**Design Template**

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| American Video Gaming Company |
| Software Project |
| C188 Performance Assessment |

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# Introduction

A CRM is a customer relationship management software that keeps track of the of relationships and potential customers. It provides a map to see where and what information is needed to provide solutions to customers.

# A.1. PUrpose Statement

The purpose of this document is to lay out the requirements for AVGC. We want to be able to help AVGC increase their sales and stay number one. This CRM will clearly define and illustrate what needs to happen to make that possible.

# A.2. Overview of THE PROBLEM

AVGC sales have risen to a whopping 42% in the past couple of years and they are vastly outgrowing their existing systems. They want to continue to be number one and be competitive in the marketplace. They want to be able to try and figure out what the customer is going to buy and from where.

Their system does not have an automated process to determine how to categorize different contacts. With this increase of sales, they will want to be able to have a proposed system that will be able to manage contacts, perform sales tracking and more freely manage the reports. Without our proposal we feel like AVGC will lose customers and not be able to hold the crown for being number one.

Our proposed system will help AVGC be competitive in the marketplace by tracking and categorizing different tickers. We help get the systems up to date and we will also be able to product forecast.

# A.3. Goals and Objectives

Here is a list of the goals we feel our system hopes to accomplish

To be time efficient

To be scalable

To be reliable

To be safe

To allow users to be able to order what they need

To be available

To be user-friendly

Our primary key Technical Objective will be to give AVGC a system that will be able to retrieve customer data and categorize contacts.

Below are some more specific objectives we hope to accomplish

Provide a reliable system that consolidates all contact and business information.

Provide a safe, user-friendly system to track and manage sales to predict upcoming what to sell next.

Provide a time efficient, scalable system available for all devices, browsers, operating systems. This system will operate across the globe for maximum support.

# A.4. Prerequisites

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| Number | Prerequisite | Description | Completion Date |
| 1 | Collect Data | We will be collecting data based on previous users | 08/24/2022 |
| 2 | Gather Hardware | We will need MAC OS, Windows, Linux, and Chromebooks all with Safari, Chrome, Edge, Firefox and Opera. All these systems will need to be up to date with the latest up to date browsers. | 12/01/2022 |

# A.5. Scope

These 5 items are in scope listed below

1. The system shall have system ticket system functionality with effective workflow to cover any interaction with the contract; it must also include an audit trail.
2. Contacts shall be categorized by type.
3. Saving and Reusing filters so that individual Users can tailor their reports.
4. Product forecasting
5. OS and Browser Support

These 5 items are out of scope right now but could possibly be in scope in the future

1. Contract Termination
2. Forecasting currency adjustments
3. Getting an electronic signature
4. Performing win/loss analysis, competitive analysis, competitive product analysis, and discount approval and analysis
5. Activity Management

# A.6. Environment

* Chrome 103.0.5060.134
* Firefox 102.0.1
* Microsoft Edge 103.0.1264.62
* Safari 6.0
* Mobile & Tablet
* iOS7 Safari
* Android 4.0 Chrome
* AWS Cloud Storage

# Requirements

The Five Requirements are listed below in bulleted list.

* Ticket system
* Contacts shall be categorized by type
* Saving and Reusing filters so that individual Users can tailor their reports
* Product forecasting
* OS and Browser Support

# Business Requirements

* The proposed system will have ticket system functionality with effective workflow to cover any interaction with the contract; it must also include an audit trail. We will not only track every interaction with the customer, whether it is via phone call, text, email chat etc. but will include the timestamps of all the correspondence of users. It will track twenty-four hours a day seven days a week, across multiple time zones and countries to get the help your customers need. Our software has worked with countless clients across the globe in tracking the interactions between user and Service Desk. The companies then take that information to later grade how well that interaction went and see what they can do to improve the experience for the end user.
* The proposed system will allow contacts to be categorized by type. Our software will make it possible to classify and categorize each interaction and contact into different groups like problems fixed, still needs help, new user and whatever else is desired. This system helps all internal/ external communication get to where it needs to be. It has helped clients categorize different companies develop and strengthen relationships between suppliers, users and everyone in between based on the unmatched capability of how well it classifies the system into different categories.

# User Requirements

* The proposed system will be able to save and reuse filters so that individual Users can tailor their reports. We do not believe in reinventing the wheel, and with this system it pulls from various databases to keep the costs down. By not recreating the previous filters in place it will speed up the process. It filters out everything from country to zip code the individual users will be able to really hone in on what they are trying to find on their reports. Our software has helped other clients get rid of the boring useless spreadsheets and has made it possible to have an interactive graph.

# Functional Requirements

* The proposed system will be able to forecast products. We will use data mined from people’s smart phones to predict what products are hot and what games are not selling. It will be like you have your own crystal ball and will know exactly what to sell and what not to sell. Here at Walnut and Co our top executives are big time gamers. They like to know what games hot and what games are not.

# NonFunctional Requirements

* The proposed system will support the OS and Browser and will need to be compatible with all the available operating systems and browsers. It will need to run on the latest version of Chrome, Edge and Firefox. It will also need to run on Android and IOS. To Ensure that this is possible not only will it be created to run on these systems but will run 24-hour testing and debugging to make sure that the support is available. It has already been a part of other projects where they were able to offer 24/7 support on the various systems and has specialists hired from each platform working on them.

# SOFTWARE DEVELOPMENT METHODOLOGY

The company is debating on using the Waterfall method or Agile Scrum method. Below is a pro and con list for each method and which method we feel would be in AVCG’s best interest.

# Pros of Using the waterfall method

Pros of using the Waterfall method listed below

* Knowing the Requirements in advance will be an advantage to Agile.
* We believe that our experts have previous experience with similar projects and other clients so it will be a huge advantage since the learning curve is gone.
* We think that there should be more than enough time to build everything Sequentially

# Cons of Using The waterfall method

Cons of using Waterfall method listed below

* Waterfall will make it close to impossible to do any changes. At Walnut and Co, we believe to always be improving and so we would not be able to improve.
* We cannot initiate an earlier initial release. If we were ahead of schedule or if you wanted some sort of early prototype unfortunately, we would not be able to release it until we had a finished project
* We might not know everything up front and unfortunately with Waterfall method we will have to know everything upfront. We will have to know all the potential bugs that could happen, and that can be hard to track even with known possible defects.

# Pros of Agile Scrum Method

Pros of using the Agile Scrum Method below

* We would be able to make sure you were pleased with our work, even in the beginning stages. If there was something that you did not like in the early stages, we could change it.
* We will be able to deliver working software and prototypes throughout the process and at quick intervals.
* We will be able to communicate the progress of the project throughout the life cycle of the project. If there any unforeseen hiccups, we will be able to plan accordingly*.*

# Cons of using Agile Scrum Method

Cons of using the Agile Scrum Method below

* It is less predictable. We will not be able to give you an exact time on when we will be able to finish.
* We will need everyone to be committed to the project. Unfortunately, there will be more time involved, more meetings and overall, more communication.
* We might be lacking in the documentation that we need. Due to getting out projects we might not have enough time to release historical documents which could in turn cause error, or we could get more bugs and not know how to combat them.

# best SUITED

We believe that it is in AVCG’s best interest to use the Agile Scrum method. We think that this is the best fit because it truly gives you guys the most flexibility. Although we will not have a specific deadline that we can get to you we like how you guys will be with us every step of the process.

We will be able to showcase our projects and showcase prototypes to you and if there is something you would rather see, we will do our best to accommodate. Moving forward this will help AVCG because they will be able to see an increase in sales and increase in actual contact with the end user.

# Design

Below are two different charts to show how our software would help.

The first chart is a flow chart, and it is describing the flow on how we would categorize tickets.

The second chart is an ERD model, and it describes the relationships between users and their data.

# Flowchart Categorizing Contacts

Below is a Flowchart describing how it would categorize a contact and incident. It describes what happens when a User calls. If the issue is resolved, it shows where the ticket then goes.

Diagram

Description automatically generated

Figure 1: Mockup Flow chart on when a user might call into the company and the different levels it could go into.

# ERD Diagram Customer Relationship

Below is an example of an ERD Diagram and how it would help product forecast what items customers have previously bought. This describes different data that can be associated with users. The data includes order id, address, and other information like customers status.

A picture containing text

Description automatically generated

Figure 2: Sample ERD Diagram on how it will product forecast and what data it will store.

# Testing

We will be running three tests to see what the proposed system will be able to do. We will be doing an Exhaust Test where we will run all the possible outcomes. We then will run an internationalization test to test the proposed system across the globe. Our final test will be a White Box Test where we will try to throw random things at the proposed system to try and brake it.

# Testing Exhaust

We decided to use Exhaust Testing technique. We are going to try and run all possible scenarios we can think of to make sure that it works with all the operating systems and browsers.

# ExhausT Test 1

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| Requirement to be tested  We will be doing an Exhaust test to make sure OS and browser support will be available with different types of Operating systems and browsers. |
| Preconditions: Conditions that must be present before test case can successfully run  We will need different operating systems to get this started. We will need Chrome operating systems, Mac, Windows and Linux.  We will need all latest up to date browsers of Chrome, Safari, Edge, Firefox and Opera. |
| Steps: The steps the tester must execute to test the feature.   1. We would have users download it onto Chrome, Linux, Mac and Windows. 2. Each user on different systems then would first try with Chrome and record results and success rates. 3. Each user on the different systems then would try Safari and record results and success rates. 4. Each user on the different systems would try Edge and record results and success rates. 5. Each user on the different systems would try Firefox and record results and success rates. 6. Each user on the different systems would try Opera and record results and success rates. |
| Expected results:  We would expect that all the systems and all the browsers would run with our software. |
| Pass/Fail:  Fail. After running the tests each operating system that tried to run with Opera failed. |

# Internationalization Test

We decided to use the Internationalization testing technique. This technique tests the functionality in different countries.

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| Requirement to be tested  We will be using the Internationalization testing technique to help us with Product Forecasting. |
| Preconditions: Conditions that must be present before test case can successfully run  We will need to be able to connect to databases in the United States, Europe, Asia, Africa, and Australia.  We will need to know these users’ data of previous sales, top SEO searches in various parts of the countries. |
| Steps: The steps the tester must execute to test the feature.   1. Collect data from users from the United States and see which products are selling. 2. Collect data from users from Asia to see which products are selling and which ones are not selling. 3. Collect data from users from Africa to see which products are selling and which ones are not selling. 4. Collect data from users from Europe to see which products are selling and which ones are not selling. 5. Collect data from users from Australia to see which products are selling and which ones are not selling. 6. After it has all been collected, write an algorithm to store the new data in various data bases 7. Use SQL and other database languages to retrieve the data 8. Run the reports to see what was previously bought and what’s being looked up 9. From that data write an algorithm to predict the next hot items 10. Deploy that algorithm |
| Expected results: Expected results and any side effects such as updating a database, writing to a file, etc.  We expect that all areas will run and that we will be able to predict what products are going to be selling. |
| Pass/Fail:  Fail. We were unable to collect data from various parts of Asia to see what products were selling.  Pass. We were able to collect data from the other parts of the world and we successfully ran the algorithm to properly forecast future products to be sold. |

# White Box testing

We decided to use White Box testing technique. This technique uses previous knowledge of working methods to test the extra features to try and “brake “the application.

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| Requirement to be tested  We will be using the White Box testing technique to test Saving and Reusing filters so that individual Users can tailor their reports. |
| Preconditions: Conditions that must be present before test case can successfully run  We will need to know what previous filters from the last 3 years have entailed.  Know any unforeseen variables that could be applied to the filter  See what multiple tags cause and do to the filter search. |
| Steps: The steps the tester must execute to test the feature.   1. Collect previous filter algorithms from the last 3 years 2. Run the filter algorithm to make sure that the current filter is up and running 3. Find all the unknowns from the filter search and the random worlds 4. Collect multiple tags to apply to the filter 5. Try to break the system by running multiple tags on the filter. |
| Expected results:  We expect that multiple tags and multiple unknown variables will cause the system to crash, to then determine what the limit of the filter search. |
| Pass/Fail:  Pass. After running the test, we found that after 5 tags or 3 unknown variables it causes the system to crash. |