SECURE THE USER SESSION FROM COOKIE HIJACKING

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The increasing dependence on web applications has led to an increase amount of sensitive data being transmitted over the internet. This data is stored in cookies, which are the small text files that is used by web application to track user preference and activity. However, cookies are vulnerable to attacks such as cookie hijacking which can compromise user privacy and security.

Cookie hijacking is a technique that is used by attackers to steal user credentials and sensitive information by intercepting and modifying cookies which can result in financial fraud, identity theft and loss of confidential information for organizations that fail to implement a good cookie security measures.

Purpose of this project is to investigate the problem of cookie hijacking and develop an effective technique for preventing these attacks in web applications. This project will explore the cookie hijacking attacks that intercept cookie by using cookie hijacking simulation tools to prove the outcome of the hijacking and propose new methods for preventing these attacks. This project will use a practical experimentation to develop effective solutions for cookie hijacking. The results of this project will contribute to the development of a more secure and trustworthy internet environment, where users feel confident that their confidential information is protected from malicious attacks.

1.2 PROBLEM STATEMENT

Ecommerce websites are highly vulnerable to cookie hijacking attack, which can compromise the security of user data and lead to financial loss for both, the customers and

business. When the attacker gains access to user's cookie, they can impersonate as the user and perform malicious actions such as identity theft, making fake purchases or modifying the user settings.

The problem is that, many ecommerce website do not have sufficient measures to prevent or detect cookie hijacking attacks. Where the traditional security techniques such as SSL encryptions and secure password policies, may not enough to protect against sophisticated attackers who use advanced techniques to steal cookies.

As a result, there is a need for more comprehensive and proactive approach to cookie hijacking prevent in ecommerce websites. The aim of this project is to develop and an effective technique for prevention of cookie hijacking attacks and enhance the security of ecommerce websites for both, customers and business.

1.3 OBJECTIVES

The objectives of this project are:

i. To assess the effectiveness of web browser security features such as HttpOnly and Secure flags in preventing cookie hijacking attacks in **NAME** ecommerce website.
ii. To develop new techniques or enhance the existing methods for preventing cookie hijacking attack in **NAME** ecommerce website.
iii. To assess the impact of cookie hijacking attacks on user privacy and security in **NAME** ecommerce website.

1.4 SCOPE

The scopes of this project are:

USER SCOPE

i. Administrator of the *NAME* ecommerce website which are managers and staffs.
ii. Customers of the **NAME** ecommerce website.

SYSTEM SCOPE

Administrator

- Can view the overall transaction of the order.
- Manage orders, view order history and track shipments.
- Update stock of the products.
- Can generate the report of customer transaction.
- Can create new administrator credential for the staffs.

Customer

- Can create account, log in, manage their personal information and payment information.
- Can view the product catalog which includes a list of products available for purchase with information such as price, description and availability.
- Add products to the cart, view cart and proceed to checkout.
- Payment gateway. To allow users to securely submit payment information and complete their purchase.

DEVELOPMENT SCOPE

i. Using notepad++ to code HTML, CSS, JAVASCRIPT, PHP to develop the ecommerce website.
ii. Using XAMPP as the database server and stored cookie.
iii. Using the Burp Suite as the cookie hijacking simulation tool, for the intercepting of cookie hijacking of the user session.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter will discuss the literature review of ….

2.2 REVIEW OF EXISTING ECOMMERCE SYSTEM → compare 3 website (adidas, al-ikhsan…)?? + 3 simulation software ?????

2.2.1 BURP SUITE

2.2.2 OWASP

2.2.3 BeEF FRAMEWORK

2.3 COMPARISON OF EXISTING SYSTEM

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter will discuss about the method that has been selected including the phases involved. **** ecommerce website will use the Rapid Application Development (RAD) as the methodology for developing the system from the beginning development until the end before delivering the product to the customer. According to (……) said that as…. RAD is an iterative software development application that focuses on delivering the product in a shorter time frame.

Besides, RAD can cuts the cost to fix the error during development because it involves creating prototypes and testing them with users to get quick feedback and make improvements. There are four phases involved in RAD which are Requirements Planning Phase, User Design Phase, Construction Phase and Cutover Phase.

3.2 RAPID APPLICATION DEVELOPMENT (RAD) IN **** ECOMMERCE SYSTEM

3.2.1 REQUIREMENT PLANNING PHASE

In requirement planning phase, the developer works with the targeted users to collect the requirements regarding the system. During this phase, it is very important to get these requirements in order to understand what the system should do and how it should perform. Also, I need to make a use case diagram with context diagram according to the requirement of *Name** ecommerce website.

3.2.2 SYSTEM DESIGN PHASE

In system design phase, the requirements that is identified in the Requirement Planning phase are translated into a detailed system design. In this phase, it is involved in creating the design of the system, defining the system architecture including the hardware and software components, and creating detailed design of each component is designed in details including its functionality, inputs and outputs that represent the real system that is implemented into the prototypes. Here, developer need to design the prototype which is the user interfaces that is based on the stakeholder's requirements.

3.2.2.1 HARDWARE AND SOFTWARE

3.2.2.1.1 HARDWARE REQUIREMENTS

3.2.2.1.1 SOFTWARE REQUIREMENTS

3.2.3 DEVELOPMENT PHASE

In development phase, it is where the phase where the system is actually built which is called the prototype for the testing process to obtain the feedback from the stakeholders. This phase will follow the Requirement Planning and System Design phases, where the requirements are defined and how the system is designed.

In developing this **NAME** ecommerce website, I code using the HTML, PHP, CSS and Javascript in order to build the system according to the design requirements. For the database, I will use the XAMPP as the database server.

During the development of the prototype, I need to get the stakeholders to test it and obtain feedback from them and any necessary changes to the system are made. This process of obtaining the feedback and making changes is being repeated until the system meets the requirements. I would need to make the user acceptance test (UAT) form to get the feedback of the system. The output for this phase is the functional prototype of the system, where it can demonstrate the system's functionality and obtain the feedback from stakeholders. Please refer to Appendix *** User Acceptance Testing (UAT) and Appendix ** User Manual.

3.2.4 CUTOVER PHASE

This is the final stage of RAD, where the system is deployed and made operational. This phase follows the Development and Testing phases, where the system is developed, tested and enhanced. It involved the system maintenance and support for the **NAME** ecommerce website, including the updates, bug fixes and technical support.

3.3 PROJECT REQUIREMENTS

The list of functional requirements, non-functional requirements, constraints and limitations to design the **NAME** ecommerce website.

3.3.1 FUNCTIONAL REQUIREMENTS

3.3.2 NON-FUNCTION REQUIREMENTS

3.3.3 CONSTRAINTS AND LIMITATIONS

REFERENCES