

# **Project Evaluation**

**For MVC Reporting Website Framework**

**(MVC RWF)**

Version 1.0

Submitted in partial fulfillment of the Masters of Software  
Engineering Degree.

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## **Change Log**

<b>Version #</b>	<b>Changed By</b>	<b>Release Date</b>	<b>Change Description</b>
1.0	Thaddeus Tuck	11/4/2018	Initial Release

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# 1. Introduction

This document discusses my experience of working on the MVC Reporting Website Framework. This document includes a source code analysis, the problems encountered, lessons learned, and plans for the future.

## 2. References

[1] Naga Sowjanya Karumuri, Project Evaluation v1.0 Retrieved 11/4/2018, from Sowjanya's Project Page Web Site: <http://people.cis.ksu.edu/~sowji/100jiMSE/>

## 3. Problems Encountered

While working on this project decision making, prioritization, and development time have been major issues in this project. These issues are explored further in the sections below.

### 3.1 Decision Making

One of the biggest issues I've encountered has been decision making even within the scope of the Vision Plan. I've implemented three versions of this framework so far, and learned many lessons along the way, but trying to decide how to best implement the framework for this project has been a series of many difficult choices many that cost precious time.

## 3.2 Prioritization

In the previous section I discussed issues with decision making, prioritization came shortly after that. The models and underlying structures have always been my highest priority as those are what are valuable to me both now and if I extend the project further. Prioritizing whether to focus on the deployment of the framework versus features was a difficult time-consuming process that ultimately was resolved through discussion with Dr. Andresen.

## 3.3 Development Time

When Dr. Hsu asked during my first presentation whether I thought I would be able to complete the scope of the Vision Document I honestly did. However, I was basing my time estimates on the 40-hour work-weeks that I had used to develop similar frameworks in the past, not the limited week night and weekend hours I could steal from work, classwork, and my family. In addition, I decided to invest a large amount of time in unit testing and documentation; far more than I had in any previous iteration of developing reporting frameworks like this project.

## 4. Source Lines of Code (SLOC)

According to Visual Studio 2017's code analysis the TripleT.ReportingFramework.Core project consists of 507 SLOC, 118 for Class Coupling, Depth of Inheritance of 4, 306 for Cyclomatic Complexity, and a Maintainability Index of 86.

## 5. Project Duration

The following table shows the estimated dates and the actual dates of the presentation for each of the three phases. Unfortunately, due to the issues listed above in Section 3 and scheduling conflicts the final schedule varied significantly from the original proposed schedule.

Phase	Expected Completion Date	Actual Completion Date
1	April 19 <sup>th</sup> , 2018	April 19 <sup>th</sup> , 2018
2	May 31 <sup>st</sup> , 2018	June 13 <sup>th</sup> , 2018
3	August 8 <sup>th</sup> , 2018	November 8 <sup>th</sup> , 2018

**Table 1: Project Duration**

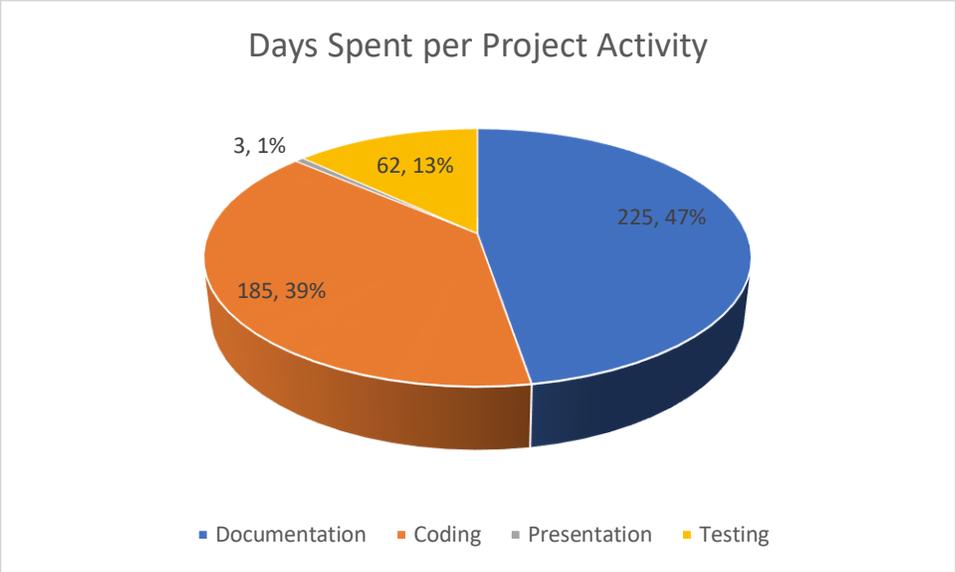
The pie chart below illustrates the time spent per phase for the project.



**Figure 1: Phase Duration Breakdown**

From Figure 1, it is apparent that most of the project occurred in Phase 3 where the full breadth of the project's code, unit testing, and documentation occurred.

In Figure 2, coding and documentation are where the clear majority of the time that went into the project was devoted; which is a logical being that this is a software engineering project, not just a solution to be implemented for a product, and the goal of this project was to document the project as extensively as possible.



**Figure 2: Project Activity Breakdown**

## 6. Lessons Learned

I have learned a lot from this project and have a clearer concept of what a software engineering role would entail. This experience will hopefully prove to be a good shield and counsel in my future career pursuits.

### 6.1 Technical Inspectors

It has been valuable to get impressions of the reporting framework I originally imagined helping myself and other developers create reporting web applications faster and easier from other developers in the field. From Angela Hall and Richard Waliser I have learned that the framework has merit in pursuing its development further, but that it still has a long way to go if I should wish to publish it.

### 6.2 Creation of Design Documents

The level of documentation that has been required at each phase has been illuminating. I had no idea that there were so many documents that went into a software engineering project. How to create and what each type of document in a software engineering project showed consist of is knowledge that I will take forward with me as go forward in my career.

## 7. Future Work

The following are goals and milestones which could be the scope of future iterations of this framework.

### 7.1 Packaging

I agree with Richard Waliser's comments for Item TI-1 in his technical inspection. A goal of the next iteration of this project could be repackaging it into a more modern, easier to use format such as a Visual Studio project template if there is a desire to pursue a public version of the reporting framework through NuGet.

### 7.2 Filtering, Column Selection, and Column Ordering

This functionality was originally a requirement of this iteration of the reporting framework but breaking this functionality into a separate project that would extend the core as a module of the framework is a more extensible option allowing for diversification so that both client-side and server-side filtering, sorting, and additional table editing functionality could be supported by the framework.

### 7.3 Service Provider

To increase the extensibility of the framework and give options for future features, such as navigation menu construction, implementing a service provider framework should be considered.

### 7.4 Export Functionality

One of the predominant reasons for implementing a framework of this nature is standardized display and exporting of data. A feature(s) should be added to allow for the export of reporting data from the framework's models and configuration settings.