

WCF Report

by Josh Benjamin Rowland

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P145133

Distributed Enterprise Applications

Retailer WCF

Dr Tim Bashford

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The Application

The application developed is incomplete and very simple however it does contain a successful method of registering a user to the database and allowing specific users to login which can be used to ensure that only those who have verified the account to login should the application go live as it is not uncommon for e-commerce systems to be spammed by bots constantly trying to make accounts and access information. When the register button is pressed it runs the Sql code to insert the data into the database and when logging in the Sql checks that the details match those in the database however it only allows a specific user to login as mentioned above. The code could be changed to allow anyone to login however having only verified users to login will increase the site security. The user can then select both books by clicking the button however it doesn't display the total in the total list box next to it. To ensure the user doesn't click the button any extra times than intended the button produces a message box informing them they have selected the book. Clicking the buy button will then produce another message box telling the user they have purchased the item however it will do this regardless of if they are logged in or not. As simple good practise the user should be logged in to buy any items so that there is a real record of the user and their details. There are two separate tables in the database one for users which contain the username password and id while the Items table contains the item id, name and cost which should have appeared in the total list box.

Security

Security is a massively important aspect of any e-commerce system as it will be handling currency transactions and handling users bank details. If the system were to have holes in the security, then it could be easy for hackers to steal information and use a user's bank details to transfer money to themselves or sell their information on to another party. The application being a very simple WCF application has password protection by hiding the password in the event someone is viewing your screen. When sending data there is only really the need to use HTTPS as it provides a secure channel to send information through[1]. HTTPS is set in the serviceMetadata in the app.config and it works by using two 'keys' that encrypt the information which are a public and private key which are made so anything encrypted with the public key can be decrypted with the private key[1]. The private key should be kept on the web sever while the public key is distributed to anyone that needs information to be decrypted[1]. The WCF application however was developed as a peer to peer application and so it uses netPeerTcpBinding which requires a security mode to be set and uses binary encoding but in this application no mode has been set but the developer can change at will to suit the system[2]. Another common security method is manually creating a FileStream, cryptography engine and keys to secure files so only the people with the correct decryption can unlock the data and by doing it manually it allows more flexibility in the encryption process. The security will change depending on the type of WCF application as peer to peer has to use peer based binding while a one-way system could use mexHttpBinding as they are different methods of creating a WCF application.

Live System

An e-commerce system is a very important aspect of any commercial website or application that will use transactions and must not go live until it is bug free and secure because the system will be handling bank information, user and business information and currency transactions so if there are security holes or bugs that cause the loss of data and money all parties involved will have issues to deal with which is why this application cannot go live until it is fully secure and complete. Many businesses use the third-party e-commerce system PayPal in place of creating their own as PayPal is a very successful system that is already in place and secure. By using PayPal the user can safely and quickly pay for the products because the user will have an account where they have already securely linked their bank and card details so they can simply pay by inputting their email and password for the account[3]. Using PayPal, the user could potentially bypass creating an account with the business and simply use their PayPal account at the checkout as it would contain all the relevant information that would otherwise be stored with the business. Despite the application being a Peer to peer application it is still possible to use PayPal as a third-party payment service and may be the better choice as there is no server to host the payment system just the computers of the current users. Ideally you would not make a business a peer to peer system it would be either a one-way or request-response based system as there will be a central server up at all times to process requests while peer to peer is better suited for short term connections such as instant messaging or file transfers like bitTorrent not e-commerce websites.

References

- [1] Comodo, "What is HTTPS?" [Online]. Available: <https://www.instantssl.com/ssl-certificate-products/https.html>.
- [2] "NetPeerTcpBinding.Security Property (System.ServiceModel) | Microsoft Docs." [Online]. Available: https://docs.microsoft.com/en-us/dotnet/api/system.servicemodel.netpeertcpbinding.security?view=netframework-4.7.2#System_ServiceModel_NetPeerTcpBinding_Security. [Accessed: 03-May-2018].
- [3] PayPal, "How it Works?" [Online]. Available: <https://www.paypal.com/us/webapps/mpp/pay-online>.

WCF Report

GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

Instructor

20/100

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GRADING FORM: SMU GENERIC_GJ

JOSH BENJAMIN ROWLAND

20

RESEARCH-INFORMED LITERATURE



A small number of web-only sources used.

1

KNOWLEDGE AND UNDERSTANDING



Some evidence of knowledge and understanding. Definitely not a case for peer to peer, however - an unusual choice which the report mentions, but doesn't at all justify. Significantly lacking features.

6

ANALYSIS



Some limited analysis completed, but a lack of either synthesis or in-depth conclusions.

3

PRACTICAL APPLICATION AND DEP.



Unfortunately, a very, very long way from complete. What you have is fine, there's just nowhere near enough done to warrant a higher mark in this section.

5

SKILLS FOR PROFESSIONAL PRAC.



Reasonable spelling, punctuation and grammar. Report is presented well enough.

5