

Software Requirements Specification

for

Consistency

Application Manager/Launcher

Version: Part B

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Revision History

[illegible]

1. Introduction

1.1 Purpose

Consistency is a dedicated software launcher/application manager. Consistency's main goal is to launch relevant software all from one place in an organized manner. Relevant software is considered as software chosen at the user's discretion based on the profile chosen, while also being recommended applications to add. Users range from students to e-gaming clubs, to businesses that make use of multiple software applications in unison. Consistency will keep a consistent speed boost while software is launched from Consistency's customizable GUI.

This new software product will enhance the visual appeal of a user's desktop by introducing a better version of application shortcuts through this application. This will further allow a user to compile all of their favourite applications or applications of choice into one convenient location for easy access.

This new software can be imaged as a more thorough version of shortcuts found in Windows OS's (similar to alias in MacOS's). While the option to create shortcuts with the OS would still be available, it will be more appropriate and seamless to manipulate this new software product which comes with its own GUI that is aesthetically appealing, easier to manipulate, boosts software speed and provides relevant information all in one place.

This new software product will address the issues that are present within Windows OS relating to viewing application information reliably in a concise manner.

This new software product will allow for the option to store applications and application data in the cloud to save space on the local machine.

This new software product will possess multiple functions that will deem it as an all-in-one application manager/launcher/updater etc.,

1.2 Document Conventions

Syntax Conventions

Convention	Description
Calibri (bold)	All references to other sections within this document will be recognized by the Calibri(body) font in bold and capitalized and enclosed by brackets - e.g., (SECTION 1.7)

Acronym Conventions

Acronym	Description
OS	Operating System
SQL	Structured Query Language

DB	Database
API	Application Programming Interface
UI	User Interface
GUI	Graphical User Interface
FR	Functional Requirement
NFR	Non-Functional Requirement
TBD	To Be Determined

Word Conventions

Consistency State	The application is in it's faster state than normal based on the user configuration
Consistency	The name of the Application Software, (Noun)

Highest Priority Function is: Displaying and launching of favourite applications (applications of choice) in on aesthetic GUI

All other functions have their own priority and will be expounded upon in **SECTION 2.2**

1.3 Intended Audience and Reading Suggestions

This document is intended to allow the software developer team to correctly update and manage the software while it is being created and to understand the functionality of it. This SRS can be observed by all stakeholders, testers, developers, and users. The rest of the SRS contains specific insight into precisely how the application should operate, who the application is tailored towards, and what functions are included in the software. The sequence to following when reading this document is the natural reading order; however, understanding the purpose of this product (**SECTION 1.1**), and the scope (**SECTION 1.4**) are the two most important sections in this document that will give insight and understanding when reading the document in its entirety.

1.4 Product Scope

Many users of OS's such as Windows and MacOS have cluttered desktops or have to navigate through countless folders to access applications and files that otherwise could be easily accessible, grouped together, and available for editing (permissions, files, etc.) Consistency is a desktop application software that allows the user to view an appealing platform where the user is fully in control and has a display of all relevant applications at the users disposal, per the users choice. Our goal is to provide accessibility, and enhancement when it comes to everyday use of applications. Whether it be for productivity or leisure, a wide range of users from students to business employees will be appreciative of such software that can efficiently boost the users interaction with applications on the operating system.

1.5 References

(SECTION 3.1) REFERENCES

(What's New in macOS 11 - macOS - Human Interface Guidelines - Apple Developer, 2022)

- <https://developer.apple.com/design/human-interface-guidelines/macos/overview/whats-new-in-macos/>

(UI Design Dos and Don'ts - Apple Developer, 2022)

- <https://developer.apple.com/design/tips/>

(Karl-Bridge-Microsoft, 2021)

- <https://docs.microsoft.com/en-us/windows/apps/winui/>

(Windows 11 design principles, 2021)

- <https://docs.microsoft.com/en-us/windows/apps/design/signature-experiences/design-principles>

(Microsoft Design, 2022)

- <https://www.microsoft.com/design/fluent/#/>

(What is a Graphical User Interface? Definition and FAQs | OmniSci, 2021)

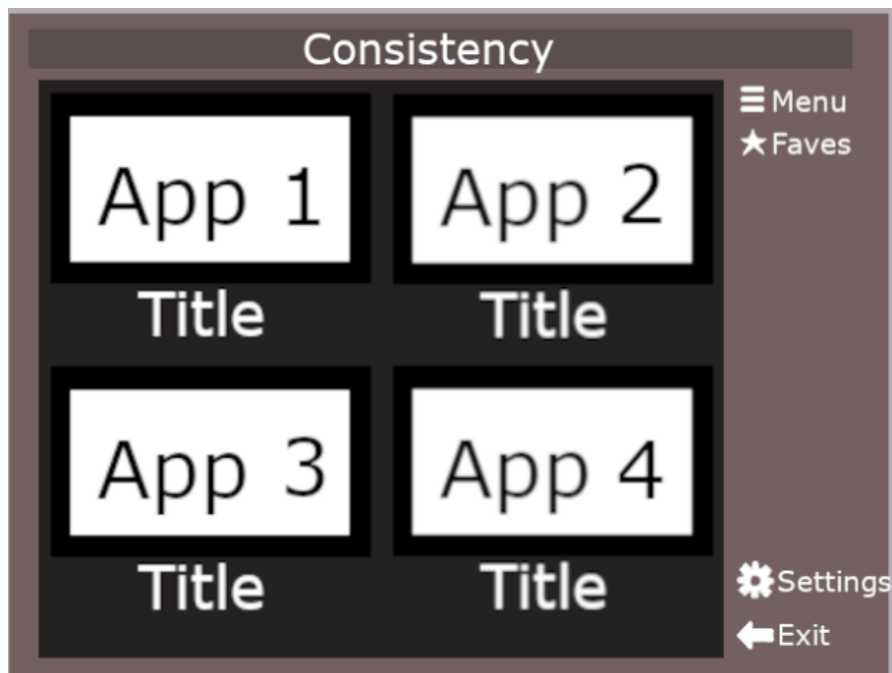
- <https://www.omnisci.com/technical-glossary/graphical-user-interface>

2. Overall Description

2.1 Product Perspective

Consistency is a new software that allows one to access applications and software of their choosing quickly and effectively. It integrates other application launchers of all kinds (i.e., Microsoft Office, Games, etc.) into it and runs them when clicked. It also supplies information about your computer like its temperature and internet ping rate. It also tracks run time and which app is launched the most.

The following is a rough diagram of the main page where no apps are selected and what it would look like when a program is selected. Note that the applications are placeholder, and the colors are subject to change.



This is before an application is selected. A side menu is visible. The menu button will bring the user to a page where they can add/remove programs, see their total application stats and see their computer's stats as well. A feature to be included in a future iteration of the application would be adding a program directly from the application view indicated by a "+" symbol over an empty cell.



This is what shows up when the app is clicked on. The description provided in the example is a satire placeholder. It is the default description and can be edited. The banner will, by default, be the program's logo with the name beside it. This function can be disabled to allow for immediate app launch at the users discretion.

2.2 Product Functions

Main Functions (Other functions will be displayed in (SECTION 4.1))

- Launch any program of your choice – Application Launcher
- Favorite/chosen programs to be launched and ran more efficiently – Application Boost
- Manage applications – Infrastructure Development/Storage Management
- Cloud storage – Infrastructure Development/Storage Management
- Profile creation – Productivity Enhancer
- Show computer specifications (such as hard drive and motherboard) – Statistical Insight
- Application usage data sharing for academic and business – Statistical Insight

2.3 User Classes and Characteristics

Various user classes that will use this product:

1. Teacher
2. Students/Teenagers
3. Business

4. Normal users
5. Organizations

Upon launch, a tutorial tailored towards each class may be displayed and engaged upon or skipped. Tutorials and default layouts will be available for

- a. Leisure Users
- b. Business Users
- c. Gaming Users
- d. Academic Users

They can all use because the product integration is for all Windows OS and Mac OS

Frequency use (from 1 to 4):

1. *Business: Everyday use, when they use Consistency application, faster for accessing relevant work applications such as Word or Excel, PowerPoint or other working tools.*
2. *Teacher: few days or everyday class they have 10 or even 20+ lectures websites need to show in front of students faster*
3. *Student/Teenagers: They can easier to put some functions together like: boosting battery power for better game experiences, notification silences whenever they play games or watch movies at night.*
4. *Old People: Gather Movie or Newspaper apps together, divide and arrange important apps like (health card ID, online wallet) because it's always hard to find them on computer.*

2.4 Operating Environment

The environment that the software will operate:

- *Hardware: PCs, Laptop, Mobile phone*
- *Operating systems: Windows OS, Apple Mac OS, Google Android OS, Linux OS, Apple IOS, Solaris OS*
- *Product using newest version (2022 or newest) with support for previous versions.*

2.5 Assumptions and Dependencies

List any assumed factors:

Assumed 1: based on the Appstore Review Guide, our product doesn't meet the requirements because we got an idea to collect users' habits based on how they open apps then our product will make suggestions for them. So, we cannot put it on Apple IOS

Assumed 2: overly optimistic development- and completion-time estimates, our product needs to adapt a lot of system hardware and operating systems but our estimates times wrong leads customers and stakeholders to disappointment.

3. External Interface Requirements

3.1 User Interfaces

Logical Characteristics of each interface

- Screen images
 - SVG image types will only be used to ensure clarity throughout the application without fault
- GUI Standards/Product Family Style Guides
 - Microsoft Fluent Design System
 - Windows WinUI Library
 - Apple Human Interface Guidelines
 - Apple UI Design Dos and Don'ts
 - Omnisci UI principles

Reference Links can be located in (SECTION 1.5)
- Screen layout constraints
- Standard buttons/functions (e.g. help)
- Keyboard shortcuts
 - Customizable keyboard shortcuts as well as integrated
 -
- Error message display standards
 - Consistent with user chosen theme

Define software components for which a user interface is needed

Throughout the entire software, a user interface is required. A Graphical User Interface that is simple to navigate and is aesthetically appealing to the user will be manipulated and used as the host of this software.

Software Components

- Main GUI – Launcher (launching apps, adding apps, removing apps etc.), Application Manager, Settings, Help menu, Cloud Storage, Profile Setup/Selection, Application Booster Settings,

*Details of user interface design → Separate **User Interface Specification***

3.2 Hardware Interfaces

Examples:

- Keyboard with programmable buttons
Setup programmable buttons and after use it to launch specific application shortcuts.
- Mouse with programmable buttons
Setup programmable buttons and after use it to launch specific application shortcuts.
- Microphone
Launch specific application shortcuts by pronouncing the name of it.
- Stream Deck (optional)
Setup different profiles with certain applications or software shortcuts, which make it easier to launch it.

3.3 Software Interfaces

- Google drive API, OneDrive API or any other cloud storage that has API

- End user's profile will be saved on certain cloud storage via API to be able to use the same profile on other devices.
- Windows API or other OS API
 - Supplies information about your characteristics of computer, temperature, storage, internet ping rate, etc.
 - Help to add specific applications or software
- Database
 - Save the data of user and profiles with the added applications and software

(Add references to 1.5)

3.4 Use Case Table

Use Case name	List of related Requirements ID	Actor(s)	Brief Description
Use Case(s) for Application features(Consistency)			
Boost application on launch	FR01, FR02	Student, Employee, Leisure user	The actor will click on launch to launch an application which will allow the actor to have access to amplified service when using the software they've selected based on settings that are fixed as per the actor(s) preference.
Add application to favorites	FR03	Student, Employee, Leisure user	The actor will add the path to an application on their device and make this a Favorited application. Favourite applications appear in a special, easily accessible GUI and is stored in the default profile.
Manage application	FR03	Student, Employee, Leisure user	The actor will click on a button resembling 3 dots at the top right corner of the application's logo/display picture to access a sub-menu. This menu has options such as remove application, remove from favorites and show stats.

Set time restriction on application	FR03, FR10	Student, Employee, Leisure user	The actor will click on a clock button that appears upon hovering over the application to adjust time applicable settings, which will then prompt the user to select if they would like to restrict access to the selected application
Set app launch time	FR01, FR03, FR10	Student, Employee, Leisure user	The actor will click on a clock button that appears upon hovering over the application to adjust time applicable settings,
Update application	FR03, FR09	Student, Employee, Leisure user, System	When the system detects the app Consistency is trying to launch is out of date, it will prompt the actor to update. When they click on the “Update” button, the app will update to the current version.
View application information	FR03, FR06	Student, Employee, Leisure user	The actor will click on a button labeled “App Info”. A pop-up window will be displayed showing the app’s title, description, times launched through Consistency, etc.
Change boost configuration	FR03	Student, Employee, Leisure user	The actor will click on a “Boost config” button in order to be able to change various aspects of their boost.
Change Consistency settings	FR03, FR09	Student, Employee, Leisure user	The actor will click on a button that resembles a gear. This will open the settings for Consistency such as boost settings and layout configuration.
Use Case(s) for GUI features(Profile)			
Create profile	FR04	Student, Employee, Leisure user	The actor will click on a “Create profile” button to create a profile.

Change profile	FR04	Student, Employee, Leisure user	The actor will click on a “Change profile” button to display a different profile that consists of specific “favorite” applications available to be boosted
Edit existing profile	FR04	Student, Employee, Leisure user	The actor will click on an “Edit profile” button in order to edit their current profile.
Use Case(s) for Account features			
Validate if user is logged in	FR04	System	This will happen automatically by the system whenever it’s launched. It will save whether the user is logged in and if so, it will log the player into the last logged in account.
Login Account	FR04	Student, Employee, Leisure user	The actor will click on a button labeled “Log In” to log in to an account. If the account does not exist and the user tries to log in, a message will show up asking the actor if they would like to create an account.
Edit existing account	FR04	Student, Employee, Leisure user	The actor will click on a button labeled “Edit Profile”. This will prompt the user to change any aspect of their profile including profile picture, username and password.
Create Account	FR04	Student, Employee, Leisure user	The actor will register an account. This account is saved to the cloud such that when the actor switches computers. The profile name, picture and status are all customizable.
Change Account	FR04	Student, Employee, Leisure user	The actor will click on a button labeled

			“Change Account”, then they will enter the password and username. If the credentials match an account, then the user is logged out of their current account and logged into the new one.
Other Use Case(s)(External Interactions)			
Connect social media account	FR07	Student, Employee, Leisure user	The actor will be able to connect to their social media accounts such as their Twitter.
Activate mobile connection for desktop remote	Fr08	Student, Employee, Leisure user	The actor will be able to connect to their desktop through their phone.

4. System Features

4.1 System Feature 1

FUNCTIONAL REQUIREMENTS LIST				
Requirement ID	Requirement title	Short Description	Priority	Requester
FR01	Application Launch	The software will allow any application of the users choice to be launched from the interactive GUI	Highest	Investor
FR02	Application Boost	The software will allow any application launched explicitly from Consistency to be used at a faster rate than normal by prioritizing resources from the computer towards the application	High	Investor
FR03	Application Management	The software will allow for	High	Investor

		viewing/managing of the application chosen by the user. Managing refers to editing file type, details, access, permissions etc.,		
FR04	User Account	This software will allow for a user to create, update, and delete a user account. With an account a user can bring their custom settings to another device seamlessly	High	Investor
FR05	Cloud Storage Integration	This software will allow for the storage of application memory and files in a secured cloud environment. The user will also have the option of saving applications directly on the cloud and running them from the cloud as well through Consistency VM (Virtual Machine).	Medium	Investor
FR06	Application Usage Statistics	This software will allow for users to enable/disable statistics tracking. These reports can be used by employers, educational faculties, e-sports clubs, to track application usage, speed, etc.,	Medium	Investor
FR07	Social Media/E-mail Connection Integration	This software will allow for users to connect to various platforms and share status of what application they're using, invite friends to	Medium	Investor

		the same application, share settings, chat overlay while working etc.		
FR08	Desktop Remote Control	This software will allow for users to remotely control their device from another device with the Consistency application	Medium	Investor
FR09	Integrated Widget Store	This software will allow for the user to download newly developed integrations for the software and widgets such as a weather tool etc.,	Medium	Investor
FR10	AutoTask (Automatic Task Creation)	Automatic Task Creation is a built-in function that can be used to automatically invoke tasks to be done. An example would be sending information from the integrated statistics to an employees manager for cross reference.	Low	Investor
FR11	Profile Creation	The software will allow for different “profiles” to be created. E.g., a profile for education where the user chooses what applications should be displayed on the screen and a profile for gaming when selected would show only games chosen by the user on the screen.	Medium	Investor

4.2 System Feature 2 (and so on)

NONFUNCTIONAL REQUIREMENTS LIST				
Requirement ID	Requirement title	Short Description	Priority	Requester
NFR01	Performance	Response time, processing time, query and reporting time expected to be fast.	Expected	IT administrator
NFR02	OS compatibility	The new system should be compatible with the following OS: Windows OS, Apple Mac OS, Google Android OS , Linux OS, Apple IOS, Solaris OS	Expected	IT administrator
NFR03	API compatibility	The new system should be compatible with the following API: Google Drive, OneDrive, Windows.	Expected	IT administrator
NFR04	Reliability	The system should be produce a “warning message” when user should save his profile in order to use it in future.	Normal	IT administrator
NFR05	Security	Access to the code of the program should be closed from external access. Authorization access scenarios.	Expected	IT security officer
NFR06	Security	uirements, requirements,	Expected	IT security officer
NFR07	Security - Cyber	The system should pass the following tests: DDoS testing,	Expected	IT security officer

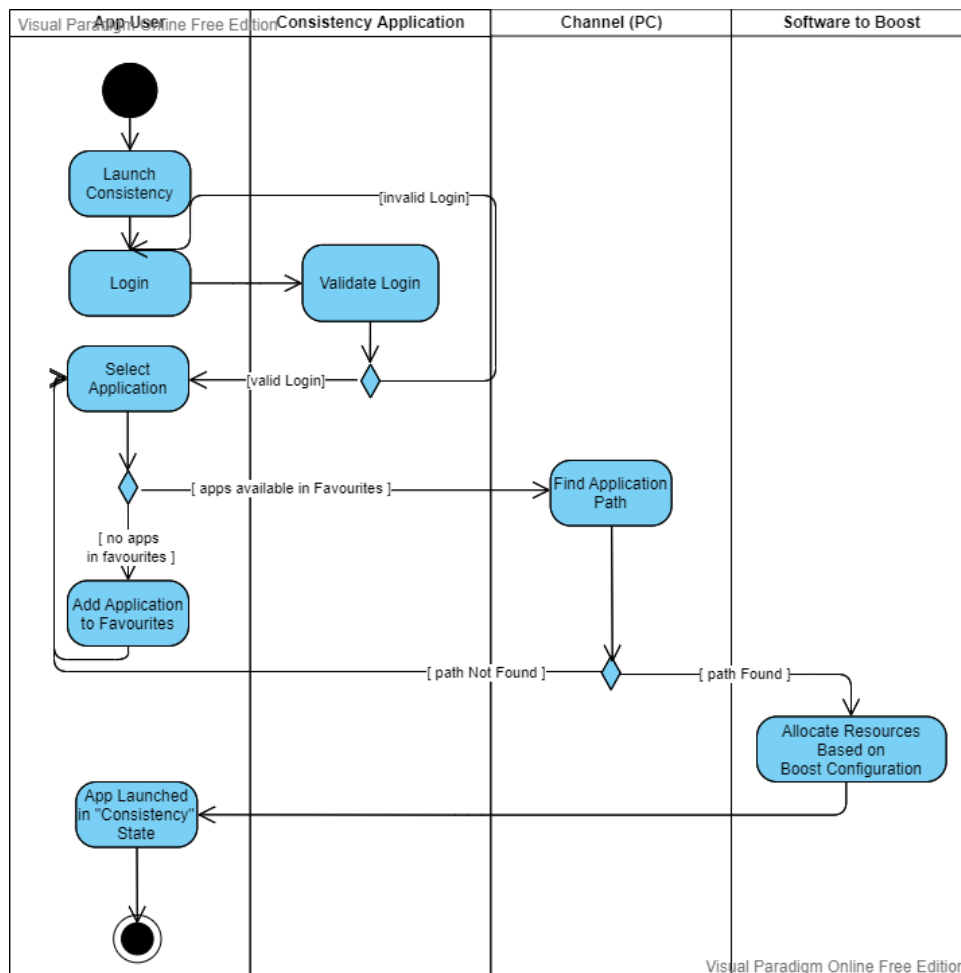
		penetration testing and malicious script testing.		
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4.3 High Priority Use Case

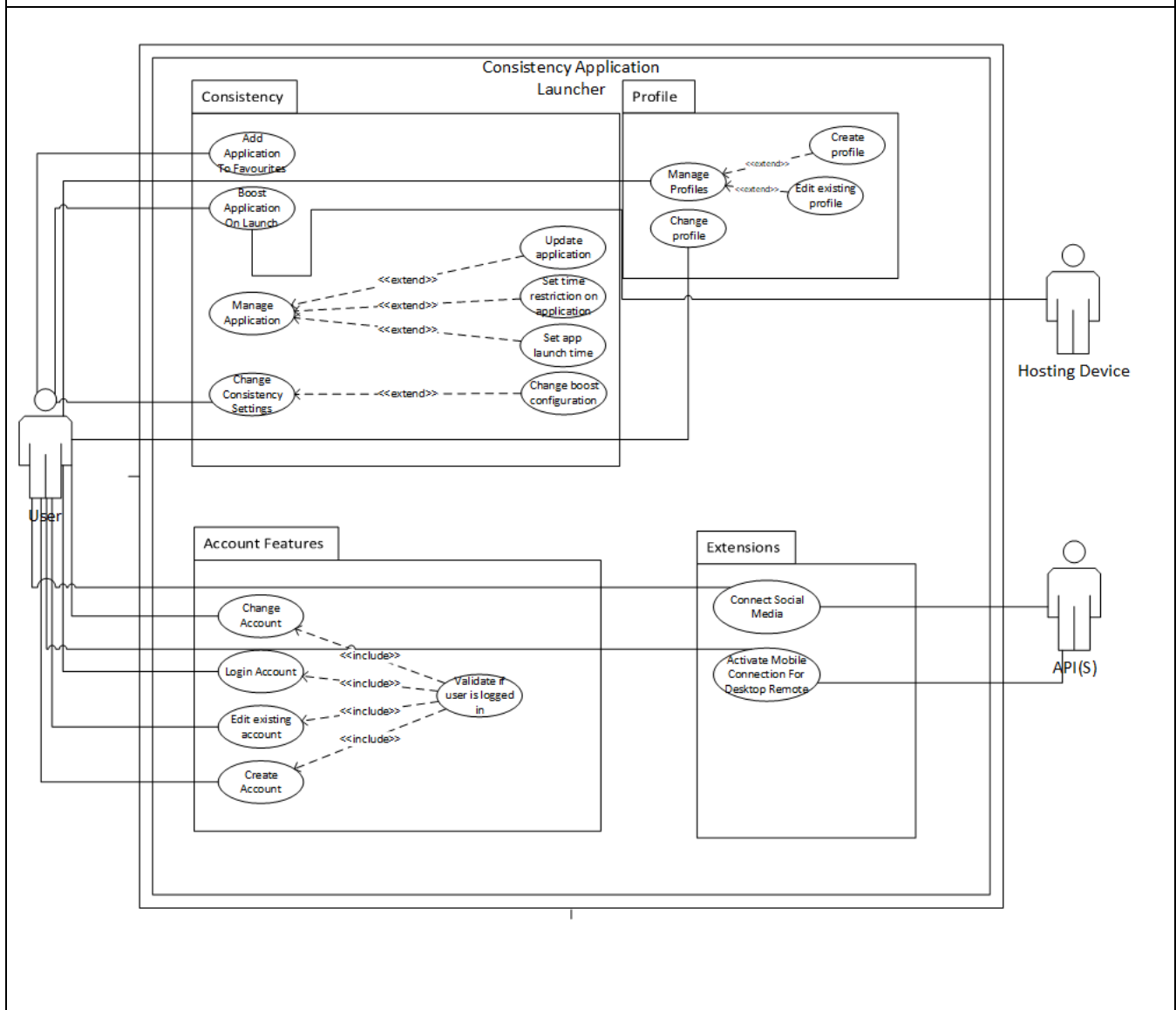
High Priority Use Case: Boost Application on Launch	
Iteration:	1.B
Primary Actor	Application user (Student, Employee, Leisure User)
Goal in Context:	To have the application launched in a “boosted” state based on the users boosting preference
Precondition:	User must have an application in the launch area of the GUI to be clicked. ;User must be logged in and appropriate ID and password must be obtained
Trigger:	The user decides to launch an application from their computer through Consistency that they want to run faster consistently
Scenario:	<ol style="list-style-type: none"> 1. The application user opens the Consistency Application 2. The system displays a log-in page 3. The application user logs in 4. The system validates user log-in information 5. The system displays the landing page with suggested applications to launch in its Consistency state 6. The application user selects an application from the graphical interface 7. The system finds the path to the application and allocates resources and begins to prioritize this application to ensure it’s running at the fastest speed possible without interference thus putting it in its “Consistency” state
Exceptions:	<ol style="list-style-type: none"> 1. The username and password aren’t found in the database — see use case Validate user login credentials 2. The user has no apps in the GUI to be clicked — see use case Add application to favourites 3. The user hasn’t configured their boost preferences — see use case Change boost configuration
Priority:	Highest priority, to be implemented along with basic functions
When available:	First increment
Frequency of use:	Frequent
Channel to actor:	Via PC-first, Mobile second, software application
Secondary actors:	Software applications, devices
Channels to secondary actors:	PC system, mobile system
Open issues:	<ol style="list-style-type: none"> 1. What defense do we have in place to ensure a hacker won’t find a bug in the software which can see all customer information and user sensitive information 2. Some functions on the software are not working how will we respond to this while thousands of users are using the application? 3. How will we implement the software to appropriately suspend the correct processes from device to device to ensure the speed reliability of

the app that the user wants consistent without damaging the channel the user is using(PC, or Mobile phone/tablet)?

High Priority Use Case: Boost Application on Launch; Swim Diagram



Use Case Diagram



Appendix C: Stakeholder Register

Stakeholder Register					
Stakeholder Name	Stakeholder Position	External / Internal	Stakeholder contact details	Operational / Executive	Interest (high, medium, low)
TBD	Client	External	TBD	Operational	High
TBD	Marketing Officer	Internal	TBD	Operational	High
TBD	IT Administrator	Internal	TBD	Operational	Medium
TBD	Programmer	Internal	TBD	Executive	Medium
Anwar Hossain	Investor	External	mhoss151@my.centennialcollege.ca	Executive	High
TBD	IT Security Officer	Internal	TBD	Executive	Low

Appendix D: Interview Questions

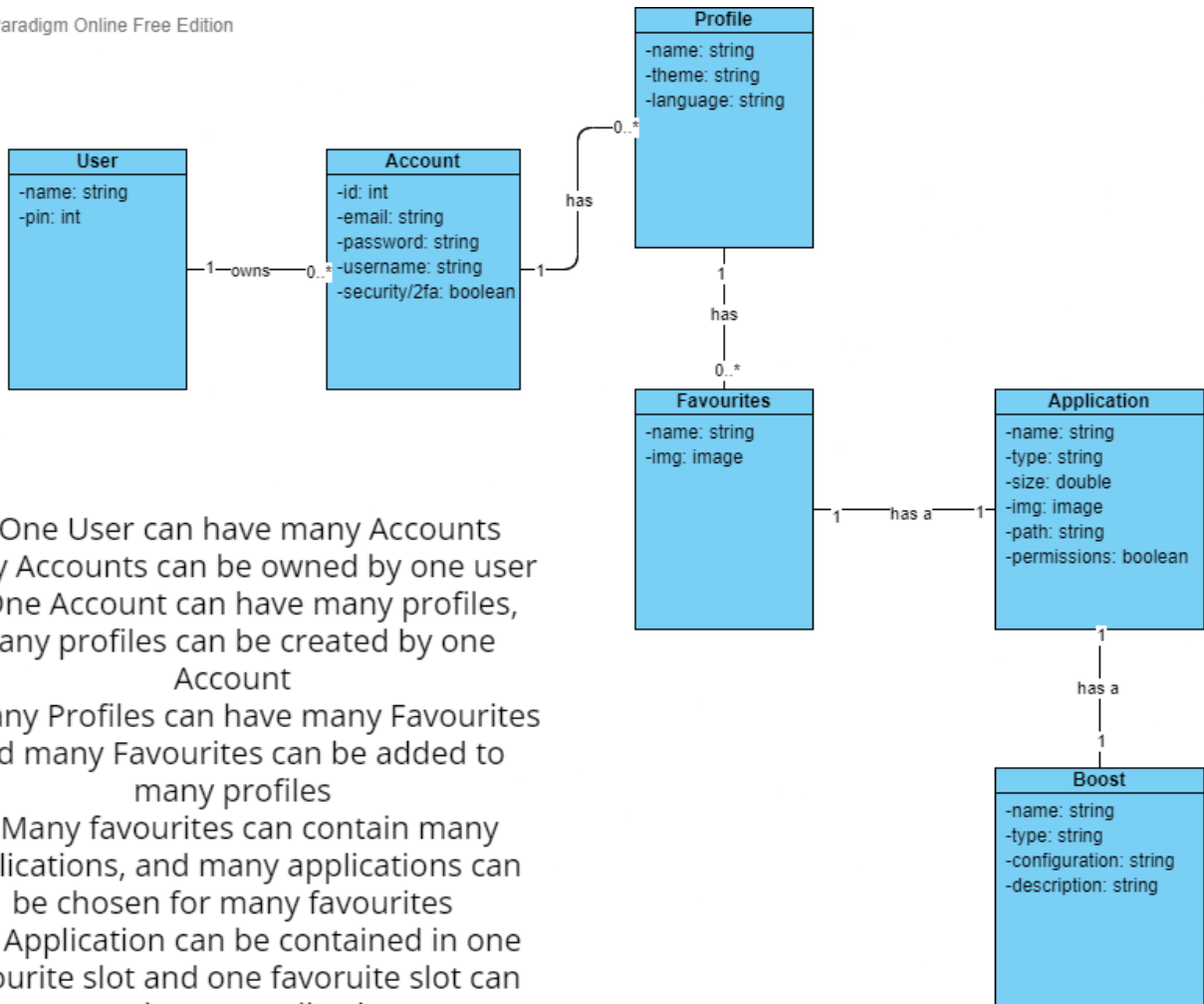
Interview Questions		
Question	Stakeholder Position	Answer
1) Tell me about a time when you managed a project that didn't go as planned. What happened? What would you do differently if given the chance?	Investor	Based on the Appstore Review Guide, our product didn't meet the requirements because we had an idea to collect users' habits based on how they open apps, then our product will make suggestions for them. So, we weren't able put it on Apple IOS's App Store. We then just had to modify our code and policy, it then became validated with Apple
2) How can you debug your app when it's already released?	IT Administrator	Because our Product can run in all operation, so I will take mobile as an example for this question is mobile first: we will use Firebase Crashlytics, which supports both iOS and Android. It provides a lot of useful information about app crashes like the full-stack trace, operating system version, device manufacturer, and user language.
3) Have you ever faced a communication problem while managing a program?	Investor	Our team got a different opinion with stakeholders about the operation, we try to explain clearly also build like skate holders to prove that there way is impossible

Appendix E:

Domain Class

First Cut Domain Class

Visual Paradigm Online Free Edition



1. One User can have many Accounts
Many Accounts can be owned by one user
2. One Account can have many profiles,
many profiles can be created by one
Account
3. Many Profiles can have many Favourites
and many Favourites can be added to
many profiles
4. Many favourites can contain many
applications, and many applications can
be chosen for many favourites
5. 1 Application can be contained in one
favourite slot and one favorite slot can
contain one application
6. One application can be boosted by one
boost and one boost can boost one
application

Visual Paradigm Online Free Edition

Index Cards

CRC Index Cards	
User	
Responsibility	Collaborator
Knows user's name	Account
Receives greeting from the system	User
Receives prompt to log-in	Account
Selects profile to display/use	Profile
Adds applications to favourites	Favourites
Update applications	Application
Configure Security Features	Account
Change theme of profile	Profile

Account	
Responsibility	Collaborator
Retrieve login information from user	User
Validates Login information	Account
Receives security configurations	User
Retains User's name	User
Prompts user to log-in	User
Stores profile data	Profile

Profile	
Responsibility	Collaborator
Display favoured apps	
Translate GUI language based on profile chosen	
Display chosen profile	User
Display chosen theme	User

Favourites	
Responsibility	Collaborator
Get added to a profile for display	Profile
Retrieve data for from application	Application

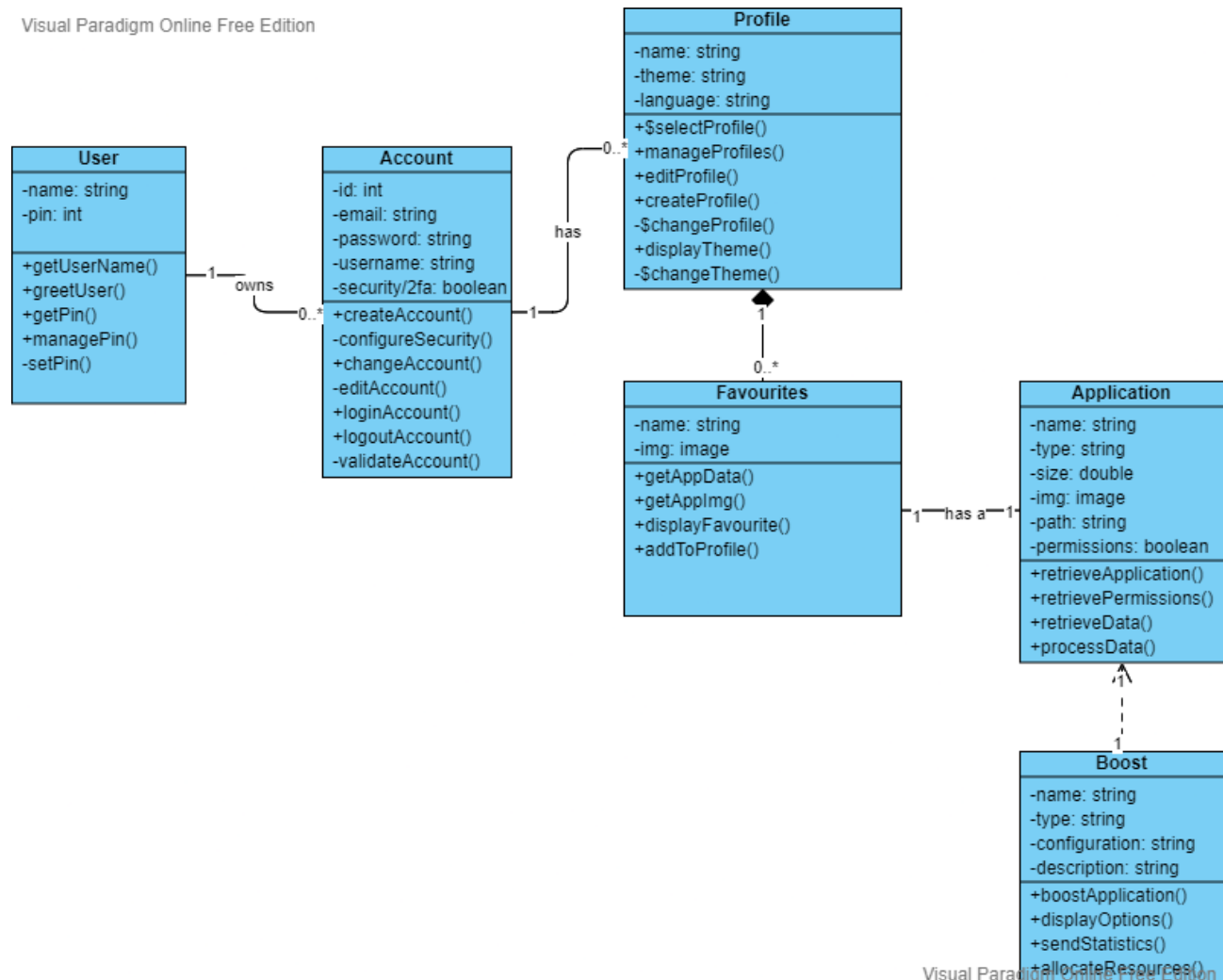
Application	
Responsibility	Collaborator
Retrieves application data from channel (PC, mobile etc.)	
Retrieves application file path	
Run application in administrative mode	
Sends data to Consistency when added to	Favourites

favourites	
------------	--

Boost	
Responsibility	Collaborator
Boost favourite application upon user clicking a favourites object in GUI	User
Sends statistics to Consistency while in “Consistency” state	Favourites
Allocate resources for application to be “boosted”	Application
Display boost options	

Second Cut Domain Class

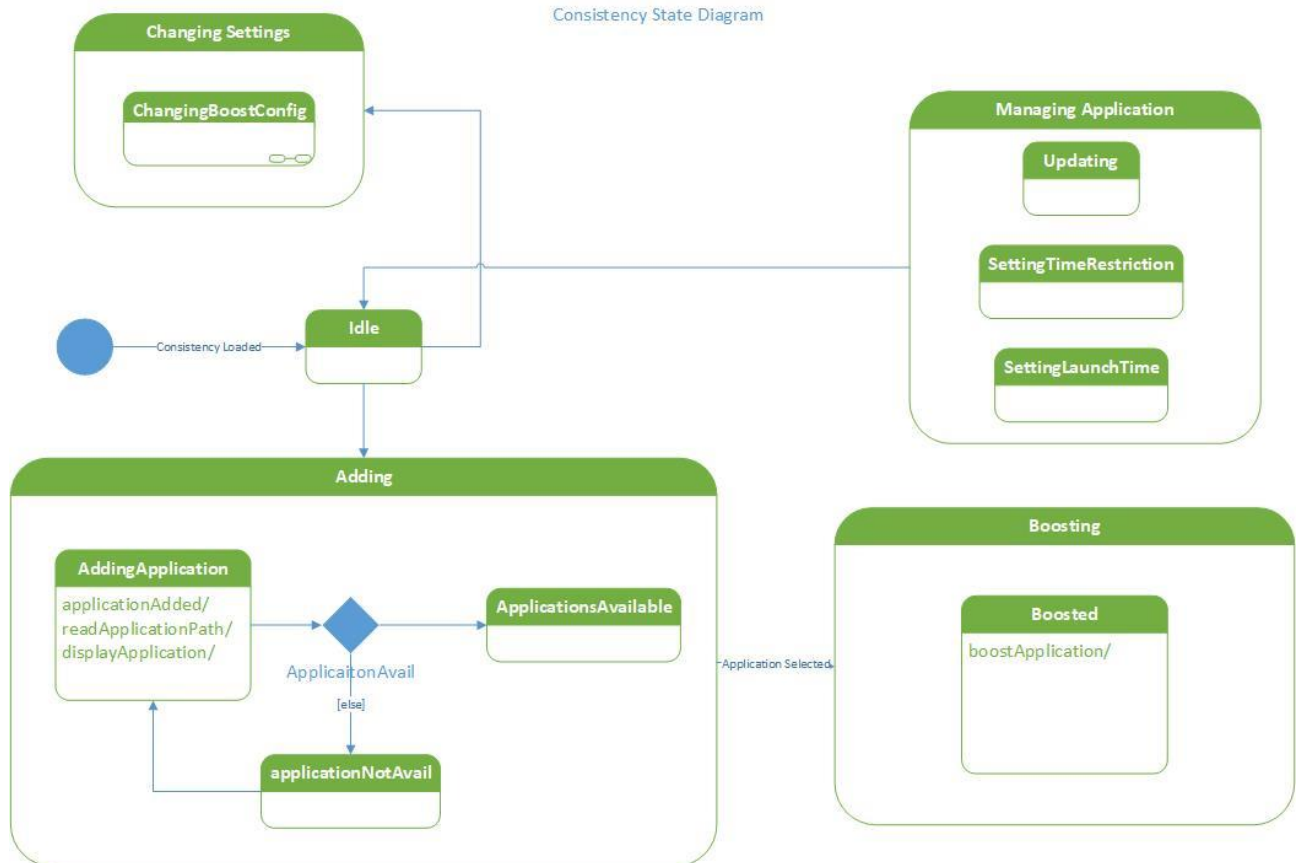
Visual Paradigm Online Free Edition



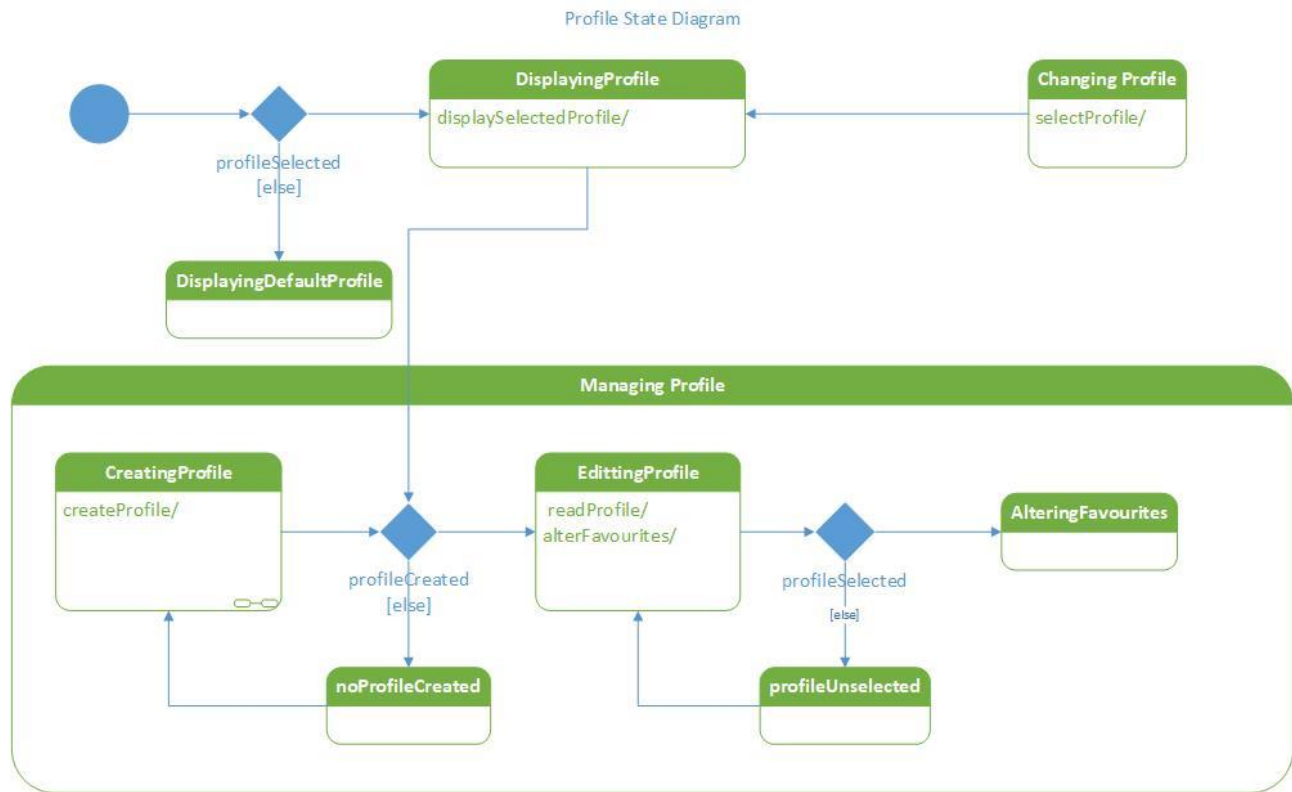
Visual Paradigm Online Free Edition

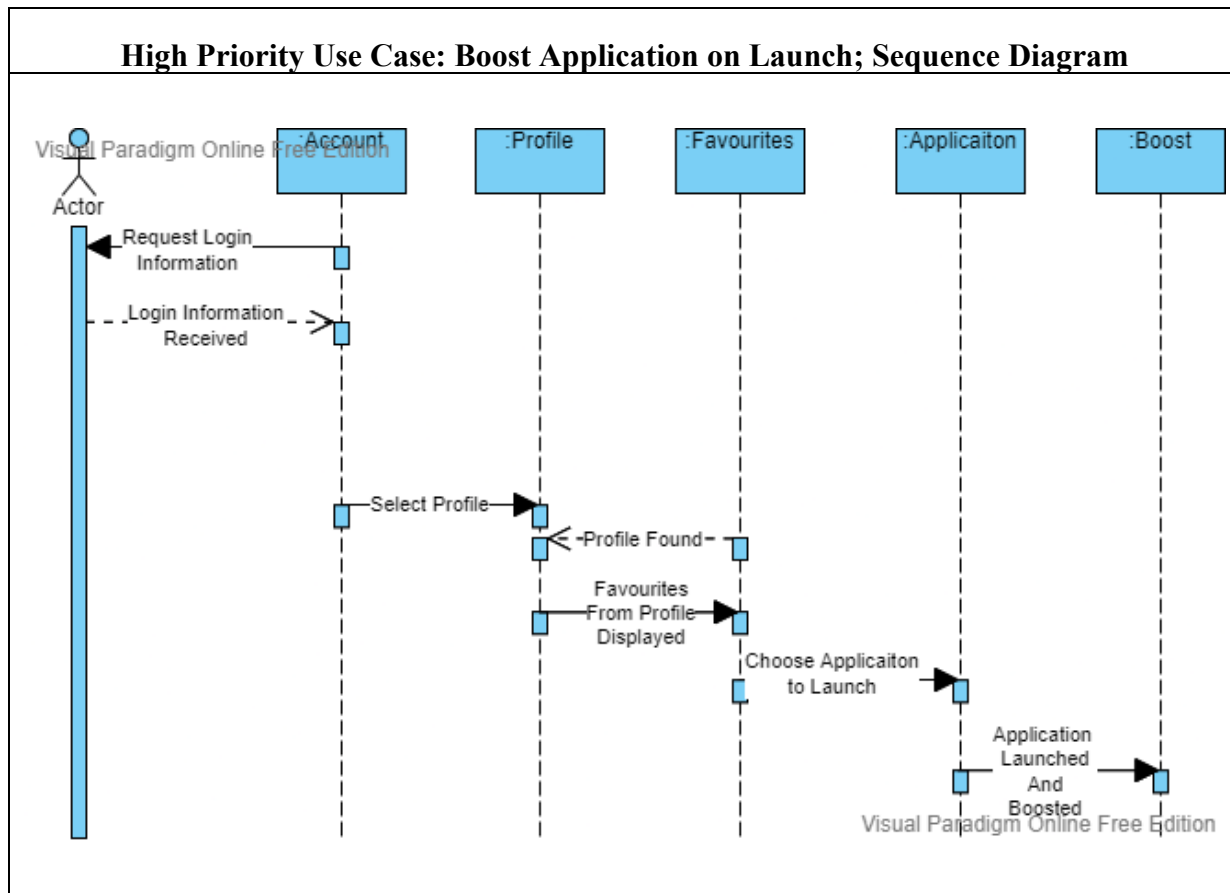
State Diagrams

Consistency State Diagram



Profile State Diagram





Analysis Pattern:

What is an analysis pattern?

A pattern is a solution template that has proven useful for solving a concrete problem. In software development, this concept is known as a design pattern. It provides code solutions. Analysis patterns are patterns that are also used in software development. They describe solutions for problems in specialist domains. These solutions are class diagram models (a UML diagram type) instead of code. What does this mean, exactly?

Do you find any analysis pattern that relates to the problem you are working on?

Yes, the entire program is essentially just a glorified list of applications. Allowing someone to easily access various apps on their device is the very problem we were aiming to solve. There will be a multitude of apps and ads to pull information from (such as pathing and properties) for each and every client who uses Consistency.