Shop Manager

Kyronn Morgan Software

Submitted by: Kyronn Morgan 5/26/17 [Kyronn.Morgan@Oit.edu](mailto:Kyronn.Morgan@Oit.edu)

Submitted to: Calvin Caldwell Version 1

# 1. Legal Notice

The information in this document is provided “as is” without any representations or warranties, expressed or implied. Kyronn Morgan hereafter referred to as “the developer” does not warrant that the information in this document is complete, true, accurate, up-to-date, or non-misleading. The Developer will not be held liable for any direct or indirect damages resulting from the information in this document. Nothing in this legal disclaimer will limit any of our liabilities in any way that is not permitted under the applicable law, or exclude any of our liabilities that may not be excluded under applicable law.

# 2. Copyright Notice

Copyright 2017 by Kyronn Morgan. All Rights Reserved.

All rights reserved. No part of this document may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods without the prior written permission of Kyronn Morgan (“The Developer”).

# 3. Revision History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Author | Company | Version | Date | Comments |
| Kyronn Morgan | Kyronn Morgan Software | 0 | 5/26/17 | First Draft |
| Kyronn Morgan | Kyronn Morgan Software | 1 | 6/9/17 | Final Draft- see appendix A |

# 4. Signatory Page

Document Accepted By:



Calvin Caldwell

Document Submitted By:



Kyronn Morgan

Table of Contents

[1. Legal Notice 2](#_Toc484770123)

[2. Copyright Notice 2](#_Toc484770124)

[3. Revision History 2](#_Toc484770125)

[4. Signatory Page 3](#_Toc484770126)

[5. Introduction 6](#_Toc484770127)

[5.1 Purpose 6](#_Toc484770128)

[5.2 Scope 6](#_Toc484770129)

[5.3 Intended Audience 6](#_Toc484770130)

[6. Project Management 6](#_Toc484770131)

[6.1 Change Management Procedure 6](#_Toc484770132)

[6.1.1 CAT Team 6](#_Toc484770133)

[6.1.2 Medium 6](#_Toc484770134)

[6.1.3 Protocol and Response Time 6](#_Toc484770135)

[6.1.4 Time Lines and Impact Analysis 6](#_Toc484770136)

[6.1.5 Archive 6](#_Toc484770137)

[6.2 Software Delivery, Installation, and Acceptance 6](#_Toc484770138)

[6.3 Documentation and Online Help 6](#_Toc484770139)

[6.4 Project Risks 7](#_Toc484770140)

[6.5 Customer Responsibilities 7](#_Toc484770141)

[6.6 Status Reporting 7](#_Toc484770142)

[7. System General Description 7](#_Toc484770143)

[7.1 Project Summary 7](#_Toc484770144)

[7.2 Perspective 8](#_Toc484770145)

[7.2.1 History 8](#_Toc484770146)

[7.2.2 Prior Releases 8](#_Toc484770147)

[7.3 Major Subsystems 8](#_Toc484770148)

[7.4 Relation of System to Existing Systems 8](#_Toc484770149)

[7.5 Hardware Platform Description 8](#_Toc484770150)

[7.6 Software Platform Description 9](#_Toc484770151)

[7.7 Third Party Libraries 9](#_Toc484770152)

[8. Product Requirements 9](#_Toc484770153)

[8.1 Functional Requirements 9](#_Toc484770154)

[8.2 Performance 11](#_Toc484770155)

[8.3 Reliability 11](#_Toc484770156)

[8.4 Data Description 11](#_Toc484770157)

[8.5 Security and Safety 11](#_Toc484770158)

[8.6 Constraints 11](#_Toc484770159)

[9. User Profiles 11](#_Toc484770160)

[9.1 Service Advisors 11](#_Toc484770161)

[9.2 Technicians 11](#_Toc484770162)

[10. Glossary 11](#_Toc484770163)

[11. Appendices 12](#_Toc484770164)

[A. 12](#_Toc484770165)

# 5. Introduction

## 5.1 Purpose

The purpose of this document is to propose an idea for a senior project. This document will detail the scope, requirements, and design related to this project.

## 5.2 Scope

The scope of this document is a general description of the project. This includes the project management, system general description and project requirements.

## 5.3 Intended Audience

The intended audience of this document is Calvin Caldwell.

# 6. Project Management

## 6.1 Change Management Procedure

### 6.1.1 CAT Team

The CAT Team will be made up of Kyronn Morgan and Calvin Caldwell.

### 6.1.2 Medium

Changes should be requested via email to [kyronn.morgan@oit.edu](mailto:kyronn.morgan@oit.edu) and [calvin.caldwell@oit.edu](mailto:calvin.caldwell@oit.edu)

### 6.1.3 Protocol and Response Time

Change requests will be analyzed and responded to within 4 business days.

### 6.1.4 Time Lines and Impact Analysis

Any changes requested will go through an impact analysis to determine what the change will affect and how the timeline will change as a result.

### 6.1.5 Archive

All change requests will be archived with their impact analysis and will be able to be referenced at any future time.

## 6.2 Software Delivery, Installation, and Acceptance

The project will be a Microsoft WPF app. Delivery will be in the form of an executable and related files. One hour of installation assistance (travel time to the install site will be included in calculating time to install) will be provided at the request of the receiving party free of charge. Additional assistance will be provided at the developer’s discretion and billed hourly including any travel time.

Acceptance will depend upon how many functional requirements have been met.

## 6.3 Documentation and Online Help

There will be documentation of the project code that will be viewable by Kyronn Morgan and Calvin Caldwell. There will be no online documentation, however a quick start guide will be provided.

## 6.4 Project Risks

The project has significant risk in that the developer lacks significant experience in personally completing a large project.

## 6.5 Customer Responsibilities

The customer will be responsible for providing a suitable hardware platform to run the server application and the user application.

A suitable platform for the server will be a windows ten desktop with at least 6 GB of ram and an I7 or better processor, a minimum of a 1TB hard drive, and a widescreen full definition monitor of at least 15 inches.

A suitable platform for the user application will be a windows ten desktop with at least 4 GB of ram and an I7 or better processor, a minimum of a 250GB hard drive, and a widescreen full definition monitor of at least 15 inches.

If a platform is to run both the server and an instance of the user application then it shall be at minimum a windows ten desktop with at least 8 GB of ram and a 4 core I7 or better processor, a minimum of a 1.5TB hard drive, and a widescreen full definition monitor of at least 15 inches.

## 6.6 Status Reporting

The information provided on the status reports will be:

* Work Completed This Week
* Work to be completed next week
* Issues

# 7. System General Description

## 7.1 Project Summary

I will be creating a program to create and track appointments for my dad’s auto shop that will allow for the scheduling of appointments and that will handle the progress tracking of the job once it is started. The scheduling portion will allow the service advisor to create an appointment on any given day for either an existing customer from a database or for a new customer. Once the customer’s information has been entered the service advisor will be able to record a detailed description of the problem the customer is having or the work they would like done. Once this information has been recorded the service advisor will then be able to add estimated work items, a list of expected labor that will need to be performed in order to complete the job. Each item will have an associated estimated labor time that will be added to the total hours scheduled for that day.

Having the total hours estimated and displayed for any given day will allow the person who is scheduling an appointment to quickly and easily determine what day is going to be best to bring the car in to be repaired without overbooking a day. The program will also allow for the user to easily move the whole appointment to another day or to spread the appointment out over several days.

The other part of the program is the progress tracking and workflow management system. This portion of the program will allow the service advisor to convert an appointment into a work order that will be assigned to an individual technician. Once assigned the job and all of the details associated with it will be displayed in the technicians view. Once there the technician will be able to update estimated labor items as they complete them, add labor items that they have completed, add any parts that they have used on the job. They will also be able to add recommended repairs or notes for the customer and or service advisor. They will also be able to update job status reflecting what is currently happening on that job for example it is complete, in progress, or waiting on parts. Once the job is marked completed it will be displayed in the service advisors view so that an invoice can be created using their existing invoicing system from the work order.

The system will retain a record of appointments made and work orders created and closed so that any appointment or work order can be referenced later.

## 7.2 Perspective

### 7.2.1 History

Currently the shop uses a paper book in which they record the customer’s name, phone number, vehicle type, and extremely brief description of the problem they are having. If the problem description is complex then the service writer must either remember what was said until the vehicle is dropped off for repair or write a note on a separate paper and not lose that note. There is no quick and convenient way to look up what customers have previously visited for and no good way to record complex problem descriptions to pass on to the person who will be actually working on the car. Once work has begun the technicians take notes on paper of what they have done and what parts they have used during the process. Using this process it is extremely difficult to modify/ update information that you have already recorded.

### 7.2.2 Prior Releases

None.

## 7.3 Major Subsystems

The application will be built using C# and WPF.

## 7.4 Relation of System to Existing Systems

NA

## 7.5 Hardware Platform Description

The application will be meant to run on capable and modern hardware that will allow it to run at an appropriate speed.

A suitable platform for the server will be a windows ten desktop with at least 6 GB of ram and an I7 or better processor, a minimum of a 1TB hard drive, and a widescreen full definition monitor of at least 15 inches.

A suitable platform for the user application will be a windows ten desktop with at least 4 GB of ram and an I7 or better processor, a minimum of a 250GB hard drive, and a widescreen full definition monitor of at least 15 inches.

If a platform is to run both the server and an instance of the user application then it shall be at minimum a windows ten desktop with at least 8 GB of ram and a 4 core I7 or better processor, a minimum of a 1.5TB hard drive, and a widescreen full definition monitor of at least 15 inches.

It will be developed on my HP laptop.

## 7.6 Software Platform Description

The application will be run on windows ten.

## 7.7 Third Party Libraries

None.

# 8. Product Requirements

## 8.1 Functional Requirements

The project will:

1. Maintain a database of customers
   1. Contains customers names and contact info
      1. Phone numbers
      2. Address
   2. Maintains a record of the appointments they have made.
2. Schedule an appointment for any day
   1. An appointment will consist of
      1. A notepad for recording a detailed record of the customers problem description
      2. A section for creating estimated work items
         1. Description of work to be done
         2. Estimate of the time it will take to complete the job
      3. A display of the total estimated time to complete job
      4. A date or dates
   2. Spread out appointments across multiple days
      1. Designate a fixed number of hours from a job to any day
      2. Spread hours over any number of days
      3. Create mini appointments on individual days linked to the original appointment
   3. Move appointments to a new day
3. Set a target number of hours per day (min and max)
   1. Display progress toward number of target hours.
      1. Color coded Progress bar and percentage display
   2. Display a warning if target hours are exceeded on any given day
4. Assign a job to a technician
   1. Upon assignment job is shown in technician’s Technician view
5. Monitor progress on job
6. Track and Report parts used and labor items completed on a job
   1. Parts
      1. Part number
      2. Description
      3. Number of units
      4. Price
   2. Labor items
      1. Description
      2. Time required
7. Have two major sections
   1. Appointment management
   2. Technician management
8. The technician management section will have two primary views
   1. The service manager view
      1. View the progress on any given appointment
      2. Create labor items to be completed
      3. Assign a job to a specific technician
      4. Allow for auto assignment of jobs
         1. Based on the target daily hours for Technician and currently assigned work
   2. The technician view
      1. View customer info
      2. Report labor items completed
      3. Create new labor items
      4. Report parts used
      5. Report current status of the job
         1. Job statuses will be user defined
9. The appointment management section will have one view
   1. Shows appointments by
      1. Individual appointment
      2. Day
      3. Week
   2. Allows for creation of new appointment
   3. Editing of any appointment
   4. Allows for assignment of jobs to technicians
10. Setup menu
    1. Add a technician
       1. Set a Skill level of
          1. Low
          2. Medium
          3. Full
       2. Set target hours
       3. Set Name
    2. Edit any existing technician
    3. Remove a technician
    4. Add a user
       1. Set user id
       2. Set password
       3. Set user role
          1. Service advisor
          2. Technician
    5. Remove a user

## 8.2 Performance

The app should respond to the user in less than 5 seconds.

## 8.3 Reliability

The app should have a minimum of 95% uptime during the hours of 8AM-5PM Monday to Friday. Times outside of these business hours shall be acceptable maintenance times.

## 8.4 Data Description

The program shall be able to transmit a minimum of 50 bytes per second

## 8.5 Security and Safety

Data that is deemed sensitive in nature by the developer shall be encrypted. The developer’s determination of what is and is not sensitive shall be the final determination.

## 8.6 Constraints

This application is only to be used for its intended purpose.

# 9. User Profiles

## 9.1 Service Advisors

Service advisors will user this application to create and manage customer appointments and assign those appointments to technicians as work items to be completed. Once the work is completed they will use the information that the technician added to the system to complete the invoicing of the job using their dedicated invoicing software.

## 9.2 Technicians

Technicians will use the system to receive work assignments and to record jobs that they have completed associated with work items. They will also use the system to record supplies used and make repair recommendations that the service advisor will use when making invoices and recommending further repairs.

# 10. Glossary

None.

# 11. Appendices

## A.

1. Added company name to revision history

2. Added names to signatory page

3. Changed 7.5 to have detailed hardware description.

4. Added detail to 3.a

5. Changed all requirements to use consistent nouns

6. Added customer info view to 8.b

7. Added requirement to be able to create work items from appointment (9.b)

8. Removed unneeded user role from 10.d.iii

9. Added a data description