**Design Template**

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| American Video Game Company |
| Software Project |
| [C188 Performance Assessment] |

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| Sonya Cail  1-16-2022  [Version 1] |

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# Introduction

Our company is proposing this CRM solution to the American Video Game Company. The following detailed discussion is an overview of the requirements, methodologies, design, and testing.

# A.1. Purpose Statement

The purpose of this document is to define requirements for a new customer relationship management solution for the American Video Game Company.

# A.2. Overview of THE PROBLEM

The American Video Game Company is a premier developer and publisher of computer games. The company is known for its game quality and has ranked #1 for several years. Sales have improved by 42% in the last two years. The company is outgrowing its current system for managing CRM. The system is necessary for managing clients, sales tracking, activity management, and reporting. The current system has several disconnected manual and automated processes. The current CRM system is not scalable, efficient for data sharing, reporting, and business process flows between users.

# A.3. Goals and Objectives

Goals and objectives of the CRM solution:

To be efficient by consolidating all contact and business information

Control access to features

To be easy to use, intuitive, and user friendly

Robust security

Users will be able to manage their contact settings

Users categorized as varying types of business and end user with different set of terms and conditions

System compatible with latest Chrome

# A.4. Prerequisites

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| Number | Prerequisite | Description | Completion Date |
| 001 | Microsoft | All Window users operating systems upgraded to windows 10 version 20H2 operating systems | 4 weeks |
| 002 | MAC | All MAC users operating systems upgraded to macOS Catalina 10.15.7 | 4 weeks |
| 003 | Browser | Update to latest Chrome browser on Windows or macOS | 4 weeks |
| 004 | Data | Collect data in the current CRM to implement into new system | 3 weeks |

# A.5. Scope

These items are in scope:

* Enable control access to features based on roles and permissions for internal and remote users
* Enable soft delete of data
* Enable hard delete of data
* Enable contact categorized by type
* Enable multiple contacts to be assigned to one or more businesses and offices or subcompanies

These items are out of scope:

* Work with the company’s internal hosting infrastructure or have sound justification for alternate options (e.g., hosting independently or in the cloud)
* The ticketing system which would allow for the entry and tracking of every communication and inquiry for contacts.
* The ticketing system to track who called, reason, date/time, and follow up, including relevant details
* Delivering both predefined and custom reports on all the data within the system

# A.6. Environment

* latest Chrome and Chromium
* Firefox 96.0.1
* I.E 11.0
* Safari 14.1
* mobile & tablet
* iOS7 Safari
* iOS7 Third Party Browsers (Chrome and Firefox)
* Android 4.0 Chrome
* SQL server 2019

# Requirements

The American Video Game Company has established requirements based on the needs of the company. Based on the American Video Game company profile the following key requirements will be addressed:

* Control access to features based on roles and permissions for company internal and remote users
* Soft delete of data
* Hard delete of data
* Contacts categorized by type
* Multiple contacts assigned to one or more businesses and offices or subcompanies

# Business Requirements

The American Video Game Company has a key technical objective to control the access of features based on roles and permissions for internal and remote users. The American Video Game Company will provide policies that identify features and permissions based upon the roles in the company. When a new employee or an existing employee switches roles specific features and permissions will be automatically granted based upon the employee roles. The proposed system will accomplish this with the use of buttons on the interface. Human resources will select identified roles by selecting the appropriate boxes. The selection of boxes will then allow access to features and permissions after a user authentication is completed.

The American Video Game Company has a key requirement of soft delete. The proposed system will accomplish this with the use of buttons on the interface. When the user clicks or checks the box next to the file name the proposed system will flag the record as 0 or not active. Files that are 0 or not active will not be a part of the user’s query and thus removed from the existing active files. When the user selects the del button on the interface the file will be placed in an archive table where the 0 or not active flag can be removed and changed to a 1 or active if the user choses to reactivate a not active file.

Hard delete is a key requirement for system performance. The proposed system will accomplish this with the use of buttons on the interface. When the user clicks the delete and then confirms the need to delete the file will then be deleted and removed permanently from the system.

The American Video Game Company has a contact management requirement that contacts shall be categorized by type. The proposed system will accomplish categorization of contacts with buttons. Users will be able to select contacts from the dashboard. Once the contact is selected the user will be able to select a contact type. Contact type options will be based upon policies provided by The American Video Game Company.

A contact management requirement was that multiple contacts can be assigned one or more businesses and to offices or subcompanies. The proposed system will accomplish assignment of multiple contacts to a business and offices or subcompanies using buttons within the contacts section of the dashboard. A list of businesses will be available in a drop down format for users to select when adding details to the contact.

# SOFTWARE DEVELOPMENT METHODOLOGY

The Video Game Company has selected waterfall as its method of choice for software development projects. I will be comparing waterfall and agile methodologies for software development projects.

# Advantages of the waterfall method

The waterfall methodology has the following advantages:

* Requirements are known with precision in advance
* Requirements include no unresolved high-risk items
* Requirements will not change much
* Experienced team
* Enough time to work sequentially
* Additional steps can be added to give more detail

# disAdvantages of the waterfall method

The waterfall methodology has the following disadvantages:

* Difficult to perform each step perfectly
* Not able to go back to previous steps
* If the project fails at any early step the project the later steps will be wrong

# Advantages of agile

The agile methodology has the following advantages:

* Use frequent or continuous customer communication to keep the project on track
* Customers examine the most recent iteration and then offer corrections, suggestions, and change requests
* Projects are completed in shorter sprints making them more manageable
* Projects are rolled out quickly and changes can be easily made based upon customer experience
* Agile is iterative therefore the ability to find problems and create solutions occurs more quickly and efficiently

# disAdvantages of agile

The agile methodology has the following disadvantages:

* Customers, testers, and developers interact constantly which will require a lot of time commitment
* Project can easily get off track if the customer’s needs are constantly changing
* Difficult to estimate the effort required at the beginning of the project
* Requirements can change during iterations which make the result difficult to predict

# best SUITED

The American Game Company typically utilizes the waterfall method when completing projects. However, for this project, the agile methodology is best suited to meet the targeted CRM requirements. Utilizing agile methodology will allow for frequent communication between the customer and developers to ensure that the project is completed as envisioned by The American Game Company. Agile will ensure that the project is rolled out quickly and that changes can be made easily to satisfy requirements. Utilizing agile methodology will allow for requirements proposed to the contact management system to be examined by the users. Users will be able to offer corrections, suggestions, and feedback.

# Design

Section D.1. STORYBOARD is a high-level flow chart depicting control access and permissions based on the user role for the internal and remote user requirement.

Section D.2. GUI is a high-level representation of the dashboard for the user to select the customer contact type.

# Storyboard

The following is a high level flowchart depicting the control access to features based on roles and permissions for company internal and remote user requirement.

Diagram

Description automatically generated

Figure 1: Sample Flowchart

# GUI

Graphical user interface, application

Description automatically generated

Figure 2: Sample GUI Mock-up

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| --- | --- | --- | --- |
| GUI Control Mapping | | | |
| ID | Control | Property | Data Source |
| 1 | Textbox | On application text boxes for customer contact information  (i.e., contact names, business name, e-mail, phone number, address, etc. | Internal Variable |
| 2 | Button | Drop down selection of customer type- multiple types selected as needed | Internal Variable |
| 3 | Button | On click OK -accepts changes or Cancel- exit without changes | Internal Variable |

# Testing

Integration testing will be utilized to verify the soft delete. Integration testing will be used to verify that the new soft delete method work and integrate into the existing codebase. It checks that existing code calls new methods correctly and that the new methods can call other methods correctly. Black-box testing will be utilized to verify the contact management requirement that multiple contacts can be assigned to one or more businesses and offices or subcompanies. Black-box testing is when all sorts of random inputs are input into the method to see what it does. Unit testing is used to verify the correctness of a specific piece of code. Testing the code thoroughly to test parts of methods that allow bugs found and corrected.

# Testing Type Integration testing, black box, and unit testing

Integration testing will be utilized to verify that the soft delete works when integrated into the existing code base.

# Integration testing – soft delete

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| The American Video Game Company has a key requirement of soft delete. Check existing code calls with the soft delete to ensure that the new methods can call other methods correctly. |
| Preconditions: test data for soft delete and newly added soft delete methods integrated into previously written code. |
| Steps: The steps the tester must execute to test the feature.  1. Tester will log onto the current system utilizing credentials with permissions that allow the tester to archive test data 1 – 5.  2. Tester will select test data 1 – 5 for archive.  3. After test data is archived tester will refresh data and search for test data 1 - 5 to confirm soft delete from user searchable view. |
| Expected results: Removal of test data 1 – 5 utilizing soft delete from user search view in application |
| Pass/Fail: Test case pass. |

# black box – contact mangement

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| A contact management requirement was that multiple contacts can be assigned one or more businesses and to offices or subcompanies. |
| Preconditions: Code that enables user to assign multiple contacts to one or more businesses |
| Steps: The steps the tester must execute to test the feature.  1. Tester will log into application  2. Tester will assign multiple contacts to one or more businesses for test customer 1, test customer 2, and test customer 3 by random input of multiple input types and random values. |
| Expected results: User will be able to select or input multiple inputs per business to one or more businesses |
| Pass/Fail: Test case pass. |

# Unit testing- control access

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| The American Video Game Company has a key technical objective to control the access of features based on roles and permissions for internal and remote users. Testers will assess the ability of the system to allow different permissions for internal and remote users based upon identified roles and permissions. |
| Preconditions:   * preestablished permissions based upon identified roles and responsibilities * lists of tasks to complete for while logged in under various log-ins with various roles * employee log-ins |
| Steps: The steps the tester must execute to test the feature.  1. Tester will be given different log-ins. Each set of log-in credentials will have an assigned role within American Game Company  2. Tester will attempt to complete a set list of tasks such as archive, delete, view other employee’s files, change customer identifying information, etc.  3. Tester will record which tasks were able to be completed per log-in credential utilized |
| Expected results: Based on log-in utilized by tester, only specific or limited access to complete various exercises based upon role of the authenticated credentials. |
| Pass/Fail: Test case passed. |