# YARA (Yet Another Reddit App)

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# YARA

## Description

YARA (**Y**et **A**nother **R**eddit **A**pp) is [Reddit](#) feed aggregator and reader.  It helps users keep on top of the content for all their favorite subreddits.  With YARA users can define a list of subreddits they wish to follow; automatically receive updates when new content is available; and view, upvote or comment on anything that catches their eye.

## Intended User

YARA is for anyone who wants a simple way to keep on top of all of their favorite subreddits. It's goal is to provide an easy and intuitive means for gathering all your reddit content in one place. With YARA users can easily add or remove interesting subreddits as well as view, upvote and comment on interesting posts.

## Features

Some of the YARAs highlights include:

- Easily manage a list of your favorite subreddits.
- Automatically receive updates when new content is available.
- Upvote and comment on individual posts.
- Safe for all ages (only SFW subreddits)!
- Share posts with friends and family via email / SMS

## User Interface Mocks

Wireframes for the YARA application. All wireframes were created using Balsamiq.

## Main Activity
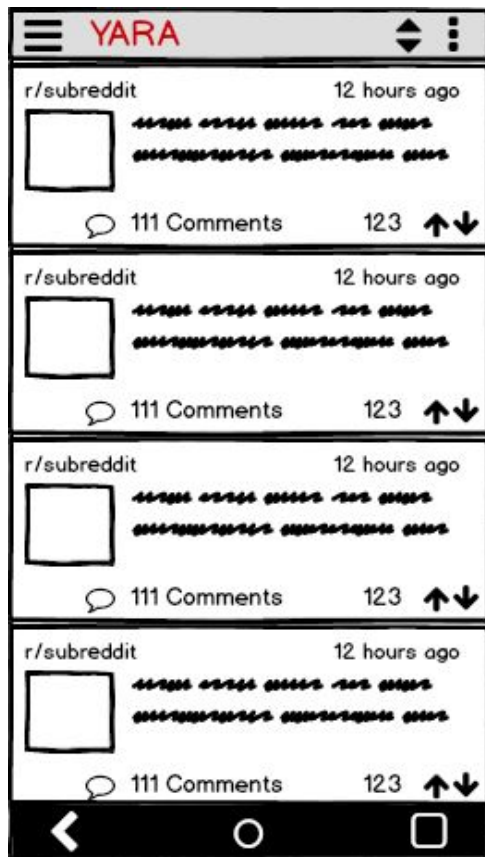


The YARA Main Activity. Shows a list of posts from all of the subreddits to which a user is subscribed. Users will be able to sort the list of posts by time or by popularity (number of upvotes). Users will also be able to upvote or downvote a posts. Users can select an individual post to view the Post Detail screen.

## Post Detail
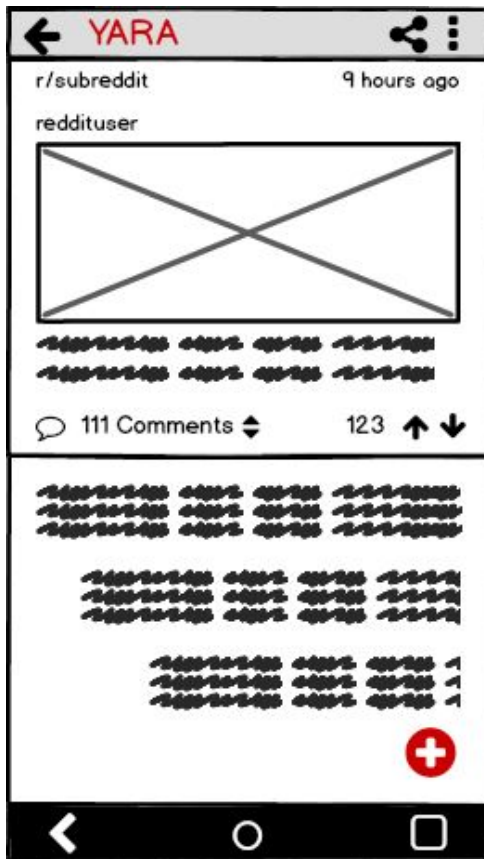


The Post Detail screen.  Shows the complete reddit post as well as the list of comments.  Users can upvote / downvote the post, add a new comment or reply to an existing comment.

## Navigation Drawer



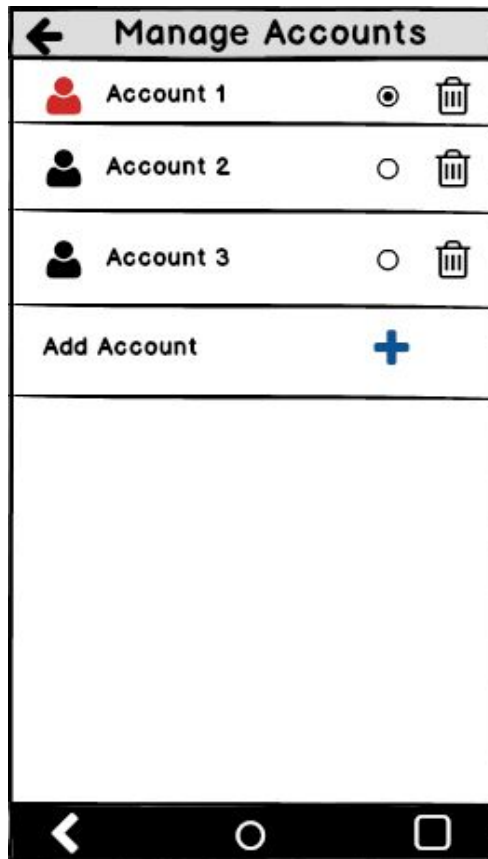The Navigation Drawer. Displays the current logged in user and options to manage user accounts and manage the subscribed subreddits.

## Manage Subscriptions



Manage Subscriptions.  Users toggle individual subreddits to indicate whether they wish to receive updates.

## Manage Accounts



Manage Accounts. Users can select between saved accounts, add a new account or delete an existing account.

**Add Account**
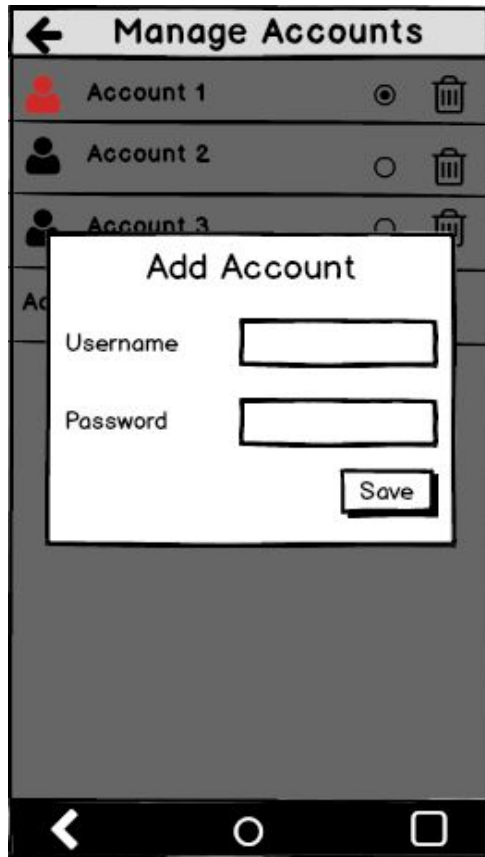


Add an account. A view overlay where users provide username and password for the new account.

# Key Considerations

### Data Persistence

All data relating to the subscribed subreddits, posts and comments will be stored in a Content Provider.

The username, password and Oauth token required for authentication will be stored in SharedPreferences.

### UX Corner Cases

There are several scenarios outside of the normal user flow for which YARA will need to account. These are enumerated below.

1. There are currently no logged in users.

   YARA will have to handle the case when there are no users currently logged in to the application.  In that scenario, YARA will display a message prompting the user to provide a username and password for their Reddit account.

2. The user has provided credentials that are not valid.

   This could happen when either adding a Reddit username and password to YARA, or if the user changes a password outside of YARA.  To handle this, YARA will display a message to the user informing them that the current credentials are not valid and that they should either provide new or fix the current credentials.

3. The user is not subscribed to any subreddits.

   The user has provided valid account information but has not subscribed to any subreddits.  YARA will present a message to the user informing them that they should subscribe to one or more subreddits in order to receive updates.

4. YARA cannot retrieve new posts for the subscribed lists of subreddits.

   YARA does not have internet connectivity and is not able to retrieve updates for the selected list of subreddits. YARA will notify the user that at the present time it is unable to connect to the internet and no new posts are available. The user can initiate a refresh action to receive new updates.  YARA will also attempt to auto-refresh at periodic intervals.

**External Libraries**

YARA will integrate with the following third party libraries:

- JRAW
  Java wrapper for Reddit API.  Listed as one of preferred wrappers on the Reddit github. listed in the Reddit wiki.

- Butter Knife
  The Butter Knife library provides field and method binding for Android Views.  This should greatly reduce the need for boilerplate code within the application.

- [Picasso](#)
  Picasso is an image downloading and caching library for android.  It will be used to download and display images for Reddit posts.

Should they be needed, YARA will also include the following libraries:

- [Gson](#)
  Gson is a Java serialization/deserialization library that can convert Java objects into JSON and back.  Removes the need to provide custom code to manipulate JSON within the application.

- [OkHTTP](#)
  OkHTTP is an HTTP client for Java and Android applications.  Removes the need for custom code to handle HTTP requests and responses.

**Google Play Services**

YARA will incorporate [Firebase Analytics](#) to track and measure user engagement.  As a compliment to Firebase Analytics, YARA will also include [Google Tag Manager](#) to help manage the analytics tags remotely from a web UI.

YARA will also include the [AdMob](#) mobile SDK to display ads within the application.

# Next Steps: Required Tasks

## Task 1: Project Setup
The initial steps to create the project and configure application libraries:

- Create a new project in Android Studio targeting phones and tablets.
- Update the application build.gradle file to include the latest versions of all dependent libraries.
- Create a Firebase project in the Firebase console and add the Firebase SDK to the newly created application.
- Define a signing configuration, including keystore and password.

## Task 2: Integrate with Reddit API
Use the JRAW library to integrate with the Reddit API:

- Create Reddit account used for testing / debugging.
- Follow JRAW documentation to set up a simple authenticated request to Reddit API.

- Add a basic log-in Activity to accept username and password.
- Use SharedPreferences to allow user to store login information locally.
- Add Navigation Drawer and menu item to allow user to edit authentication credentials.

## Task 3: Retrieve and display list of subreddits

Once a user is authenticated, the next step will be to retrieve a list of subreddits to which a user is subscribed:

- Use stored authentication information to retrieve a list of subscribed subreddits.
- Add a UI element to allow user to manage subreddits.
- Add a ContentProvider to store the list of subscribed subreddits.
- Implement a Loader to provide updates in subreddit subscriptions to the UI.
- Add menu item to Navigation Drawer to allow user to edit subscribed subreddits.

## Task 4: Retrieve latest subreddit posts

Given a set of stored subscriptions, we will need to download the latest posts:

- Modify the ContentProvider to support subreddit posts and comments.
- Add a SyncAdapter to download new posts and store in ContentProvider.
- Remove posts older than 2 weeks, in order to manage ContentProvider size.

## Task 5: Display post list

Display a list of posts from the user subscribed subreddits:

- Add an Activity to display a list of posts.  This will be the MainActivity for the application.
- Add buttons on the posts to allow the user to up / down vote a specific post.  UI controls will launch AsyncTasks to handle actions outside of main UI thread.
- Add sorting functionality to allow user to sort by post age or popularity.

## Task 6: Display post

 Display post detail.  Specific actions include:

- Add an Activity to display
- Display post detail including title, description, images or videos.
- Add an AsyncTask to download the list of comments for post.
- Loader to update UI with downloaded comments.
- Implement UI controls that allow the user to upvote / downvote posts.
- Implement Intents to integrate with applications to handle content actions (e.g. launch videos in YouTube).

- Add a FloatingActionButton to allow the user to add a new comment.
- Implement UI control to allow user to reply to existing comment.
- Add menu item to allow user to share post.

## Task 7: Integrate with Google Services

Integrate with the Analytics and AdMob Firebase APIs:

- Integrate with the Analytics API to add app usage and engagement tracking.
- Integrate with the AdMob SDK to display ads.  Display test ads on the MainActivity of the application.

## Task 8: Implement Widget

Implement the widget to provide post information on the home screen:

- Implement the AppWidgetProvider.
- Add widget UI which displays a randomly selected subreddit post.
- Add Intent to launch PostDetail view when user clicks on widget item.
- Capture the preview image and add it to the app configuration.