**CRM Design Proposal**

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| Wasatch Software Solutions |
| CRM Design Proposal |
| The American Video Game Company CRM |

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| Shawn Neville  6-22-2021  Version 1.0 |

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# Introduction

Wasatch Software Solutions has years of experience in developing custom CRM solutions that are competitive with leading off the self-solutions. Our company is proposing a custom CRM solution that is unique for The American Video Game Company. In the sections that follow you will broad detail on how our CRM solution will meet your requirements, our design, and methodologies used.

# A.1. PUrpose Statement

The purpose of this document is to define the requirements and design for our CRM solution we can provide for The American Video Game Company.

# A.2. Overview of THE PROBLEM

American Video Game Company needs a new CRM solution. With sales being up by 42% in the past two years the company has outgrown the capabilities of their current CRM system. They have outdated and disjointed systems. The management of their business process flows needs to be optimized.

# A.3. Goals and Objectives

Provide the goals and objectives for the project and solution.

Provide an intuitive, and user-friendly graphical interface

Merge all business processes and functions into one CRM solution

Consolidate all business contact information into single database for easy management

Provide a robust ticketing system for all customer communication

User access control based on the roles and permissions of all company’s users

# A.4. Prerequisites

Prior to the design and development stages of the project Wasatch Software Solutions will need the following prerequisites met:

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| --- | --- | --- | --- |
| Number | Prerequisite | Description | Completion Date |
| 001 | Database Cleanup and Backup | Remove and archive any business data that is not needed for current business flow. | 06/28/2021 |
| 002 | Data Migration | Copy all current data to new database | 06/30/2021 |
| 003 | Network Security and VPN Setup | Inspect security of company’s network. Setup VPN. | 07/05/2021 |
|  |  |  |  |

# A.5. Scope

**The following are in Scope:**

* Ability to have 500 users logged in at once with optimal response time.
* Contact management
* Order management
* Ticketing system
* Reporting

**Are following are not in scope:**

* Activity Management
* Opportunity Management
* Quoting

# A.6. Environment

**Operating System and Browser Support**

* Latest Chrome and Chromium
* Latest Firefox
* I.E 10 and above
* Safari version 11.0 and above
* Mobile & tablet
* iOS Safari 14 and above
* iOS Third Party Browsers (Chrome and Firefox)
* Android Chrome version 91 and above

**Infrastructure**

* For database environment we will be using SQL Server 2020 on amazon’s AWS cloud services

# Requirements

AVGC has outgrown what their current CRM can offer. They need a new CRM that can scale with continued growth and optimize their business processes. The following list of requirements our design solution provides will address High-level and Functional requirements to help The American Video Game Company achieve their business goals.

**1. Users**

AVGC has 2,000 users who will access the CRM. The CRM needs to accommodate for the event that 500 users may be concurrently using the system during peak usage times. The system needs to scale to meet the growing user base. To meet this requirement, we will put a strong focus on database optimization techniques, optimal algorithms, and data structures best suited to meet this demand. Our CRM solution will have optimal performance and scale as more and more users are added to the system.

**2. Contact Management**

The new system needs to categorize varying types of business and users because each has different conditions on how they are contacted, and their details may be used. They also need to be able to manage their own preferences from their own settings. A table/entity will be created for each type of user. Each user entry will have a primary key. This will ensure that each contact is unique and not duplicated. Table entries will include properties such as roles. These properties can easily be updated when contacts move between businesses, offices, or roles.

**3. Order Management**

The new system needs to include an order management system that supports the process of turning a quote into an order. The system also needs to be able to take orders, process orders and provide tracking once order is placed.

Our CRM solution will allow the following ordering functionality:

* Users will be able to create and place their orders by selecting the item from the catalog, or from their order history list.
* Users will be able to track their orders once shipping tracking number is updated in system.
* System will support conversion of quotes to orders.
* Users will be able to order parts

**4. Ticketing System**

The system must provide a ticketing system that tracks the details necessary to track and processes inquires and communications with contacts. Our CRM solution will provide a comprehensive ticketing system that will create a business case that will go through various stages. Once the business case/ticket is resolved it will then be closed out and archived.

**5. Reporting**

The solution needs to have the ability to generate predefined or custom reports. It will need to allow users to filter, format, and export data. Our CRM solution will include an easy-to-use graphical interface that generates reports for users. We will accomplish this with SQL queries. The custom filters that users create will be saved to a list of filters for future use. There will be a button in the graphical interface that will allow the user to export the generated data. Data accessible will be relevant to the type of user logged in.

# SOFTWARE DEVELOPMENT METHODOLOGY

In the following sections we will discuss the differences between the Waterfall and Agile methodologies so you can have a better understanding of our choice of methodology.

# Advantages of the waterfall method

* Well defined requirements set in beginning makes for lower development cost.
* There is a high emphasis on documenting and design before programming starts. This makes it easier to bring on new developers if necessary.
* Easier to predict when different stages of the model will start and end.
* Because changes occur less often with this mode, code doesn’t need to be refactored as often.
* High fidelity of features when program is released.

# disAdvantages of the waterfall method

* There is less flexibility to shift requirements making it difficult to take advantage of opportunities that may arise.
* It can take longer for the customer to see the product because it has a later release than when using adaptive models.
* Waterfall has a bigger up-front design. This means developers can’t start coding until requirements and design are complete.

# Advantages of Agile Method

* Can release a product sooner and build upon it with each iteration.
* Allows flexibility to change project goals during development if necessary.
* Frequent communication with customer helps keep the project on track.

# disAdvantages of agile method

* Initial release provides fewer features than waterfall
* Difficult to predict the amount of time and cost that will be spent on project.
* Higher changes for scope creep to occur.

# best SUITED

Both methodologies have great advantages, and each could be applied to this project. For example, if AVGC wanted to prioritize requirements they could have an initial release quickly. Then roll out more features with iterative releases. However, we feel that utilizing the waterfall methodology would be in the best interest of AVGC as well as ours. AVGC has provide sufficient detail in the description of requirements. We feel that because AVGC has provided enough detail, changes to goals and requirements are unlikely. This will allow us to provide you with a relatively accurate schedule of product completion. This will also be more cost effective in the long run. We are confident that our code will be maintainable allowing for future developers to easily integrate new features if AVGC chooses to employee developers in the future.

# Design

Our design provides a graphical interface that is both professional and intuitive for the users.

# Order management Flowchart

This flowchart showcases the process a customer takes to place an order from an item’s page.

Diagram

Description automatically generated

Figure 1: Order Flowchart

# GUI Login screen

Graphical user interface

Description automatically generated

Figure 3: Sample GUI Mock-up

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| --- | --- | --- | --- |
| GUI Control Mapping | | | |
| ID | Control | Property | Data Source |
| 1 | Textbox | User enters their username | Internal Variable |
| 2 | Textbox | User enters their password | Internal Variable |
| 3 | Button | Searches database verification and password match | Database |
| 4 | Button | Directs user to sign up page | NA |

# Testing

# Testing Type: black-box

We have chosen to carry out our testing using the black box testing type. This means that the person performing the testing on the functions will know what the intended result should be but doesn’t know how the functions work. This also helps ensure that the CRM application is intuitive and easy for others to use and navigate.

# Peak-Time Usage stress test

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| **Requirement to be tested**  Performance of functionality must not be diminished when 500 users are using the system. |
| **Preconditions**:  500 Bots must be created that have the function of constantly pulling and pushing network requests to the server. Response time for push and pull request must be recorded before stress test. We will call this optimal time. |
| **Steps**:   1. Activate 150 bots to perform network requests on server. 2. Activate 300 bots to perform network requests on server. 3. Activate 500 bots to perform network requests on server. |
| **Expected results**:  After all the 500 bots are actively pushing and pulling request on server, the response times of these requests should be equal or less than the optimal time. |
| Pass/Fail: Mark whether the test case passed or failed. The results can be compiled and used to determine if the application is ready for delivery/release.  Passes if the response times of requests are equal or less than the optimal time. |

# Login Authentication

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| **Requirement to be tested**  We need to test the login authentication functionality of the new system. Users |
| **Preconditions: Conditions that must be present before test case can successfully run**  A mock user account and password must be created and present in the database before testing. |
| **Steps: The steps the tester must execute to test the feature.**   1. Enter the correct username and correct password on login screen. 2. Enter the correct username and incorrect password on login screen. 3. Enter incorrect username and correct password on login screen. 4. Enter incorrect username and incorrect password on login screen. |
| **Expected results:**  Step 1 should successfully log user in.  Step 2 should throw incorrect password exception.  Step 3 should throw incorrect username exception.  Step 4 should throw incorrect username and password exception. |
| **Pass/Fail:**  Test passes if all expected results from test steps are yielded. |

# Order management

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| **Requirement to be tested**  We must test the functionality of placing an order to ensure order is successfully placed, user receives email confirmation and tracking number. |
| **Preconditions**:  A valid customer user must exist in the database with the following information populated:   * Billing * Address * Email address |
| **Steps**:   1. Log into the CRM system as a customer 2. Navigate to store 3. Select an item 4. Select “add to cart” and “proceed to checkout” 5. Enter billing and shipping information 6. Select “confirm order” 7. Check email inbox associated with account to ensure confirmation email is received. |
| **Expected results**:  An email confirmation should be received within two minutes of selecting “confirm order” on step 6. |
| **Pass/Fail**:  Passes if order email confirmation is received within two minutes of selecting “confirm order” on step 6. |