1. What are the 4 components that involve the login process?

*The four components for the login process are:*

*A form to collect and submit login information.*

*A script to validate the information submitted.*

*A database query to compare the submitted information with what is already stored.*

*A cookie or session that identifies the user as authorized to access the requested resource.*

1. What 2 files is the login.php page dependent on? Why is the login.php page dependent on these pages?

*The login.php page is dependent on login\_page.php because it contains the page layout and form that the user will interact with to access the login functionality. Additionally, the login\_functions.php page is required to handle the interactions with the database and verification of the data supplied by the client.*

1. How is the header( ) function (from chapter 11) utilized in this lab? Show the code and briefly explain what it does.

*This lab uses the header() function from inside the redirect\_user() function, which first builds a url to direct the user to and passes it (as the variable $url) to the header() function, which informs the client’s browser of where to navigate to, without further interaction from the user. Finally, the script exits.*

*The code in the function appears as below:*

*header(“Location: $url”);*

1. Compare and contrast cookies and sessions.

*Cookies contain data which is stored in the clients browser, where it remains accessible to the client user until expiration. Sessions store their data on the server which can only be retrieved by a client with a validated session cookie (which is just a unique identifier issued to the client).*

1. What does the dirname( ) function do?

*The dirname() function returns the path of the parent directory a a file specified as the string passed to the function.*

1. What does the trim( ) function do?

*The trim() function removes any excess whitespace from a string.*

1. How do you begin and terminate a session?

*A session must be started with the session\_start() function and can be terminated with the session\_destroy() function.*

1. How do you delete an existing cookie?

*A cookie can be deleted using the setcookie() function and passing the cookie name as the only parameter or setting the expiration of the cookie to a time in the past.*

1. What arguments can the setcookie( ) function take?

*The setcookie() function can take up to seven parameters, which are: name, value, expiration, path, host, secure, and httponly).*

1. What debugging steps can you take when you have problems with sessions?

*The steps to take when debugging a session should be to first make sure that nothing is being sent to the browser prior to any session data. Next, any data stored in the session can be accessed and verified by printing values from the super-global $\_SESSION array.*

1. How do you reference values previously stored in a cookie?

*Cookies can be accessed via the global constant $\_COOKIE and a specific cookie can be referenced like any other array value, by adding the name of the cookie as a string value in array brackets such as: $\_COOKIE[‘cookie’].*