SOFTWARE REQUIREMENTS SPECIFICATION
Interactive Retail Management Application(IRMA)

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1. Introduction

This section will give an overview of the SRS document as well as the purpose for the document and application involved.

1.1 Purpose

The purpose of this document is to give a detailed description of the requirements for the Interactive Retail Management Application(IRMA) software being developed for Generic Cellular. This document will explain the purpose, interfaces, functionality, and constraints of IRMA. This SRS is intended for use by the customer (Generic Cellular) and Skynet Solutions for the purposes of approval, reference, and maintenance involving IRMA's development.

1.2 Scope

IRMA is a windows based application which will help with the management of new and existing accounts for retail workers within walk-in store fronts. IRMA will assist in streamlining the process of training new retail workers in assisting new and existing customers with setting up new accounts. IRMA will be deployable at all storefronts that operate on windows 10 platforms with access to internet via the stores network system. IRMA will be compatible with future applications developed for Generic Cellular including, but not limited to, mobile applications and network side administrative tools and applications.

2. Product perspective

This system will consist of a single application with access to the server data used to store Generic Cellular customer account information. This application will gather customer information for an account stored on the database, or create a new account with the information required, allow the retail user to adjust, correct, or modify the account information in question before returning the account, either new or existing, to the database.

2.1   System interfaces

Server interface system for customer account information will need to be included as well as a method of communication for both pulling and storing account information.

Database interface system for customer account information will need to be included as well as a method of communication for both pulling and storing account information.

2.2   User interfaces

A login screen should require a registered account that must be setup by a network administrator ahead of time to track retail clerk activity.

An administrative account(manager) should be included for adding, removing, and adjusting employee accounts, as well as tracking activity done by each employee.

Once logged in, the employee should be able to search existing accounts or create new accounts based on required information for security purposes.

An account that has been accessed or created may then be edited and modified by the employee as needed..

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2.3   Hardware interfaces

The application must take input from any generic American keyboard in order for the employee to navigate the menus and output to any current generic monitor compatible with Windows 10. The application must interface with a selection(TBD) of card readers for payments, refunds, etc. IRMA will also be able to read and write from the hard drive installed on the network for storing User activity.

2.4   Software interfaces

IRMA must correctly operate with any working version of Windows 10, including all versions and the system used for Database storage. IRMA must also be compatible with any current card reading software as determined(TBD)

2.5   Communications interfaces

The communications between the customer server, local database, and IRMA are important because they depend on information from each system in order to operate, but the methods used are not important to the application given Generic Cellular has an existing network communications protocol for each of the parts in place. The only importance placed here is correct information being communicated without errors and without security being compromised, and the use of generic interfaces for future upgrading of database-side expansion.

2.6   Memory constraints

The memory allocated and used by IRMA must fall into a reasonable amount for a low resource application(less than 1 GB of RAM) for any current operating machine running Windows 10 minimum requirements. Any future expansion of IRMA should stay within this 1 GB of RAM allocation given most information will be stored server-side for security reasons.

IRMA will track the details of users activities for a period of 30 days in current storage and purge the information at the beginning of each month. The information stored locally will be backed up on the database designated by Generic Cellular upon request, or can be automated to do so

prior to each memory purge. An allocation of 500 MB will be set aside on the hard drive for the purposes of storing said information.

2.7   Operations

Logging into an account for use.
Adding and removing customer accounts.
Accessing and modifying user accounts.
Storing and backing up all data on user accounts via Generic Cellulars Database.

2.8   Site adaptation requirements

IRMA should require no on-site adaptations beyond having access to a computer system, internet network, and card reader external input device as specified earlier in this document. IRMA is developed for a Windows 10 platform with generic keyboard and network access as detailed by Generic Cellular. IRMA will utilize generic information requests and submissions to the database for future database work via interfaces. IRMA should be easily installed by a trained technician and testable for debugging purposes before going live at any storefront location.

3. User characteristics

There are 3 types of users that interact with IRMA; the Administrative account , the Management account, and the User account. Each of these three user types have different uses of the system and their own specific accesses within IRMA.

The User account will have access to add, modify, and archive customer information stored within the database accounts for the purposes of dealing with customers.

The Management account will have access all the User account has access to as well as to IRMA's features for adding and adjusting employees.

The Administrative account will have access add, modify, and archive manager accounts.

4. Limitations and constraints

IRMA is constrained by the network speed and bandwidth available at storefront locations and cannot exceed any information limitation inherent in slow network speeds. The interfaces in place for communications to and from the database and server storage will be potential constraints in the speed at which IRMA can function. Should either go down or have network throttling due to instability, IRMA may cease to function properly until such a time as the connections are stabilized or running once more.

5. Assumptions and dependencies

It is assumed that Generic Cellular will continue working with their existing database solution for the storing, backing-up, and retrieval of account information, or will use Skynet Solutions for future database work.

It is also assumed that Generic Cellular will continue to operate with Window 10 platforms for the life-span of IRMA and will maintain hardware and peripherals compatible with Windows 10.

It is assumed that Generic Cellular storefronts utilizing IRMA will have access to internet networking fast enough for IRMA to properly function.

All payments and refunds dealt with of by IRMA for this edition are assumed to work with credit/debit transactions.

6. Functional requirements

Account(s):
    Has one admin account with specific password/login which is exempt from "all levels" mentioned.
    Create accounts at all levels.
    Search for accounts at all levels.
    Modify account information at all levels.
    Delete accounts at all levels.
        Check for and stop deletion of accounts with standing balance(customer).

Database (simulated via text file):
    Send and receive account information(customer).
Login to account level(s): Admin, Management, User.

User Accounts:
    Create new account(customer).
        Set new account Customer name and address.
    Check for existing account.
    Open existing account(selection).
    Modify account selected information.
        Modify Customer name, address, phone number(s), number of phone lines,
    Delete account selected(archive).

Management Accounts:
    Create new account(customer).

Set new account Customer name and address.
Check for existing account.
Open existing account(selection).
Modify account selected information.
Modify Customer name, address, phone number(s), number of phone lines,
Delete account selected(archive).

Create new User account
Set User account login name and password
Check for existing User account
Open existing User account(selection).
Modify existing User account selected.
Modify User login name, User login password.

Administration Accounts:
Modify Administration Account login info.
Login name and password.
Create new Management Account.
Search for existing Management account(s).
Open existing Management account(selection).
Modify existing Management account selected.
Login name and password.
Delete existing Management account selected(archive).

7. Platform requirements

IRMA will require a Windows 10 operating system on a computer with the minimum requirement specifications to run said operating system.
A monitor and keyboard as well as a card-reader for payments from a selected companies(TBD) are required peripherals for IRMA to function as intended.

If no hard drive usable on each console to be allocated for IRMA storage, a network with acceptable storage for IRMA to store daily actions and account activities(500MB per individual computer) will be required for IRMA to function properly.

8. Performance/Quality requirements

IRMA should have an up-time of around 95% with an automatic recovery process in the event of power failure or crash(upon launch).
IRMA will backup information twice daily; once midway through expected operation hours, and once before IRMA fully shuts down at the end of a workday.
IRMA will store client side information at the end of each transaction closure to prevent information loss in the event of crash or power failure.

In the event that maintenance is needed, IRMA will require the network to be brought down at the storefront in question to be updated and maintained as well as troubleshooting; this can be done before or after operational hours to prevent interruption of store business.

9. Process requirements

The process of developing IRMA will utilize the "Rapid prototyping model" of software engineering, where by the individual components of the system are created in a prototype, semi-functional, form for testing before the design process begins in full. During the prototyping phase the team will meet 1-2 times per week to discuss progress, successes, and failures; allowing for feedback and advice from all team members to find the best solution for each step of the process.

The timeline segments the semester into portions of workload with the final crunch being at the end for polish and final development integrations. IRMA is projected to have prototyped models and full engineering planned out by 3 weeks before the end of the semester. This gives the team several weeks to rework, improve, and implement changes and redesigned code based on the successes and failures of the prototypes developed.