COT6931 Computer Science Project

Final Report – Semester 2

Music Box Sales and Special-Orders

Keith Tullius

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Contents

[1 Acknowledgements 3](#_Toc38452889)

[2 Project Summary 3](#_Toc38452890)

[3 Main Body of Report 4](#_Toc38452891)

[3.1 Project outputs and outcomes 4](#_Toc38452892)

[3.2 How did you achieve the outputs and outcomes? 4](#_Toc38452893)

[3.3 What did you learn? 5](#_Toc38452894)

[4 Conclusions 5](#_Toc38452895)

[5 Recommendations 6](#_Toc38452896)

[6 References 6](#_Toc38452897)

# Acknowledgements

Creating the design, developing and deploying the Music Box Sales and Special-Order system has been an exhausting yet fulfilling experience. Throughout the process, there have been many moments of doubt and frustration. Though I have delivered the product to the client, there is still work to be done.

I would like to thank, first and foremost, my sponsor, Ray Thall, for showing me the kindness of listening to my proposal, agreeing to join me on this journey, and following through with all my requests for time and resources.

I would also like to acknowledge my professor, Dr. Donna Glenn, for her guidance and the long hours she has spent reading my reports and deliverables. I know that could not have been fun.

In addition, I would like to thank all my teachers and mentors that have taught me so much about software design and development over the years. I hope that I have, at the least, represented well the hours, days and years you spent trying to impart your knowledge.

Finally, and not least, I would like to thank my family. They have shown great patience and forbearance when I could not be with them due to my concentration on my studies.

# Project Summary

The Music Box Sales and Special-Order project is designed to be a Windows application that interfaces with a local database which will replace spreadsheets and databases that are past the end of support

The Sales functionality of the application will replace a spreadsheet and is meant to extend the capabilities and provide new reporting features. The Special-Order functionality is meant to replace a Works database that will aid in tracking and provide data that can be used to enhance customer contact and provide future value.

# Main Body of Report

## Project outputs and outcomes

The output from the second semester is the application artifacts, database, and delivered software, along with updated design and test documentation. The following documents have been updated or rewritten:

* Project Definition Document
* Software Requirements Specification (SRS)
* Software Design Document (SDD)
* Software Project Management Plan (SPMP)
* Detailed Timeline and Budget Spreadsheet
* Several Project Status Reports
* Project Progress Reports
* PowerPoint Presentation
* YouTube Video
* Final Report (this document)

The source code and database artifacts can be found on GitHub at the following web address:

<https://github.com/strimpf/MusicBoxWTS>

The major outcome is that the client has been delivered the first edition of the software. Also, I have worked through the steps required to engineer the solution and have learned much along the way.

## How did you achieve the outputs and outcomes?

Once I decided on the Universal Windows Project framework and MySQL database, began by designing the database schema. I then created the schema and developed the SQL statements necessary to insert or update rows and query the data.

Then I took the base UWP framework and started modifying it for the Music Box App. First, I focused on building the UI for the Sales module and displaying the sales data in the application. Then I developed the Create Special Order module and Maintain Special Order module using the lessons learned from the Sales module.

This project took many more hours of development than I first imagined. This was mainly due to the new framework and the unforeseen challenges it presented, especially in deploying the application.

## What did you learn?

Technically, I learned how to code UI in XAML with C# code-behind. I also learned that UWP applications are more difficult to compile and deploy than traditional .NET applications that I have developed in the past. UWP applications are meant to be deployed to the Microsoft Store and deployed to the user from there. Deploying directly to a single client requires workarounds, such as getting a developer license for the client system, and explicitly setting up network loopback to connect to a local database.

I also learned that design and tool decisions have real consequences in Software Engineering. All requirements from the first semester were at least altered and some had to be removed. Also, in the future, I will have a much smaller piece of functionality for the minimum viable product (MVP) when using agile methodology.

# Conclusions

The application has been delivered to the client, but the development is not over. During the UAT, the client already has requested changes and enhancements, such as changes to the entry of the closing date for special orders and an additional module specifically for managing customer data.

I end this project with a feeling of limited success. I provided the basic functionality that I envisioned at the beginning of the first semester but was not able to include all of it. I believe that the issue was that the original design was over-ambitious and should have been scaled back. Also, technology selection and developer knowledge, or lack thereof, took time that could have be used to create the full product in the allotted time.

# Recommendations

I will continue to fix and enhance the application to provide the client with the full functionality and beyond. In the future, when sizing projects, I will pay closer attention to the designer/developer capabilities and understanding of the frameworks being used. I will also break the project down into smaller pieces to create the MVP for the client and then increase the utility of the application in future sprints..

# References

Hello World. (n.d.). Retrieved from <https://guides.github.com/activities/hello-world/>

MySQL 8.0 Reference Manual. (n.d.). Retrieved from <https://dev.mysql.com/doc/refman/8.0/en/>

“Project Acceptance Template.” Project Management Docs, https://www.projectmanagementdocs.com/template/project-closure/project-acceptance/.

QuinnRadich. (n.d.). What's a Universal Windows Platform (UWP) app? - UWP applications. Retrieved from <https://docs.microsoft.com/en-us/windows/uwp/get-started/universal-application-platform-guide>

Writing acknowledgements for dissertation. (n.d.). Retrieved December 4, 2019, from <https://www.journeymexico.com/writing-acknowledgements-for-dissertation>.