Nick Gilbert

Dr. Humphries

COS492: SIP

November 19, 2016

Bachelor’s Thesis Outline

Topic: DVWA for .NET

Abstract:

Web based cyber-attacks are a major threat to any person or business with an online presence. Applications such as the Damn Vulnerable Web App exist to demonstrate the most common web attacks including SQL Injection, XSS attacks, and brute force attacks. While the DVWA is the go-to application for demonstrating attacks on PHP applications, there is no comparable application for ASP.NET. The goal of this project is to create a DVWA-like application built on ASP.NET.

Outline

* Intro
  + Thesis: Web development frameworks are a critical yet underemphasized aspect to consider in conducting and defending against SQL injection attacks.
* Section I: The breeding ground for SQL vulnerabilities
  + What kind of websites use databases
  + What kind of data is stored in these databases
  + What makes a website vulnerable to SQL injection
* Section II: Introducing Frameworks
  + The role of frameworks in web development
    - Make development easier, abstract basic concepts
    - Underlying code handles some security
      * Config files set to secure by default
      * Automatically parameterizes variables
  + Percentage of websites that use frameworks
* Section III: Examples of Frameworks and their benefits
  + Four big worlds of Web Development
    - Microsoft – ASP.NET
    - Java – Google Web Toolkit
    - PHP – Zend
    - Ruby – Ruby on Rails
* Section IV: Other tools
  + Paypal
    - Abstracts important info (i.e. Credit Card Data) from rest of web app
    - Easy to add to most websites
  + Pen Testing Tools
    - Viper paper
* Conclusion