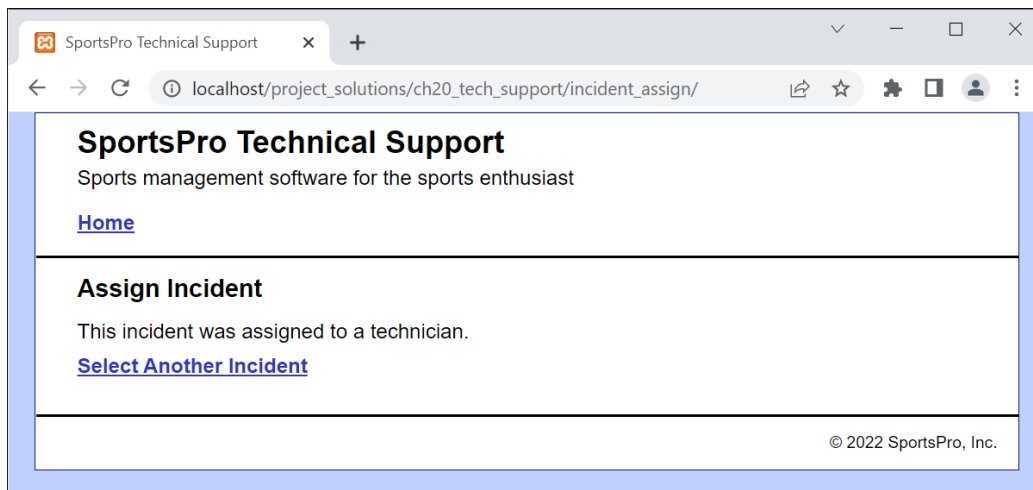


The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar displays "localhost/project_solutions/ch20_tech_support/incident_assign/". The page content includes a header with the site name and a "Home" link. Below this is a section titled "Assign Incident" containing a form with the following details: Customer: Anne Braydon, Product: LEAG10, and Technician: Gina Fiori. An "Assign Incident" button is located below the technician name. At the bottom right of the page, there is a copyright notice: "© 2022 SportsPro, Inc."

Operation

- When the user clicks the Assign Incident button, the selected incident is updated with the ID for the selected technician. If successful, this displays a message like the one shown below. Otherwise, an appropriate error message is displayed.

The Assign Incident page (view 2)



The screenshot shows the same web browser window as before, but the "Assign Incident" section now displays a confirmation message: "This incident was assigned to a technician." Below this message is a link labeled "Select Another Incident". The rest of the page, including the header and footer, remains the same.

Operation

- When the user clicks on the Select Another Incident link, the Select Incident page is displayed.

Project 20-3: Update incidents

For this project, you'll create an application that lets technicians update the rows in the incidents table. (*Required reading: chapters 1-6, 10, 12, and 18-20*)

The Technician Login page

SportsPro Technical Support
Sports management software for the sports enthusiast

[Home](#)

Technician Login
You must login before you can update an incident.

Email:

Operation

- After the technician logs in, the Select Incident page displays all incidents that have been assigned to the technician and have not been closed.

The Select Incident page

SportsPro Technical Support
Sports management software for the sports enthusiast

[Home](#)

Select Incident

Customer	Product	Date Opened	Title	Description	
Kendall Mayte	TRNY20	3/21/2022	Unable to activate product	Customer's product activation key does not work.	<input type="button" value="Select"/>

You are logged in as gunter@sportspro.com

Operation

- To select an incident, the technician can click on the Select button that corresponds to the incident. This displays the Update Incident page.
- To log out, the technician can click the Logout button.
- If there are no open incidents for the current technician, this page does not display a table of incidents. Instead, it displays a message that indicates that there are no open incidents and a Refresh List of Incidents link. However, this link only displays new incidents if new incidents have been assigned to the technician.

The Update Incident page (view 1)

SportsPro Technical Support

Sports management software for the sports enthusiast

[Home](#)

Update Incident

Incident ID: 31

Product Code: TRNY20

Date Opened: 3/21/2022

Date Closed:

Title: Unable to activate product

Description:

Customer's product activation key does not work.
Solution: Issued new activation key.

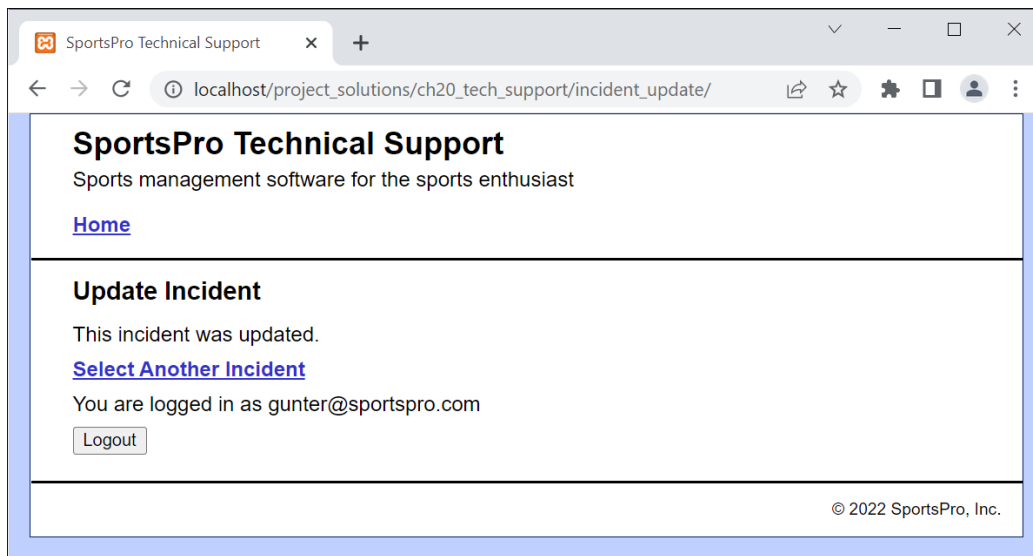
You are logged in as gunter@sportspro.com

© 2022 SportsPro, Inc.

Operation

- To update an incident, the technician can modify the description and optionally enter the date the incident was closed and click on the Update Incident button. If successful, this displays a message like the one shown below. Otherwise, an appropriate error message is displayed.
- To log out, the technician can click the Logout button.

The Update Incident page (view 2)



Operation

- To view a list of the remaining open incidents, the technician can click on the Select Another Incident link. This skips the Technician Login page and goes directly to the Select Incident page.
- If there are no open incidents for the current technician, this page does not display a table of incidents. Instead, it displays a message that indicates that there are no open incidents and a Refresh List of Incidents link. However, this link only displays new incidents if new incidents have been assigned to the technician.

Project 20-4: Display incidents

For this project, you'll create an application that displays all the assigned and unassigned incidents. (*Required reading: chapters 1-6, 10, and 18-20*)

The Unassigned Incidents page

SportsPro Technical Support Sports management software for the sports enthusiast Home			
Unassigned Incidents View Assigned Incidents			
Customer	Product	Incident	
Jeffrey Smitzen	Tournament Master Version 2.0	ID: 42 Opened: 4/8/2022 Title: Unable to import data Description: Import command not available for importing data from previous version.	
Leroy Aryn	League Scheduler 1.0	ID: 44 Opened: 4/9/2022 Title: Installation error Description: Error during installation: cmd.exe not found.	
Kyra Francis	League Scheduler Deluxe 1.0	ID: 45 Opened: 4/9/2022 Title: Problem upgrading from League Scheduler 1.0 Description: Program fails with error 303 when trying	

Operation

- When the application starts, it displays information about all incidents that have not yet been assigned to a technician.
- To display the incidents that have already been assigned to a technician, the admin user can click on the View Assigned Incidents link.

Specifications

- Display the customer name, the product name, and the four required columns of incident data (incident ID, date opened, title, and description).

The Assigned Incidents page

SportsPro Technical Support			
Sports management software for the sports enthusiast			
Home			
Assigned Incidents			
View Unassigned Incidents			
Customer	Product	Technician	Incident
Kendall Mayte	League Scheduler 1.0	Alison Diaz	ID: 27 Opened: 3/5/2022 Closed: 3/6/2022 Title: Could not install Description: Media appears to be bad.
Violet Beauregard	Tournament Master Version 2.0	Alison Diaz	ID: 28 Opened: 3/14/2022 Closed: OPEN Title: Error importing data Description: Received error message 415 while trying to import data from previous version.
Nashalie Angelica	Tournament Master Version 2.0	Jason Lee	ID: 32 Opened: 3/24/2022 Closed: OPEN

Operation

- To display the incidents that haven't been assigned, the admin user can click on the View Unassigned Incidents link.

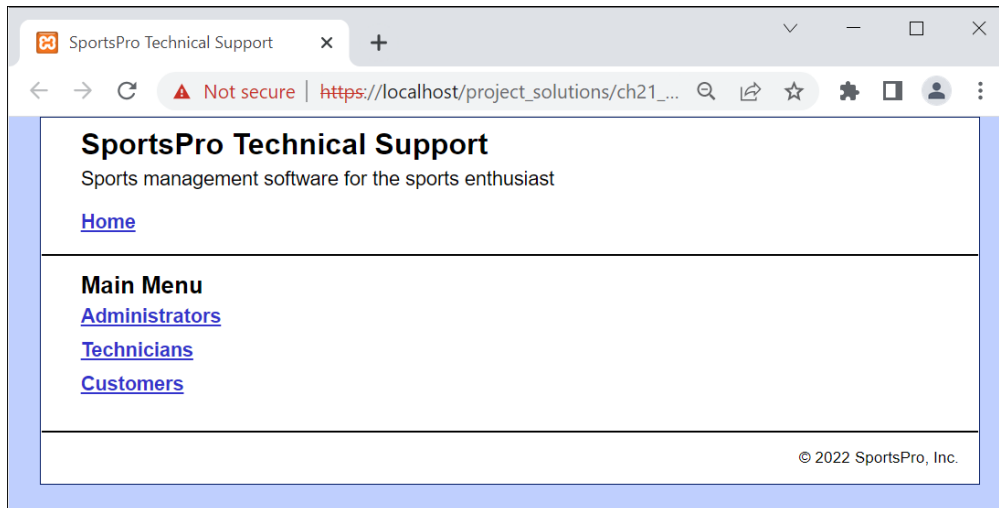
Specifications

- Display the same data as the Unassigned Incidents page plus the technician's name and the date the incident was closed. If the incident hasn't been closed, display "OPEN" instead of the date.

Project 21-1: Add user authentication

For this project, you will use a secure connection and require all users to log in including customers, technicians, and administrators. (*Required reading: chapters 1-6, 10, and 21*)

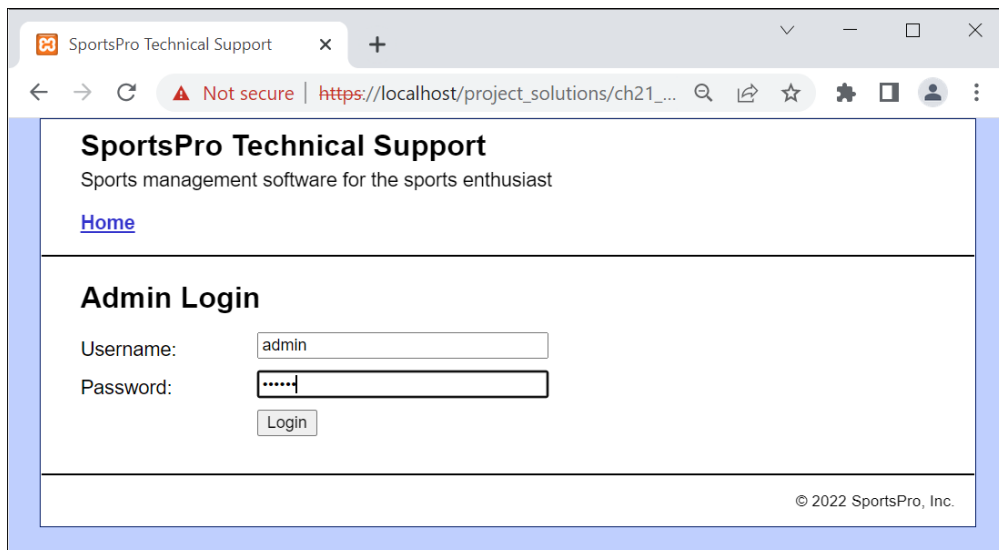
The Home page



Operation

- If you've been using the starting Home page for these projects, you'll have to replace it with a Home page like the one above.
- When the user clicks one of the links on the main menu, the application displays a login form that's appropriate for the type of user.

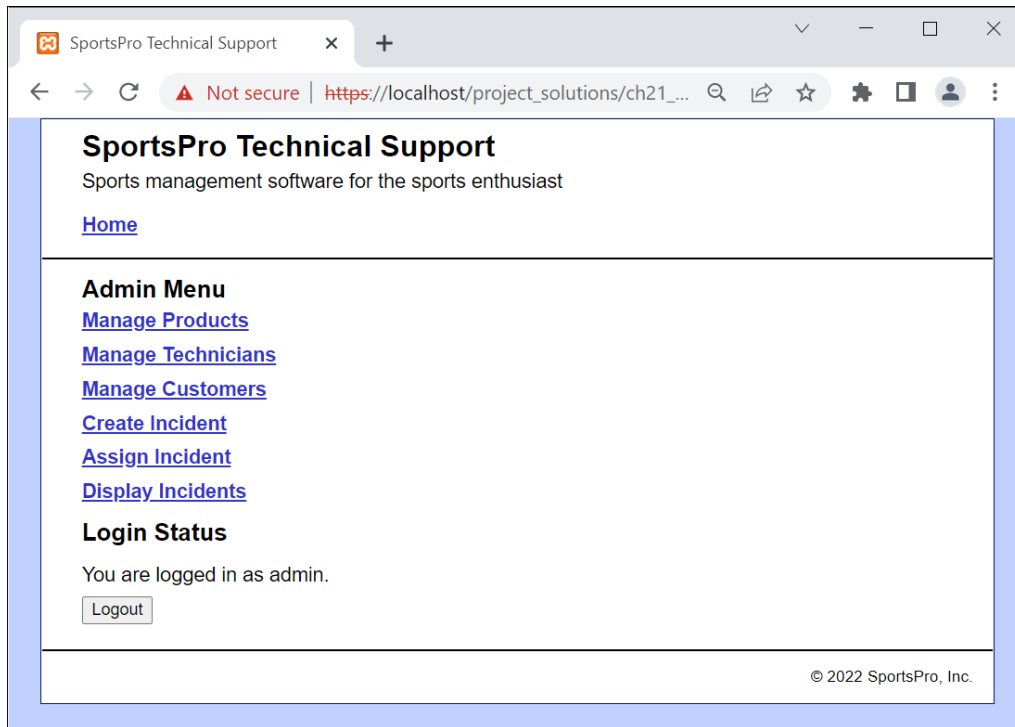
The Admin Login page



Operation

- When the user enters a valid username and password, the Admin Menu page is displayed. Otherwise, the Admin Login page is displayed again.
- To log in, you can use "admin" as the username and "sesame" as the password.

The Admin Menu page



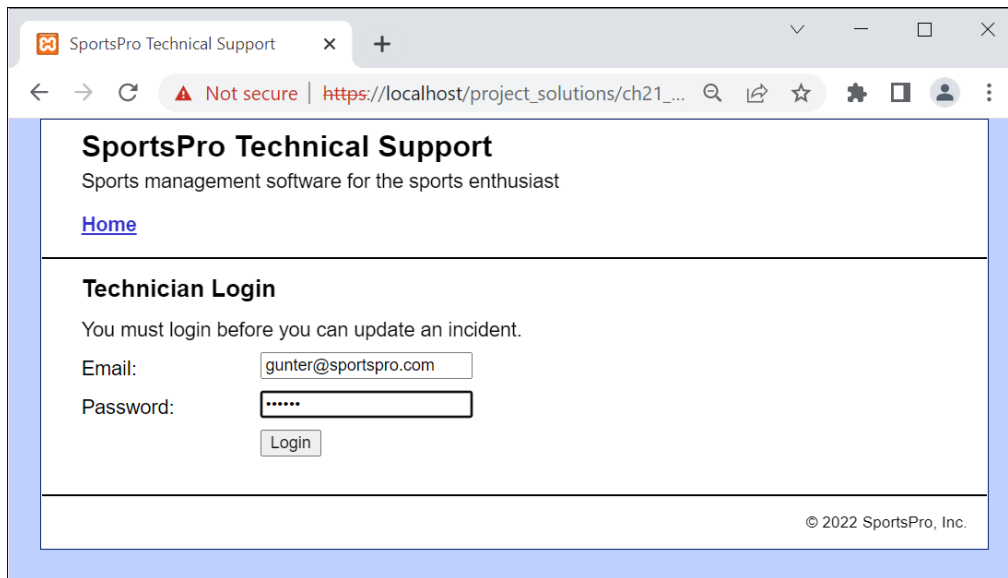
Operation

- To navigate to an application, the user can click on the appropriate link.
- The page displays a message that indicates the login status.
- To log out, the user can click on the Logout button. This displays the Main Menu page.

Specifications

- All pages should include a link to the Home page in the header for the page.
- All pages should use a secure (https) connection.
- No pages should allow an unauthorized user to access them. For example, only a user that's logged in as an administrator should be able to access the Admin Menu page.

The Technician Login page

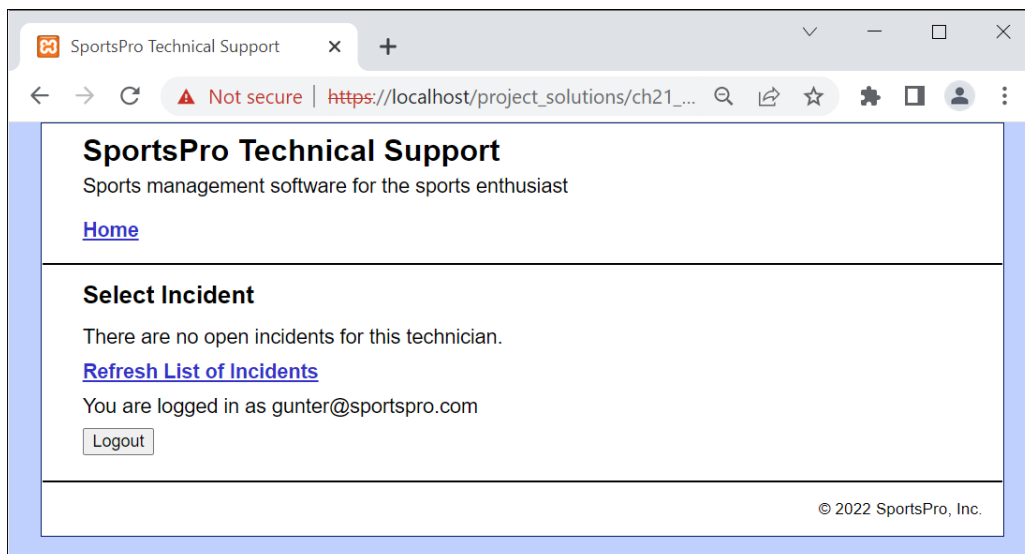


The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows a "Not secure" warning and the URL "https://localhost/project_solutions/ch21_...". The page content includes a header with the site name and a "Home" link. The main section is titled "Technician Login" and contains a message: "You must login before you can update an incident." Below this are input fields for "Email:" (containing "gunter@sportspro.com") and "Password:" (containing "*****"). A "Login" button is positioned below the password field. The footer of the page displays "© 2022 SportsPro, Inc."

Operation

- When the user enters a valid technician email and password, the Select Incident page is displayed. Otherwise, the Technician Login page is displayed again.

The Select Incident page

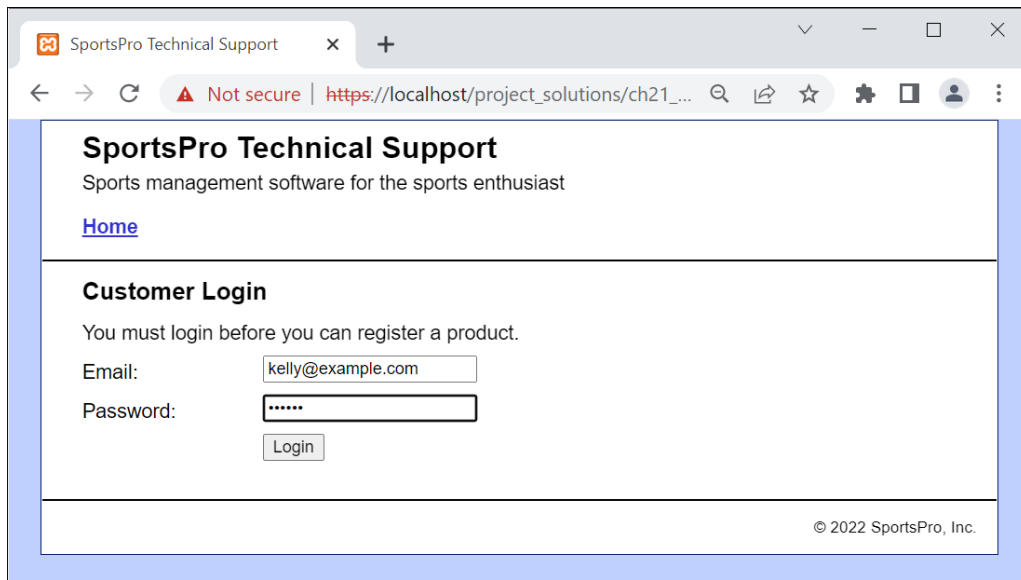


The screenshot shows the same web browser window as the previous one, but the page content has changed. The header remains the same. The main section is titled "Select Incident" and contains a message: "There are no open incidents for this technician." Below this is a link labeled "Refresh List of Incidents". Further down, it says "You are logged in as gunter@sportspro.com" and includes a "Logout" button. The footer still displays "© 2022 SportsPro, Inc."

Operation

- Same as project 20-3, but the bottom of the page displays a message about the technician that's logged in and provides a Logout button that the technician can use to log out.
- If there are open incidents for the current technician, this page displays a table of incidents as shown in project 20-3.
- If there are no open incidents for the current technician, this page displays a message and a link as shown above. However, this link only displays new incidents if new incidents have been assigned to the technician.

The Customer Login page

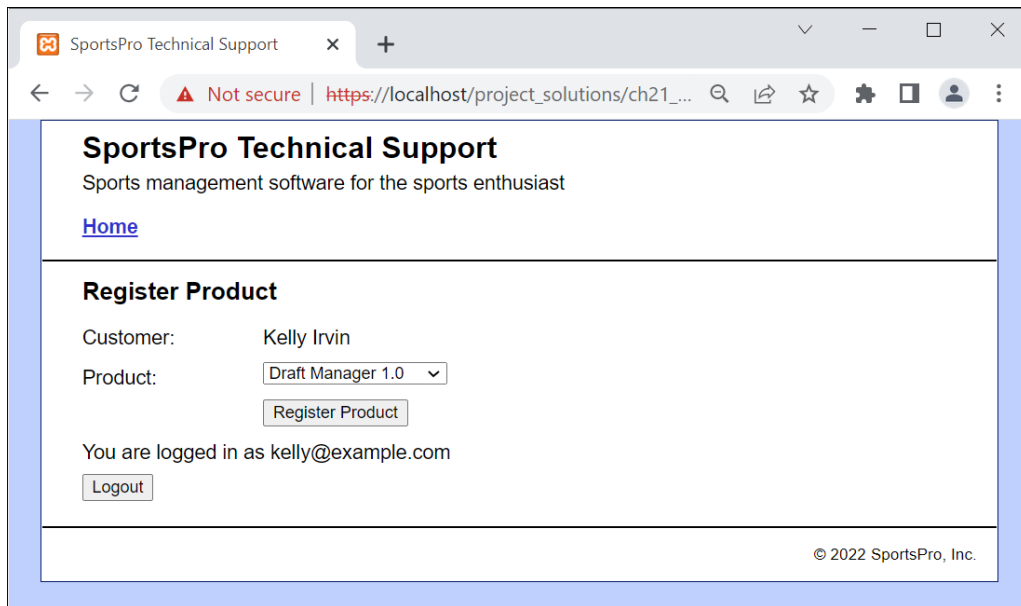


The screenshot shows a web browser window with the title "SportsPro Technical Support". The address bar shows a "Not secure" warning and the URL "https://localhost/project_solutions/ch21_...". The page content includes a header with the site name and a "Home" link. Below this is a "Customer Login" section with a message: "You must login before you can register a product." The login form has two fields: "Email:" with the value "kelly@example.com" and "Password:" with masked characters ".....". A "Login" button is positioned below the password field. At the bottom right of the page, there is a copyright notice: "© 2022 SportsPro, Inc."

Operation

- When the user enters a valid customer email and password, the Register Product page is displayed. Otherwise, the Customer Login page is displayed again.

The Register Product page



The screenshot shows the same web browser window as the previous one, but the page content has changed to the "Register Product" section. The header remains the same. The "Register Product" section contains a message: "You must login before you can register a product." (Note: This message is present in the screenshot despite the user being logged in). The form has two fields: "Customer:" with the value "Kelly Irvin" and "Product:" with a dropdown menu showing "Draft Manager 1.0". A "Register Product" button is positioned below the product dropdown. Below the form, there is a message: "You are logged in as kelly@example.com" and a "Logout" button. At the bottom right of the page, there is a copyright notice: "© 2022 SportsPro, Inc."

Operation

- Same as project 6-4, but the bottom of the page displays a message about the customer that's logged in and provides a Logout button that the customer can use to log out.