**Object-Oriented Design II**

SSE 554

Dr. MacNeil

Spring 2017

**Project III**

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Matthew Robison

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Project Logistics

## Purpose

For Project III, the purpose was to choose a topic new to us from the text, demonstrate our capabilities through software design, coding, and finally unit testing while using some form of source control. For Project III, we have decided to learn about Security from the text. The features of the project requirements are outlined in the table below.

Table . Project II Composition

|  |  |
| --- | --- |
| Team Composition | Brent Bitler, Matthew Robison |
| Topic | Security |
| Distributed Version Control System | GitHub |
| Programming Language | C# |
| IDE | Visual Studio 2015 |
| TDD Tool | Built-in VS unit test tool |

Authentication

## Overview

The first foray into program security is to find out information about the user to see if they are first authorized to utilize an application. Several questions can be asked to begin investigating this very issue: Is the user who they claim to be? Is the user being impersonated by someone with malicious intent? How do we decide whether to trust and accept the user’s request to access the program or deny them? This is the first in a two-part process of securing a program known as Authentication: the process of identifying the user [1].

C# has a few integrated classes a developer is able to utilize to derive information about a user. This has been increasingly useful since Windows Live accounts are becoming almost required with later versions of Windows. Some of the basic information provided at this level is the user’s name, it can determine if an authentication exists, and if so, what type of authentication the user contains. The WindowsIdentity class contains several constructors, properties, and methods one can utilize as a developer to extra meaningful data about the user’s Windows account for security purposes.

We decided to implement a simple console application to illustrate such basic but important behavior before getting into some of the more robust topics such as encryption and data access control and more further along in the report.

Encryption

## Overview

ASP.net

File Access Control

## Overview

ASP.net

Code Access Permissions

## Overview

ASP.net

Testing

Appendix

## Program.cs

Bibliography

[1] Nagel, Christian. *Professional C# 6 and .NET Core 1.0, (1st ed.)*. WROX, 2016.

Activity Log - Bitler

|  |  |  |
| --- | --- | --- |
| Date | Time (mins) | Description |
| 1/9/17 | 150 | Looked through text for topics |
| 1/10/17 | 60 | Researched online for topics |
| 1/11/17 |  |  |
| 1/12/17 |  |  |
| 1/13/17 | 120 | Began investigating sockets in earnest |
| 1/14/17 | 90 | Class structure for chat program using sockets |
| 1/15/17 | 60 | Begin formatting paper outline |
| 1/16/17 | 60 | Begin server side code |
| 1/17/17 |  |  |
| 1/18/17 |  |  |
| 1/19/17 | 45 | Continue server side code |
| 1/20/17 | 60 | Start client side code |
| 1/21/17 |  |  |
| 1/22/17 | 240 | Through TDD, continue developing client code while cleaning up server side |
| 1/23/17 | 180 | Debug and continue working through client issues |
| 1/24/17 |  |  |
| 1/25/17 |  |  |
| 1/26/17 | 90 | Conclude coding, begin test case development |
| 1/27/17 | 60 | Screenshots/graphs of program |
| 1/28/17 | 60 | Fix bugs found in testing |
| 1/29/17 | 45 | Adding testing fixes to report |
| 1/30/17 | 120 | Client and server report sections |
| 2/1/17 |  |  |
| 2/2/17 | 120 | Conclude paper |
| 2/3/17 | 30 | Run final tests for verification |
| 2/4/17 |  |  |
| 2/5/17 | 120 | Final review of paper |
| 2/6/17 | 15 | Submit paper |
| 2/7/17 | 200 | Read MVC chapters |
| 2/8/17 | 60 | Begin drafting class structure for MVC apps |
| 2/9/17 |  |  |
| 2/10/17 |  |  |
| 2/11/17 | 240 | Work through controllers, selectors, views code |
| 2/12/17 |  |  |
| 2/13/17 | 300 | Working through Example app HTML |
| 2/14/17 |  |  |
| 2/15/17 | 180 | Database design |
| 2/16/17 |  |  |
| 2/17/17 | 100 | Unit Test design |
| 2/18/17 | 200 | Work on paper |
| 2/19/17 | 280 | Work on paper |
| 2/20/17 |  |  |
| 2/21/17 | 100 | Continue working paper |
| 2/22/17 |  |  |
| 2/23/17 |  |  |
| 2/24/17 | 100 | Add screenshots |
| 2/25/17 |  |  |
| 2/26/17 |  |  |
| 2/27/17 |  |  |
| 2/28/17 |  |  |
| 3/1/17 |  |  |
| 3/2/17 |  |  |
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| 3/8/17 |  |  |
| 3/9/17 |  |  |
| 3/10/17 |  |  |
| 3/11/17 |  |  |
| 3/12/17 |  |  |
| 3/13/17 |  |  |
| 3/14/17 |  |  |
| 3/15/17 |  |  |
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| 3/18/17 |  |  |
| 3/19/17 |  |  |
| 3/20/17 |  |  |
|  |  |  |
| TOTAL 1 | 1725 |  |
| TOTAL 2 | 1700 |  |
| TOTAL 3 |  |  |
| RUNNING TOTAL | 3425 |  |

Activity Log - Robison

|  |  |  |
| --- | --- | --- |
| Time/TaskLog | Activity Type: Indirect | |
| Date | Duration(mins) | Activities |
| Jan 10, 2017 | 30  120 | * Look through book for topics to use for project * Read Chapter 25 in text book. |
| Jan 11, 2017 | 90 | * Read more online about tcp/udp/http |
| Jan 13, 2017 | 120 | * Start Development of TCP Server |
| Jan 14, 2017 | 90 | * Start Development of TCP Client |
| Jan 16, 2017 | 120 | * Finish Development of TCP Server and Client |
| Jan 17, 2017 | 90 | * Research into how to use Http Request and Response with API |
| Jan 18, 2017 | 180 | * Start Development of API JSON Parser |
| Jan 22, 2017 | 180 | * Finish Development of API JSON Parser |
| Jan 24, 2017 | 90 | * Set up and experiment with GitHub |
| Jan 25, 2017 | 120 | * Start development of report |
| Feb 1, 2017 | 180 | * Continue development of report |
| Feb 3, 2017 | 120 | * Continue development of report |
| Feb 5, 2017 | 90 | * Continue development of report |
| Feb 6, 2017 | 90 | * Format Report and Upload to ftp |
| FEB 7, 2017 | 200 | * Read MVC text chapters |
| FEB 8, 2017 | 60 | * Class design for MVC app |
| FEB 9, 2017 |  |  |
| FEB 10, 2017 |  |  |
| FEB 11, 2017 |  |  |
| FEB 12, 2017 | 300 | * Review/update selectors, views, controllers |
| FEB 13, 2017 | 150 | * Work on HTML code for webpage |
| FEB 14, 2017 | 300 | * Continue HTML dev |
| FEB 15, 2017 | 240 | * Database implementation |
| FEB 16, 2017 |  |  |
| FEB 17, 2017 |  |  |
| FEB 18, 2017 | 180 | * Begin working paper |
| FEB 19, 2017 |  |  |
| FEB 20, 2017 |  |  |
| FEB 21, 2017 | 200 | * Continue paper |
| FEB 22, 2017 |  |  |
| FEB 23, 2017 | 60 | * Review paper before submission |
| FEB 24, 2017 |  |  |
| FEB 25, 2017 |  |  |
| FEB 26, 2017 |  |  |
| FEB 27, 2017 |  |  |
| FEB 28, 2017 |  |  |
| MAR 1, 2017 |  |  |
| MAR 2, 2017 |  |  |
| MAR 3, 2017 |  |  |
| MAR 4, 2017 |  |  |
| MAR 5, 2017 |  |  |
| MAR 6, 2017 |  |  |
| MAR 7, 2017 |  |  |
| MAR 8, 2017 |  |  |
| MAR 9, 2017 |  |  |
| MAR 10, 2017 |  |  |
| MAR 11, 2017 |  |  |
| MAR 12, 2017 |  |  |
| MAR 13, 2017 |  |  |
| MAR 14, 2017 |  |  |
| MAR 15, 2017 |  |  |
| MAR 16, 2017 |  |  |
| MAR 17, 2017 |  |  |
| MAR 18, 2017 |  |  |
| MAR 19, 2017 |  |  |
| MAR 20, 2017 |  |  |
|  |  |  |
| Project I Total | 1710 |
| PROJECT 2 TOTAL | 1690 |
| PROJECT 3 TOTAL |  |
| Running total | 3400 |