Project: Red Pony

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1. Introduction

The goal of Project: Red Pony is to develop a framework, called The Astral Framework, that allows users to share files and limit their access by geolocation and time. Project: Red Pony will also involve the development of an application, called Phylo, to demonstrate the framework. Project: Red Pony is a code-name for the project as a whole.

1.1 Purpose

The purpose of this document is to collect, analyze, and define high-level needs and features of the Project: Red Pony. It focuses on the capabilities needed by stakeholders and target users, and the reasons behind these needs. The details of how the Project: Red Pony fulfills these needs are detailed in the use-case and supplementary specifications.

1.2 Scope

This document refers only to Project: Red Pony itself and is not associated with any other programs, projects, services, or applications.

1.3 Definitions, Acronyms, and Abbreviations

Definitions:

- Geolocation : Geographical location of a given object.

1.4 Overview

This topics covered in this document include positioning, stakeholder and user descriptions, product overview, product features, constraints, quality range, precedence and priority, other product requirements, and documentation requirements.

2. Positioning

2.1 Business Opportunity

The Astral Framework allows for physical access restrictions on digital files. Secondary restrictions such as user identity, time constraints, and quantity limitations can be enforced by applications that use the framework. The idea behind these features is to, as much as possible, tie file sharing to the real physical world.

2.2 Problem Statement

Currently there is very little support for sharing files at specific locations and even less for using location to limit their access. Because humans live in a three-dimensional physical world, social media services are extremely limited by their lack of a physical aspect. A successful solution will provide a social file-sharing network that connects physical and virtual environments.

2.3 Product Position Statement

For the social media user who has ever noticed the pitfalls in uploading files to a purely virtual environment, Red Pony enforces strict location and other access restrictions. Unlike other social networks and file-sharing services, Red Pony gives a physical aspect to files uploaded to a digital world.

3. Stakeholder and User Descriptions

The key stakeholder involved in this project is Professor Anthony Giacalone. This product will be used to assess how well we are able to apply the computer science and software engineering skills gained from our education at California State University, Long Beach. Other stakeholders include the software development team that will use their knowledge gained throughout their engineering careers to develop a well functioning application and the customer base that have downloaded this application for its services.

3.1 Market Demographics

No member of our team is part of any organization and we do not have any reputation in the Mobile Application Market. Our goal is to create an application using a variety of software development tools. Our product will be free so that customers can download it from their mobile device application store and begin using it immediately.

3.2 Stakeholder Summary

Name : Software Developer
Represents : The primary leader in the creation of the software project
Role: Responsible for the design and implementation of the overall system.

Name : Professor
Represents : The primary evaluator of the software project
Role: Responsible for the final evaluation of the software project and implementation of our educational skill set.

3.3 User Summary

Name: Mobile Device User
Description: The end user who will use the system to share and access files. The user's individual purpose for sharing and accessing files is irrelevant to the kind of user they are.
Stakeholder: Represented by the software developers

3.4 User Environment

Project: Red Pony will be usable by people of any age who are capable of using a mobile device. Environmental constraints force users to have an internet connection when running the application. Our software requires that the user possess either an iPhone or Android-compatible device.

3.5 Stakeholder Profiles

3.5.1 Software Developer

Representatives	Daniel Olivera, Mario Lopez, Viet Le, Jared Coleman, Daniel Kim
Description	These are the software developers: the people in charge of creating and deploying Project: Red Pony
Type	Student
Responsibilities	To develop Project: Red Pony
Success Criteria	Success is achieved when the deployed project is able to accurately provide all of the necessary features for Project: Red Pony

Involvement	The software developers are involved in the creating and deploying Project: Red Pony
Deliverables	None
Comments / Issues	None

3.5.2 Professor

Representative	Anthony Giacalone
Description	The person in charge of the final evaluation of the software project
Type	Professor
Responsibilities	To evaluate the end project.
Success Criteria	Success is achieved when Project: Red Pony accurately depicts the features as necessary for the creation of project.
Involvement	The professor is in charge of keeping the students on task.
Deliverables	None
Comments / Issues	None

3.5.3 Users

Representative	Any user

Description	The person who depends on the service to accomplish tasks
Type	User
Responsibilities	To use the product as intended to be used
Success Criteria	Success is achieved when Project: Red Pony if users can easily use all features described in this document.
Involvement	The user uses the app and potentially provides feedback for its improvement.
Deliverables	None
Comments / Issues	None

3.6 User Profiles

3.6.1 Mobile Device Users

Representative	Users interested in using an application to share and access files that are available based on their geographical location.
Description	This is a user that may use the application for both casual and business purposes.
Type	Mobile Device User
Responsibilities	To maintain an updated version of iOS or Android Operating System
Success Criteria	Success is achieved if users are able to easily use all features described in this document.
Involvement	None.

Deliverables	None.
Comments / Issues	None.

3.7 Key Stakeholder or User Needs

Need	Priority	Concerns	Current Solution	Proposed Solutions
Share files	High	Allow users to share files at any given geolocation	See proposed	To provide an interface that allows a user to share a file at their current location and set its access restrictions.
Access files	High	Allow users to access files at any given location, provided they are authorized to do so	See proposed	To provide an interface that allows a user to access files at a given location. Access should be granted if and only if the user meets all access criteria for a given file.
User friendly interface	High	Simple and intuitive layout for users to navigate within the game	See proposed	Aim to create icons and navigation tools easy to find and recognizable. Organize application options in an intuitive and aesthetically pleasing way.

3.8 Alternatives and Competition

To better enforce security, the application proposed in Project: Red Pony will only be available on the most popular mobile phone operating systems, iOS and Android. There will be no alternatives. Currently, there is very little competition to this exact kind of application. There are, however, many simpler file-sharing services available. These services, while more viable for some users, will not be considered true competition because they do not offer the kind of access restrictions Project: Red Pony plans to offer.

3.8.1 Dropbox

As one of the first social file-sharing applications, dropbox remains extremely popular to this day. While dropbox is quite useful, and does offer many of the access restrictions posed in Project: Red Pony, it falls short in providing no access restriction based on location. Other similar social file-sharing services include Google Drive, Microsoft OneDrive, Sync, and many more.

3.8.2 WeTransfer

The WeTransfer service is useful in securely and somewhat anonymously transferring large files. Just as in previously discussed alternatives however, there is not access restriction based on location.

3.8.3 Snapchat

Snapchat is a social media application for sending messages and photos that “disappear” within a time constraint. While this service encapsulates a huge market of users our approach, while it may have overlapping features, is more focused on file transfer in many formats. This would include geolocation implementations which would give our software value beyond a social media platform.

4. Product Overview

4.1 Product Perspective

Project: Red Pony aims to create a product that is independent and self-sustained.

4.2 Summary of Capabilities

Customer Benefit	Supporting Features
File Security	Strong enforcement of file access restrictions and various cybersecurity measures, including encryption.
Free	The application will be completely free for all users.
File Sharing	Players will be able to share files quickly and easily.

4.3 Assumptions and Dependencies

iOS users should have a device supporting iOS 9.3 or higher while Android users’ phones should be updated to work with a API 21 or later.

4.4 Licensing and Installation

The product will be available for installation on the apple app store and google play store. Product will be licensed under the Google Play Store License which considers a user to be licensed if the user is a recorded purchaser of the software application on Android. On iOS phones, our applications will be under the Licensed Application End User License Agreement which every user will have to accept prior to the usage of Project: Red Pony.

5. Product Features

Project: Red Pony will include multiple features that allows files to be uploaded smoothly that will contribute to a positive user experience.

5.1 Fully functional application

A working application that allows users to upload and download files.

5.2 Limiting Access

The files will allows users to restrict files through various means including but not limited to geolocation, user identity, time, and quantity.

5.3 User Friendly Interface

A user friendly interface that allows users to efficiently and smoothly navigate the application in order to complete their intended task.

5.4 Personal user accounts and log-in capability

User accounts allow for easier file-sharing for users, stricter access limitations, and provide accountability.

5.5 Third party login capability

Users will be able to log in using third party login software in order to allow for easier account creation. (ex. Sign in using google)

6. Constraints

6.1 Usability

Product should feature organized navigation tools, an intuitive interface, and an aesthetically pleasing design while providing all application features described in this document.

6.2 User encountered circumstances

The sharing of corrupted, illegal, or otherwise malicious material can affect the experience of other users.

6.3 Performance

Performance of an internet-connected application such as the one proposed in Project: Red Pony is highly dependant on server uptimes and networking limitations (signal strength, bandwidth, latency, etc.)

6.4 Bug report system

Bugs can be reported as issues on GitHub directly to the developers through the customer support email.

7. Quality Ranges

First and foremost, shared files should only be accessible by authorized users. The service should also be able to support many users uploading and accessing files simultaneously. Application responsiveness should always be high and availability delays should be kept to a minimum.

8. Precedence and Priority

Priority 1 (High)	5.1, 5.2, 5.4
Priority 2 (Moderate)	5.3
Priority 3 (Low)	5.5

9. Other Product Requirements

9.1 Applicable Standards

Project: Red Pony is an application that uses the internet and is installable by both iOS and Android users.

9.2 System Requirements

Android Users' devices must be updated to an API level equal to or higher than 21 while iOS device users should have a device supporting a version of iOS 9.3 or higher.

9.3 Performance Requirements

Mobile devices must have enough storage and available system memory to run the application without any performance issues. User must allow the mobile device to detect their current location while supporting a stable internet connection.

9.4 Environmental Requirements

Users must be able to connect to the internet and have location services enabled.

10 Feature Attributes

10.1 Status

Proposed	● Phone number authentication ● Flagging ● Security Via: ○ Third-Party login ○ File access restriction through: ○ Geolocation ○ Tokens ○ Time/Quantity limits ○ Altitude ● Dynamic file locations ● Creation of file threads ● Location-based notification ● Real time database connection ● Built in database of physical locations
Approved	● Phone number authentication

	● Flagging ● Security Via: ○ Third-Party login ● File access restriction through: ○ Geolocation ○ Tokens ○ Time/Quantity limits ○ Altitude ● Dynamic file locations ● Creation of file threads ● Location-based notification
Incorporated	● Flagging ● File access restriction through: ○ Geolocation ○ Time/Quantity limits ● Creation of file threads ● Location-based notification

10.2 Benefit

Critical	Users must be able to create an account that has the capability of sharing and accessing files in order for the application to function as intended. Users should be able to restrict the files based on varying criteria.
Important	Having an application that is visually appealing and easy to use is important because the application requires the users to navigate it constantly in order to complete their intended tasks.
Useful	Third party account creation is not a necessity but a quality of life feature.

10.3 Effort

This project requires the developers to research, program, and field test the created application. Success will require months of proper planning and integration.

10.4 Risk

Risks involve the management of time, specific project due dates, and secure handling of user files including storage and deletion. Any delay in the software process might further delay other necessary processes, propagating to affect later project due dates. The risk of time management is categorized as a high risk as well as the security of user file manipulation.

10.5 Stability

Certain features of the application may change depending on the team's understanding of the importance of certain components. For example, "accounts and log-in" may gain a higher priority amongst the list of components that will be present in the final application, changing the overall build and sequence of activity.

10.6 Target Release

The target release date for the initial version of our product is set to be early May. The main goal by then is to have an accurate representation of the arranged components. Excess time and resources will be allocated to other features.

10.7 Assigned To

Name : Daniel Kim
Position : Leader/ UI Lead
Responsibility: Communicate with the project overseer and provide direction to team members while managing the development of the User Interface.

Name: Viet Le
Position: Security and Privacy
Responsibility: Oversees and implements security measures to ensure user confidentiality, data integrity, and service availability.

Name: Mario Lopez
Position: Database Management
Responsibility: Database design, implementation, and administrative responsibilities.

Name: Jared Coleman
Position: System Design
Responsibility: Management of the overall build and compatibility of components.

Name: Daniel Olivera
Position: Testing and Quality Assurance
Responsibility: Verification of overall test case succession rates and bug tracking.

Name: Anthony Giacalone

Position: Project Overseer
Responsibility: Supervise the progress of the project throughout the semester.