Logo

Description automatically generated

Adrian Paul Reyes, Anthony Smith, John Lisella

System Requirements Document

Introduction and Description model

# Introduction - Author: John

The purpose of this document is to outline the functions of Nexus and provide insights into the system requirements for each. We will go into detail on each function and describe all of the necessary parts of the function. Along with this, we provided detailed diagrams, models and scenarios which should give a good overall understanding of the way the system of Nexus functions as a whole. Our Description Model will detail the different functions of the system. The Class Diagram will outline the objects of the system and their programing aspects. The Use Case Diagram will provide detail on all of the potential ways the system will be utilized. This document also includes a Use Case Scenario section that will give input/output examples regarding varies functions of the system. The conclusion of this document will be the System Sequence Charts which will show actions from the user and how the Nexus System will respond to those actions.

# Description Model - Author: John

## Initial Requirements

In order for Nexus to run, an internet connection is needed. This is because it relies on constant input from other users around the world. Nexus can be accessed and used with an Android smartphone or tablet, Apple smartphone or tablet, and any desktop that has a stable internet connection. The majority of our users use it as an app on their smartphones.

## Security

As mentioned for security, there are minimum requirements for the username and password that a user can use. The username will be limited to any combination of letters, numbers and underscores, and each user must have a unique username. For passwords, it is required to be at least 8 characters long and must include any number of letters, along with at least one number and one special character. There is another security feature we will implement. When a user has not logged in for over a month, or when a user logs in for the first time, a Captcha will appear to ensure it is indeed a person trying to log in and not a bot.

## Processes

### *Sign Up*

A new user will access the Nexus app via desktop or mobile device. Upon opening the app, the first screen you will see will give the option to log in or to create a new profile. If you are new to Nexus, the first step is to sign up and create a user profile. A new user will need to create a username, password and also enter their e-mail address. After satisfying the security requirements listed above for a new username and password, an e-mail confirmation will be sent to the new users along with an authentication link. After the user clicks the link, the registration will be complete.

### *Login*

The first step to accessing Nexus for an existing user is using the login screen. On this screen, the user will enter in their unique username and password. The correct password must be supplied to access an account. If the user inputs the wrong password five times, they will be displayed a “Forgot Password” link. This will prompt them to input their e-mail and the system will look if there is an associated username and password to this e-mail. If one exists, then an e-mail will be sent to the user to reset the password and login. Once the user correctly logs in, they will be taken to the home screen.

### *Where you left off*

The users home page will consist of the Where You Left Off functionality. This will display the last screen the user was viewing during their last visit to the application. This can be a post, a feed, a member’s profile, a chat, comments or inbox. This allows the user to seamlessly open and close the app and never lose track of what they were looking at.

### *Search*

The search functionality can be accessed via a button on the top left-hand side of the home page or from the top of the Feeds screen. This can be used to locate specific communities, member profiles and subjects. This is the key page that members will use to find new topics to follow. As a user starts typing, the functionality searches through the database and provides a list of all pages that have the same characters as what was input. This search capability utilizes advanced AI technologies to attempt to guess what the user is looking for and provide that first on the list.

### *Chat*

The chat functionality can be accessed via the button on the top right-hand side of the home screen. This will allow the user to have direct conversations with any other member. Chats can consist of text, numbers, images, emoji and voice memos. Chats can be initiated by searching for a username in the search function. After finding the specific user, the users can click their name and an option to chat will come up. When a user receives a chat from an unknown person, they have the option to accept or reject. Another way to initiate a chat is simply by clicking a username seen on any post or comment and then selecting the Chat option.

### *Inbox*

The Inbox functionality can be accessed from the bottom left-hand corner of the home page. The Inbox is the main source of any notifications that a user can receive. The standard messaging from other users will send a notification here. Any communities that the user is involved in will send updates on hot topics in their feed. If the user has submitted any posts the inbox will keep them up to date on the post’s activity. Post activities can consist of up votes, down votes, awards and comments. The Inbox will also alert users if someone started following them. Additionally, any responses or reactions to comments the user made will also send a notification to the Inbox.

### *Feed*

The feed can be accessed from the bottom right-hand button of the Home Page. The feed is the heart of the Nexus application. In the feed the user will see all of the latest posts and contributions to the communities they are a part of. The feed will use advanced AI technologies to attempt to prioritize the feed to show items the user will respond to the highest. This is done by looking into each users most viewed pages and actions within the application. Each user’s feed will be completely unique and curated to them based upon the users interests and communities they are members of. From the feed, the user can navigate to any profile, community or posts they see by simply clicking on it. This is also where the user can comment on and give awards or karma to specific posts.

### *Menu*

The menu serves a utility type service for the app. From the menu you can access you profile, view and change security settings, change the theme of the app, view and change preferences & settings.

### *Communities*

Community pages can be accessed by searching for a topic or you can click on the community’s name in your feed or inbox. The community page is a feed of every post and comment that was made in or regarding the topic of that specific community. Users can go here to search through and view all different posts that pertain to the topic. Users can filter through a community’s post history by way of different criteria such as newest posts, most popular posts, trending posts & controversial posts. For a user to join a specific community, there is a join option near the title of each community. The user simply clicks this and then becomes a member. From now on, they will be notified of any trending topics in this community as well as have the community regularly display on their feed.

To be able to make posts, a community can choose to allow either any Nexus member to make a post regardless of membership, or they can allow only members of their specific community to make posts in that community. To make a post, the user clicks on the post option near the top of each community feed.

Regarding how communities and karma interact, the majority of communities have no requirements for karma amount to join. However, some communities choose to have a minimum amount of karma to join. If a user doesn’t have the prescribed amount, they simply can’t join until the amount is reached.

### *Upvotes, Downvotes & Awards*

Each post and comment in a community will give users the ability upvote/downvote or give an award. For example, if a user gives a particularly knowledgeable, helpful, or even funny (depending on the context) comment, any other user viewing that comment can give an upvote, or even an award. If someone is being impolite or offensive, it can get downvoted.

What the upvotes and downvotes do is add to a user’s Karma. A user with higher Karma carries more credibility, can join more exclusive certain communities that have a minimum Karma, and can post and comment as much as they want. Also, a post or comment that has many upvotes will trend towards the top and will be seen by more and more people looking at that comment thread.

With awards come a few perks. Aside from having the shiny award display next to the post or comment it was intended for, they can also give the user who made that post or comment some extras. Those extras could include in app currency to buy more awards, add free content and more. An award will also help a post or comment trend and be seen by more users.

# Class Diagram - author: Anthony

See the attached Class Diagram

# Use Case Diagram - Author: Adrian

See the attached Use Case Diagram

# Use Case Scenarios - Author: Adrian

See the attached Use Case Scenarios

# System Sequence Charts - Author: John & Adrian

See the attached System Sequence Charts