Design Template

Generic Tech Company inc.

CRM Solution Proposal – American Video Game Company

GTC-Connect

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WESTERN GOVERNORS UNIVERSITY

CONTENTS

A. INTRODUCTION

Generic Tech Company inc. is providing a Customer Relationship Management software solution to American Video Game Company. This proposal will include project requirements, development methodologies, system design, and product testing in detail.

A.1. PURPOSE STATEMENT

The purpose of this document is to define AVGC's CRM requirements and propose a solution that meets them.

A.2. OVERVIEW OF THE PROBLEM

AVCG is presently facing multiple challenges. AVGC has recently seen extreme overall growth and is struggling to maintain operations and provide quality services in line with customer demand. AVGC's current systems are not efficiently integrated and operate on multiple independent platforms that may or may not be able to scale to current and future needs. AVGC also faces legitimate security risks regarding data protection.

A.3. GOALS AND OBJECTIVES

The goals and objectives of this CRM solution are:

- To provide a system which is scalable and can handle the recent and continued growth of AVGC
- To provide a system which integrates data security into its design
- To provide a system that is compatible with multiple types of platforms and technologies
- To provide a system with interoperability between the company's pre-existing systems
- To provide a system that can be modified and customized to fit current and future needs

A.4. PREREQUISITES

Number	Prerequisite	Description	Completion Date
1	OS	All operating systems must be updated to their latest versions	4 weeks
2	CRM	A full roster of users must be provided with access levels defined	2 weeks
3	CRM	Customer data must be imported into new CRM prior to launch	4 weeks
4	CRM	User accounts for development team must be generated in order to analyze pre-existing CRM software prior to design phase	2 weeks

A.5. SCOPE

The following items are in scope for the current project:

- Accessibility through multiple web browsers and operating systems
- Permission-based user access controls

- The ability to "soft delete" information for sorting and organization purposes
- The ability to "hard delete" information to facilitate data cleanliness and correct errors
- Ensuring integration of GTC-Connect and MS Outlook/Exchange

The following items are out of scope for the current project:

- Ticket system functionality covering contact interactions and audit trails

A.6. ENVIRONMENT

The solution will be deployable on:

- latest Chrome and Chromium
- latest Firefox
- I.E 9 and above
- Safari 6.0
- mobile & tablet
- iOS7 Safari
- iOS7 Third Party Browsers (Chrome and Firefox)
- Android 4.0 Chrome

The solution will also be compatible with Amazon Web Services (AWS) Disaster Recovery Services (DRS). AWS DRS can convert the solution to be run natively on AWS, which offers a scalable, cost-efficient option to mitigate data loss in the event of natural disasters or emergencies. Additionally, instances of CRM data can be created automatically at regular intervals to ensure up-to-date rollback points in case of malware intrusion or data corruption.

B. REQUIREMENTS

The proposed CRM solution will focus on the following requirements:

- Accessibility through multiple web browsers and operating systems
- Permission-based user access controls
- The ability to "soft delete" information for sorting and organization purposes
- The ability to "hard delete" information to facilitate data cleanliness and correct errors
- Ensuring integration of GTC-Connect and MS Outlook/Exchange

B.1. BUSINESS REQUIREMENTS

American Video Game Company has seen tremendous growth recently. In order to maintain growth, two areas must be prioritized: communication and organization. One way that GTC-Connect can enable these items is through its full integration with Microsoft Outlook/Exchange. Users will be able to transfer professional contact information, communicate with customers, and schedule meetings and events seamlessly between multiple systems.

B.2. USER REQUIREMENTS

GTC-Connect users are humans and humans make mistakes. When it comes to data entry and reporting, mistakes are inevitable. What is important is a having a way to correct our mistakes in order

to ensure the continued integrity of our data. That is why GTC-Connect has built-in "hard delete" capability. Users may exercise this capability in the event that errors make their way into the GTC-Connect databases.

The amount of data capable of being stored in GTC-Connect databases is vast and some users may be responsible for generating reports based on this data. When creating reports from large datasets, it is important to have a method of sorting through raw, un-needed data. The "soft delete" function of GTC-Connect makes this possible. Users may "soft delete", or temporarily hide, data without permanently removing it from the system. This allows continued data integrity of the system and facilitates ease of reporting.

B.3. FUNCTIONAL REQUIREMENTS

The safeguarding of confidential client and financial data is integral to the GTC-Connect software. To facilitate this, all user accounts will have defined access permissions allowing them access only to the information within their compartmentalized workgroup/department. This protects both users and customers from becoming involved in incidents of sensitive data leakage.

B.4. NONFUNCTIONAL REQUIREMENTS

The most useful tool in the world won't do a company any good if they can't access it. That is why the GTC development team places accessibility at the top of their priorities list. GTC-Connect is compatible with all the most popular web browsers and operating systems for both desktop and mobile platforms including:

- latest Chrome and Chromium
- latest Firefox
- I.E 9 and above
- Safari 6.0
- mobile & tablet
- iOS7 Safari
- iOS7 Third Party Browsers (Chrome and Firefox)
- Android 4.0 Chrome

C. SOFTWARE DEVELOPMENT METHODOLOGY

American Video Game company has chosen to pursue the Waterfall Method in developing this software solution. The Waterfall method shines as a process when documentation and organizations are prioritized and maintained. Below, some positives and negatives of the method will be discussed along with an alternative method.

C.1. ADVANTAGES OF THE WATERFALL METHOD

Some advantages of the Waterfall Method are:

- Uses a clearly defined and easily understood structure
- Defines the end goal early in the development process
- Transfers information cleanly and emphasizes clear documentation

C.2. DISADVANTAGES OF THE WATERFALL METHOD

Some disadvantages of the Waterfall Method are:

- Changes made mid-process are difficult to adapt to
- The end user and/or client are not involved during the process
- The process is linear and is not able to be tested until after completion

C.3. ADVANTAGES OF THE AGILE METHOD

Some advantages of the Agile Method are:

- Welcomes changing or evolving requirements
- Communication between client and developer is maintained
- Testing is conducted at multiple points throughout the process

C.4. DISADVANTAGES OF THE AGILE METHOD

Some disadvantages of the Agile Method are:

- Scope-creep can happen if not closely managed
- Depends on regular and constructive client feedback throughout process
- Occasionally difficult to forecast progress

C.5. BEST SUITED

The Waterfall method is best suited for this project as it relies heavily on clearly outlined goals, objectives, and requirements to be successful. AVCG has provided clear and well-reasoned documentation, which lends itself to this methodology. Additionally, the fact that AVGC has already chosen the Waterfall method indicates that their development teams and project managers have experience working with this method. Attempting to utilize any other method at this point may introduce confusion and delays in the project which can result in exceeding budgets or timelines. If AVCG is already comfortable operating within this framework, the best course of action is to continue doing so.

D. DESIGN

Below are two images that will display different aspects of the security and access control functionality of GTC-Connect. The first, in section **D.1.**, is a high-level flowchart depicting the process and logic through which a user is assessed to receive access to various datasets. The second, in **D.2.**, is a mock-up of the User Account Creation GUI. It displays the method through which new users are assigned role- and level-based permission and accesses for data usage.

D.1. USER DATA ACCESS FLOWCHART

Below is a high-level flowchart of the process through which user profiles are either granted or denied access to various datasets in GTC-Connect. This process is based around assessing user profile permissions, pre-defined dataset controls, and then comparing the two to determine status of access.

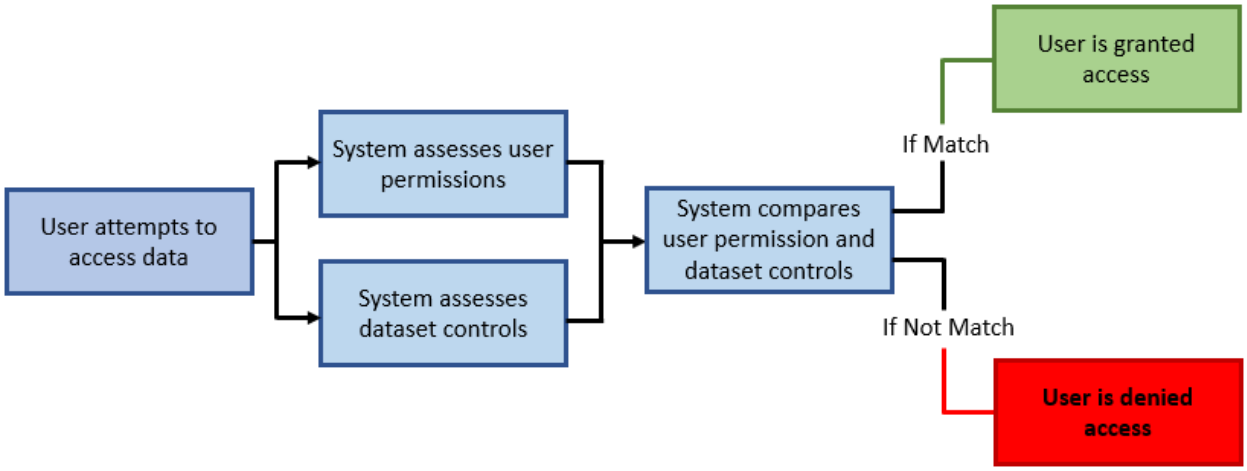

Figure 1: Data Access Control Flowchart

D.2. NEW USER ACCOUNT CREATION GUI

Below is a mock-up of the GUI that certain users will interface with in order to create new users. The "Workgroup" and "Access Level" fields will be used to determine appropriate access and permission for users in order to compartmentalize data and safeguard sensitive information against unauthorized persons.

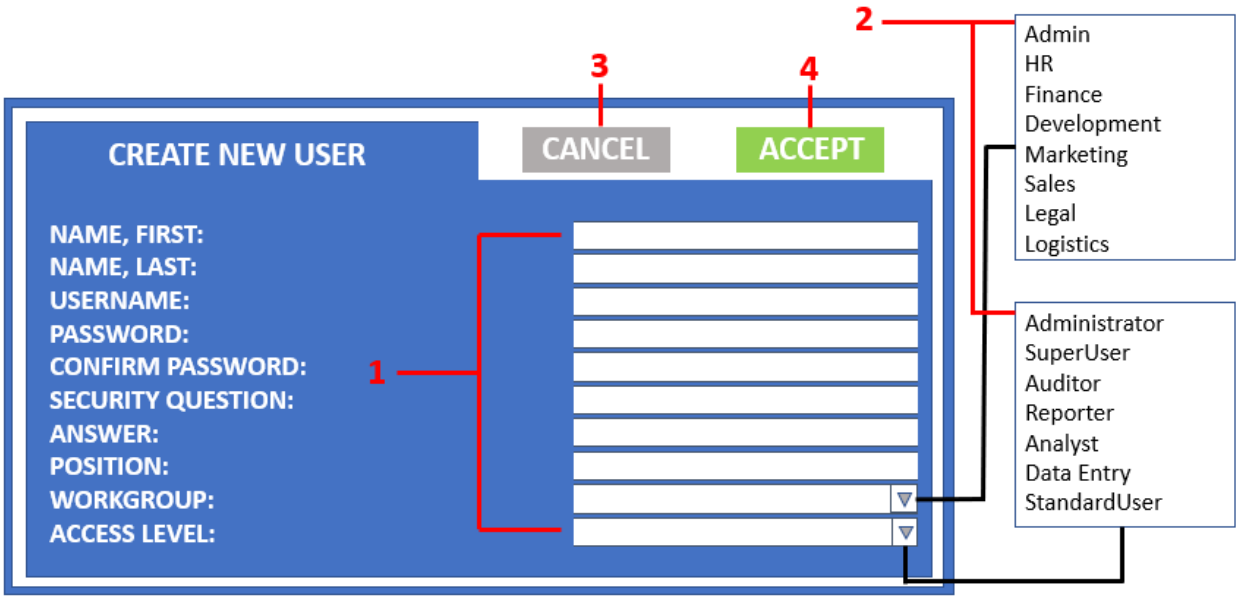

Figure 1: Account Creation Mock-Up

GUI Control Mapping			
ID	Control	Property	Data Source
1	Input Fields	User input fields for users to enter appropriate information	User
2	Dropdown Menu	Dropdown menus displaying possible options tied to permission and access sets	Internal Variable
3	Button	On click, form is reset without saving entered data	Internal Variable
4	Button	On click, form is saved and user database is updated	Internal Variable

E. TESTING

The three types of testing that will be conducted are Compatibility Testing, Security Testing, and Functional Testing.

Compatibility Testing will be used to test whether GTC-Connect is compatible with various operating systems and browsers.

Security Testing will be used to test whether data access restrictions function properly.

Functional Testing will be conducted to determine whether "hard delete" and "soft delete" functions can be performed as expected.

E.1. COMPATIBILITY TESTING, SECURITY TESTING, AND FUNCTIONAL TESTING

Three testing methods will be conducted to verify the successful performance of three aspects of GTC-Connect. Testing is an integral part of the development process as is confirms that client requirements have been met. Should testing reveal that client requirements have not been met, it allows the development team to redirect efforts and begin resolving critical issues.

E.1.1. COMPATIBILITY TESTING – BROWSER AND OS SUPPORT

Tests will be conducted in order to ensure that GTC-Connect is fully compatible with various operating systems and browsers on multiple platforms including: • latest Chrome and Chromium • latest Firefox • I.E 9 and above • Safari 6.0 • mobile & tablet • iOS7 Safari • iOS7 Third Party Browsers (Chrome and Firefox) • Android 4.0 Chrome
Preconditions: Various pieces of equipment will be needed to perform this test including desktop computers, laptop computers, tablets, and smartphones, each running different internet browsers and operating systems outlined in the above requirement.
Steps: The steps the tester must execute to test the feature. 1. Testers will attempt to access GTC-Connect via all browsers included in the requirement 2. Testers will attempt to access GTC-Connect on all operating systems included in the requirement 3. Testers will attempt to access GTC-Connect on all platforms included in the requirement 4. After each access attempt is made from different browsers, operating systems, and platforms, a functions check will be conducted to verify compatibility
Expected results: The expected result is that GTC-Connect will be successfully accessed and pass all functions checks through any combination of browser, operating system, and platform.

Pass/Fail: Pass. GTC-Connect was able to be successfully accessed and passed all functions checks through all combinations of browser, operating system, and platform.

E.1.2. SECURITY TESTING – USER ACCESS PERMISSIONS

Tests will be conducted to ensure that all user accounts' defined access permissions allow them only to access the information within their compartmentalized workgroup/access level.

Preconditions: Multiple test user accounts must be generated with various combinations of workgroups and access levels. Multiple test datasets must be generated restricted to only users with various combinations of workgroups and access levels.

Steps: The steps the tester must execute to test the feature.

1. Tester will log onto a test user account and attempt to access a dataset configured to deny that account access
2. Tester will attempt to access a dataset configured to allow that account access
3. Tester will repeat steps 1 and 2 for multiple test user accounts and datasets until all combinations have been tested and record findings

Expected results: The expected result is that the tester will only be granted access to a dataset when their user account permissions match the dataset access control restrictions. The user will be denied access to datasets when attempting to access a dataset which has higher-level or more specific restrictions than what their test user account is provided.

Pass/Fail: Pass. The tester was only granted access to datasets when their user account permissions matched the dataset access control restrictions. The user was denied access to datasets when attempting to access datasets that had higher-level or more specific restrictions than what their test user account had been provided.

A.1.1. FUNCTIONAL TESTING – "HARD" AND "SOFT" DELETE

Tests will be conducted to ensure that users are able to "hard delete" data from GTC-Connect databases, permanently deleting information. Tests will be conducted to ensure that users are able to "soft delete" data from GTC-Connect databases, temporarily hiding information, before reversing the "soft delete".
Preconditions: Test data must be generated in order to provide a testing environment with zero risk of negative impact on operations.
Steps: The steps the tester must execute to test the feature. 1. Tester will locate test data with accessibility in line with user permissions 2. Tester will attempt a "soft delete" of the data 3. Tester will ensure that the data is hidden from view and temporarily not retrievable 4. Tester will refresh database and attempt to locate previously hidden data 5. Tester will attempt a "hard delete" of the same test data 6. Tester will ensure that the data is deleted and not retrievable 7. Tester will refresh database and attempt to locate deleted data 8. Tester will verify that "hard deleted" data had been permanently removed
Expected results: The expected result is that both "hard" and "soft" delete methods will remove test data, making it not retrievable. Upon attempting to refresh database, only after the "soft delete" method will the test data be returned to its previous state and become retrievable.

Pass/Fail: Pass. Both “hard” and “soft” delete methods removed test data, making it not retrievable. Upon attempting to refresh database, only after the “soft delete” method was the test data returned to its previous state and become useable once more.