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COS492: Senior Integration Project

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SIP Proposal

**Topic:** The Role of Frameworks in Common Web-Based Cyber Attacks

**Objective:** To collect publishable, statistical data related to the vulnerability of web applications built on ASP.NET, J2EE, Zend, and Ruby on Rails for a comparative analysis of how secure those web frameworks are.

**Thesis:** When an application is built to the security specifications recommended by the manufacturers of each web framework, they will be equally secure against web-based cyber attacks.

**Approach:**

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| --- | --- |
| **Done by** | **Goal** |
| **9/26** | **ASP.NET Application Developed and Ready for Testing** |
| **10/10** | **J2EE Application Developed and Ready for Testing** |
| **10/24** | **Zend Application Developed and Ready for Testing** |
| **11/7** | **Ruby on Rails Application Developed and Ready for Testing** |
| **11/14** | **Security Testing Complete: Data Collected** |
| **11/22** | **Initial Draft Submitted to Dr. Humphries** |
| **12/5** | **Final Draft Submitted to Dr. Humphries** |
| **12/12** | **Request for Publication Submitted to ???** |

**Application Specifications**

The application to be tested will simulate a front end to a database which stores credit card information. The functionality will be the same in all four versions of the application. All versions will access the same MySQL database where the data will be stored.

The database will contain example data for all relevant information for credit card transactions. There will be two user roles in the system: users and admins.

Users will be able to

* Log into the system with a given username and password
* View their own information

Admins will be able to

* Register new users into the database
* Delete users from the database
* View anybody’s information
* Designate new admins

**Penetration Testing Specifics**

The following penetration tests will be done against each application from a virtual machine running Kali Linux. Each application will be hosted in a virtual machine on the same local network as the Kali Linux machine.

XSS Attacks

SQL Injection Attacks

Can/should I add more?