



Repomaker Usability, Zimbabwe Study

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Prepared by Carrie Winfrey and Tiffany Robertson, Okthanks, in partnership with F-Droid and Guardian Project



For more information, contact carrie@okthanks.com.

Purpose

This study was a follow-up to the initial test (Round 1) that was conducted in June 2017.

The purpose of this study was to understand the following things:

- Are users able to complete basic tasks including, creating a repo, adding apps from other repos, removing apps, editing app details, and creating a second repo?
- Do participants understand how to get the apps from a repo installed on an Android phone?
- Word choice—Do people understand the word repo?
- Is Repomaker a useful tool for participants?

After the initial test (Round 1), multiple UI Improvements were made prior to Round 2. They include:

- Update to the main repo view—replaced ‘Add from other Repos’ button with the ‘Add from Gallery’ button and changed the layout
- Multiple layout updates to the Browse View
 - Added a ‘Back’ button
 - Removed ‘Done’ button
 - Redesign of categories and filters
- Search and filter interface
- Changed ‘Apps’ to ‘Content’ in the tab menu
- Added description as a title above the text area on the app details page

What was tested: [Link to youtube video.](#)

Methodology

The study was hosted by facilitators on location in Zimbabwe with potential users within our target audience. It was focused on the trainer use case. The narrative below describes the target use case.

Narrative. You live or teach people in a location with poor internet quality. Your wifi and data connection are not reliable, and rarely can you use Google Play to get apps and app updates on your phone. This makes it difficult to do your job. As an instructor, your job is to train journalists how to stay safe while using their phones. You teach them ways to keep their communications and media private.

The study consisted of 3 parts.

1. **Usability study.** Participants were asked to use Repomaker to complete tasks as we prompted them to do so.

Task List:

1. Login to the app. Create a repo and add three apps that are useful for the journalists you train.
2. Add the Twitter app.
3. Add the Courier app from the Guardian Project’s repo.

4. Add a description to the Courier app.
 5. Remove an app from your repo.
 6. Create a second repo. You don't need to add any apps.
 7. Reopen your first repo.
 8. Share your first repo with your journalists.
 9. Open the page you just shared.
 10. Talk through how your journalists would add this repo to their android phone.
2. **Debrief.** The following questions were discussed.
- a. Would the individuals you train feel comfortable downloading F-Droid in order to get access to the apps in a repo? (Note: F-droid cannot be downloaded from the Google Play store. It can be downloaded directly from the fdroid.org website or received over bluetooth from someone in the same room. Also, downloading F-Droid requires you to enable unknown sources on your phone.)
 - b. Please tell me how Repomaker would be useful for you?
3. **Survey.** Users were asked to complete the survey immediately after the study:
<https://goo.gl/forms/Acq4zYB3KQtQPxBa2>

Participants

5 people participated in the study from Zimbabwe. Four out of 5 participants filled out the follow-up survey. Of those, 2 were men and 2 were women. 100% of testers have experience training and three had prior knowledge of F-Droid.

Main Takeaways

In general, people are excited about this tool! Zimbabwe has very poor internet connection and often poor internet quality. Conducting trainings in remote areas of Africa is difficult, time consuming and frustrating. Trainers often spend a lot of money buying data credit so each individual attending will have internet access to download apps.

Trainers also feel they waste time helping individuals download the necessary apps for a training. Even then, attendees download the wrong apps. Participants referenced their experiences when conducting trainings and how Repomaker would be very useful for distributing apps. Many feel the interface is straight-forward and easy to use and many would like to see it available for their upcoming trainings. View [Is it Useful?](#)

According to the overall survey results (including responses from Round 1 and Round 2, shown in the graph below), we found the biggest challenge was that *participants can't connect to the internet*

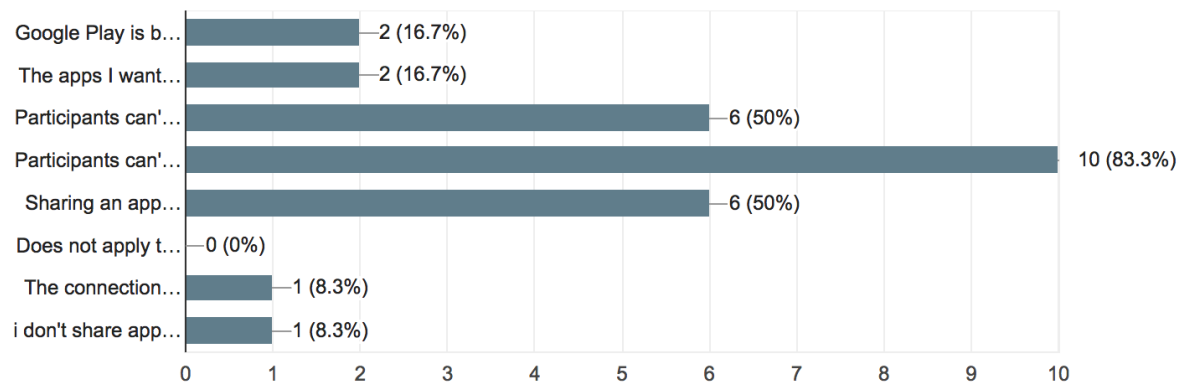
during a training (83.3%). Followed by the significant issue that *participants can't connect to the internet before the training* (50%). These present significant challenges to trainers.

In order for Repomaker to be a useful tool for this community, the following requirements must be met:

- A trainer needs to be able to create a repo and share it completely offline during a training.
- The tools necessary for a successful training need to be available on F-Droid. Currently, only some of the apps are available, but not all.

If you answered 'yes' or 'sometimes' to the last question, which challenges do you face?

12 responses



Effectiveness of UI Improvements made after Round 1

According to the survey, most participants felt the UI was clear and intuitive to navigate. Below, is an overview of the improvements made after Round 1. Each item documents the issue participants had in the first round, the UI improvement, and the behavior of participants in round 2.

Repo content view (various tasks)

- Round 1
 - Some participants had trouble finding how to add apps from already available repos. Repo was an abstract concept, and many participants tapped the 'Add' button instead of 'Add from Repos' because they were unsure what 'Add from Repos' meant. Also, the 'Add' button was more and prominent.
- Improvement:
 - Changed the UI and wording of the 'Add' button to read 'Add from Gallery' and included the add your own files button below.
- Round 2

- Everyone tapped the 'Add from Gallery' button right away with no problem. Didn't seem to linger around for other ways to add.

Add 3 apps from the gallery (task 1)

- Round 1
 - Apps were being 'forgotten' when the page reloaded or you switched between views.
- Improvement:
 - The apps are auto saved and there is a counter in the UI showing the number of apps added to your repo.
- Round 2
 - Participants had no trouble adding three apps and continuing to the next task.

Add a description to Courier (task 4)

- Round 1
 - Most participants edited the summary box.
- Improvement:
 - A title for the description box has been added.
- Round 2
 - Most participants correctly edited the description box. Had no problems understanding where to edit.

UI of Search and Filter (task 1, 2, 3)

- Round 1
 - Participants used the search bar to search for Twitter, but rarely utilized the filter option unless prompted.
 - Some participants selected categories, then tried to search for Twitter and saw no results. It wasn't clear to them that the search results were filtered.
- Improvement:
 - Revised UI of filter option as well as search bar.
- Round 2
 - Many participants didn't even see the filter options.
 - No one had issues with trying to search and not realizing they had a filter option selected.
 - On other tasks, some participants utilized the search bar and the filter option, creating a more defined search.

Back button in Browse View (various tasks)

- Round 1
 - It was unclear how to get back to the view of the repo once people were on the gallery page. In round 1, participants wanted a clear way to go back from the gallery view.
- Improvement:

- Added a back arrow, and removed the done button so there wouldn't be redundant options.
- Round 2
 - After adding apps, participants seemed to look for a way to say 'done'. After a little lingering, they tapped 'back' arrow.

Feedback after creating a Repo (i.e. task 1)

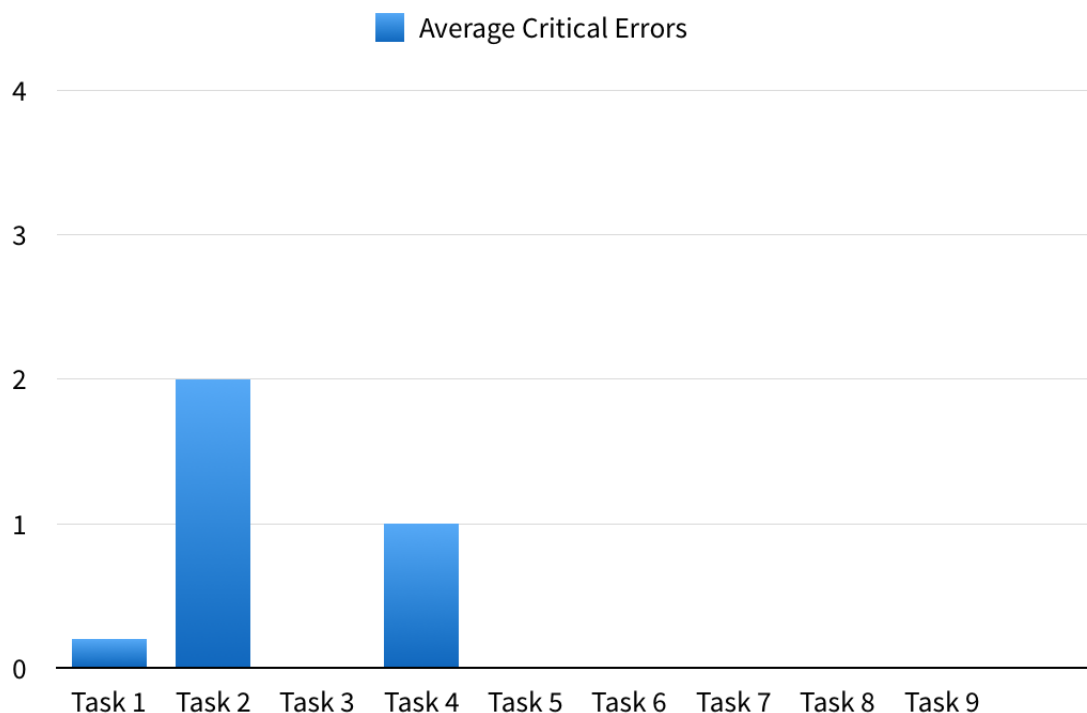
- Round 1
 - There was no indication after creating a repo, if the page was loading or there was a slow internet connection.
- Improvement:
 - Added a process indicator. After naming a repo, while the repo begins set-up in the background.
- Round 2
 - After naming a repo, the process indicator appears. Users were not confused and did not comment about there being a lag.

Usability Metrics

Usability metrics refer to participant performance when completing the assigned tasks. We measured critical and non-critical errors for each participant, per task.

Average Critical Error Rate:

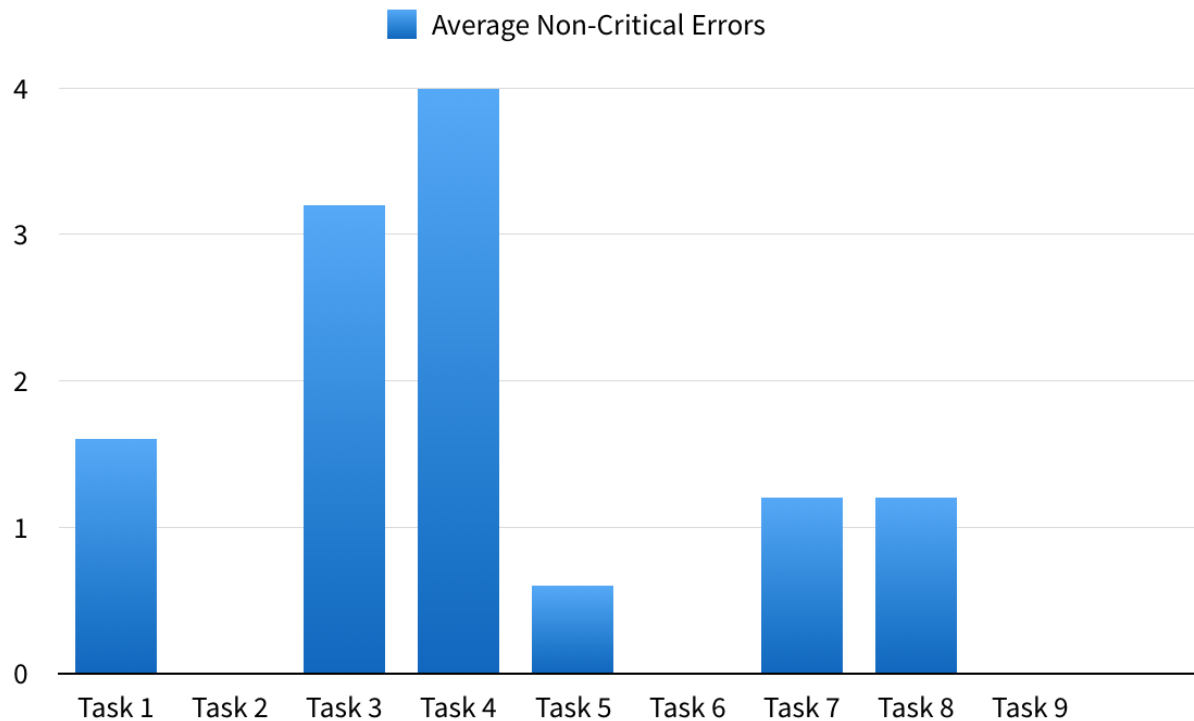
Critical errors are reported as errors that result in failure to complete the task. Participants may or may not be aware that the task goal is incorrect or incomplete. Independent completion of the task is the goal. Help from the test facilitator or others is to be marked as a critical error.



- Task 2: Twitter app not available in version of Repomaker that was tested.. All participants failed task.

Average Non-critical Error Rate:

Non-critical errors are errors that the participant recovers from alone and are not such that the participant can no longer complete the task. They can include errors such as excessive steps taken to complete a task or initially using an incorrect function but recovering from that incorrect step.

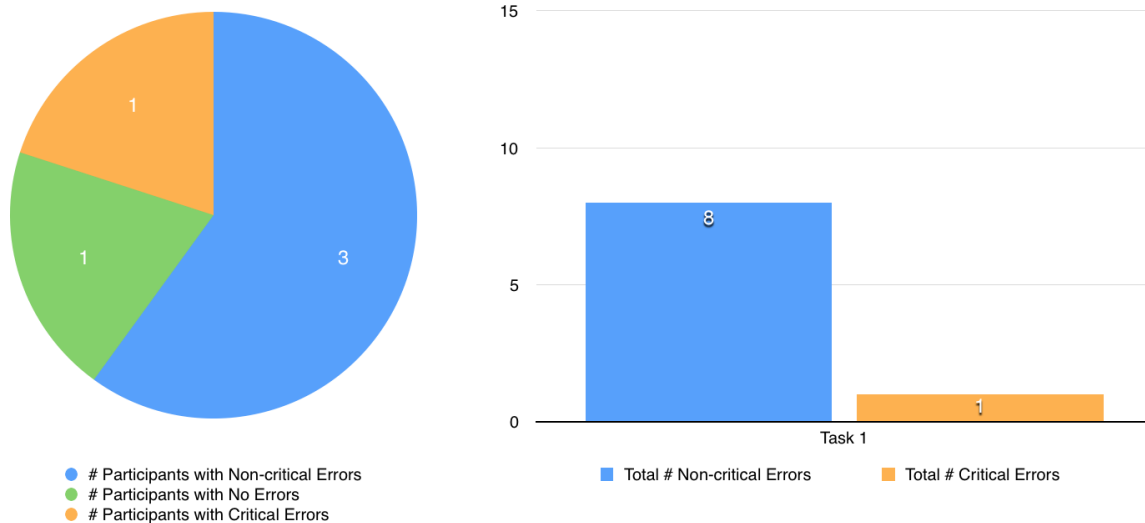


- Task 3: Non-critical errors were high because one participant tried searching for the Courier app within the Guardian Project's repo, but their search bar still said 'Twitter'. Also, two participants tapped 'info' and 'share' before filtering their searches within the gallery.
- Task 4: One participant accounted for 20 non-critical errors because they tried to edit the app in the gallery view and the function is unavailable.

Task Specific Findings

Task 1: Login to the app. Create a repo and add three apps that are useful for the journalists you train.

- Number of Participants with Critical Errors: 1



Observations:

Apps Gallery View

- Most tapped 'Add from Gallery' right away
- One participant, after creating their repo, moved on to the second task. Did not even try to add 3 apps. Therefore, they failed the task
- People would scroll and scroll looking for a specific app rather than searching. They expected it to be in some order, but found it hard to locate the apps when they couldn't discern an order
- None of them actually saw the filters under search

Participant Feedback:

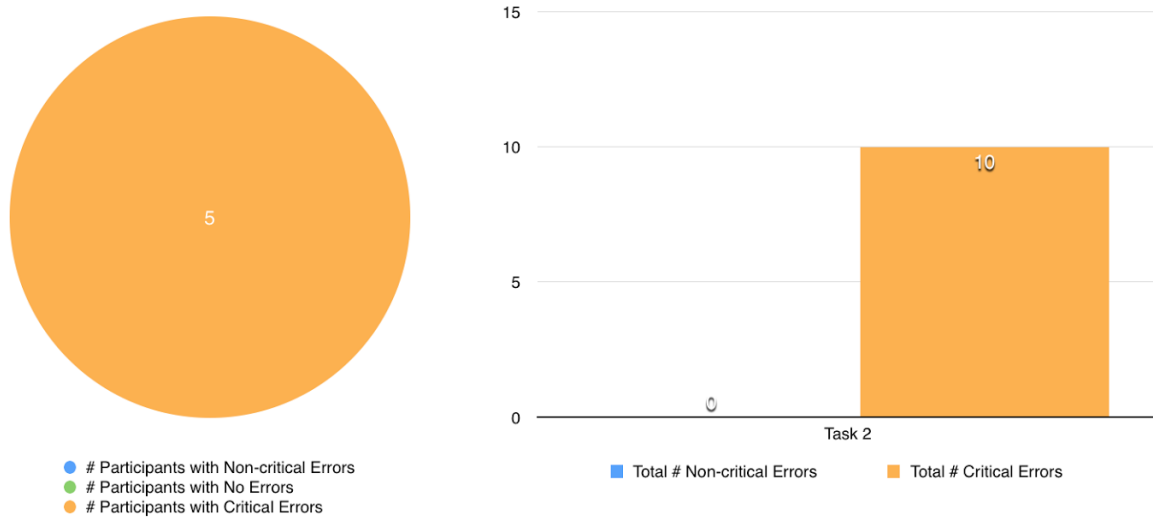
- "In F-Droid there is more categorizing of apps"
- There doesn't seem to be any logic behind the way apps are displayed in the gallery view.

Suggested Improvement:

- List apps in alphabetical order

Task 2: Add the Twitter app.

- Number of Participants with Critical Errors: 5



Observations:

Apps Gallery View

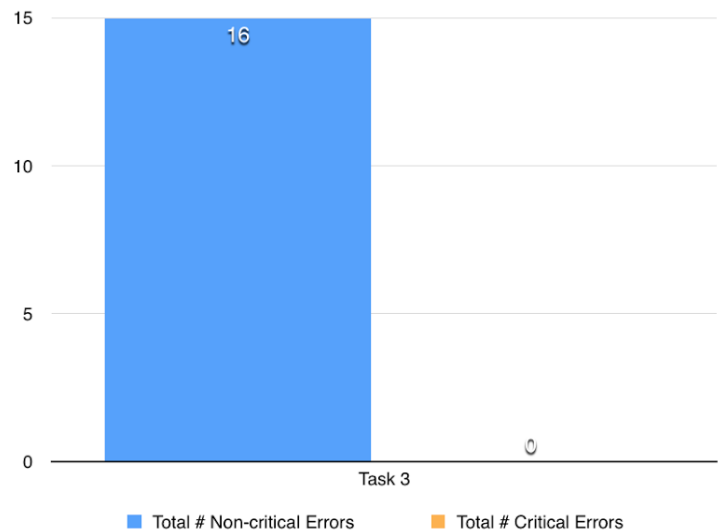
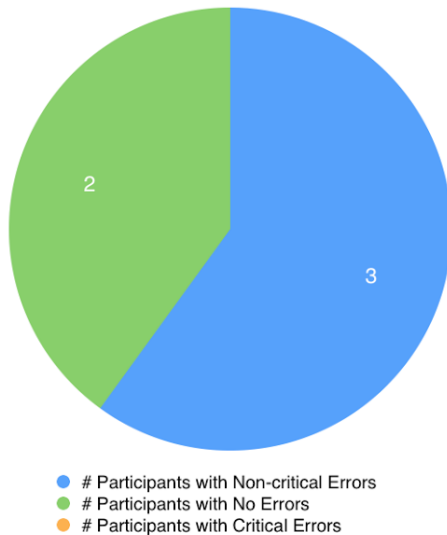
- Twitter app not supported in build, thus all participants were unable to complete the task
- All participants tried using the search bar
- Many chose to add the 'SlimSocial for Twitter' app instead

Participant Feedback:

- "This isn't the right Twitter"
- "Where is the blue bird?"

Task 3: Add the Courier app from the Guardian Project's repo.

- Number of Participants with Critical Errors: 0



Observations:

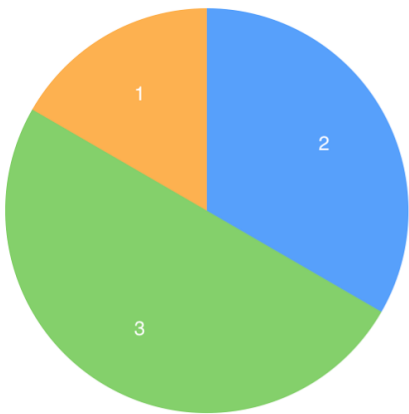
- Most participants used the 'source' filter to find the Guardian Project's repo
- Used filter to search within the Guardian Project's repo while 'Twitter' was still in the search bar field.
- Two participants tapped the 'info' and 'share' button before filtering their search within the gallery. Not sure if these were exploratory taps or they thought this might be the correct action

Bugs:

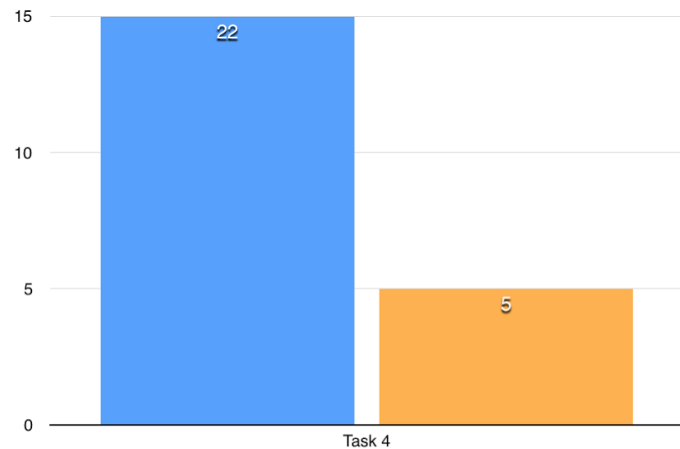
- Correct spelling of Courier with no filters applied did not register or 'find' app until the third try

Task 4: Add a description to the Courier app.

- Number of Participants with Critical Errors: 1



● # Participants with Non-critical Errors
 ● # Participants with No Errors
 ● # Participants with Critical Errors



■ Total # Non-critical Errors ■ Total # Critical Errors

Observations:

- One participant added the description to the summary field
- One participant did not even try to complete the task (incomplete)
- One person tried to edit the app in the gallery view. It is unclear that you can not edit an app within the gallery view. The participant had added the app to their repo and not left the gallery page. Opening and closing the app a few times before going into their repo content view, opening the app and finding the edit function. Eventually they were successful

Participant Feedback:

- “Where do I add the description?”
- “The fear is someone could literally just take someone’s app and just change everything. That’s my fear in giving someone full control. It’s open source. But we need to provide a framework that respects the developers.”

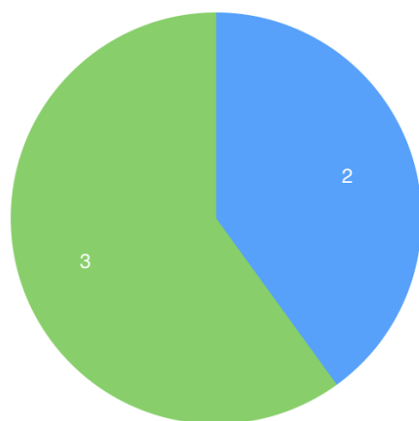
Suggested Improvement:

- It should be easy. Click the app. Go straight to the window where you can edit. There are multiple steps.
- If you open an app from the gallery view (that you have already added), you should be able to edit it.
- Want to edit items on the page separately, rather than having one ‘edit’ button that takes you into the editing mode.
- Can you set an app as primary and secondary:

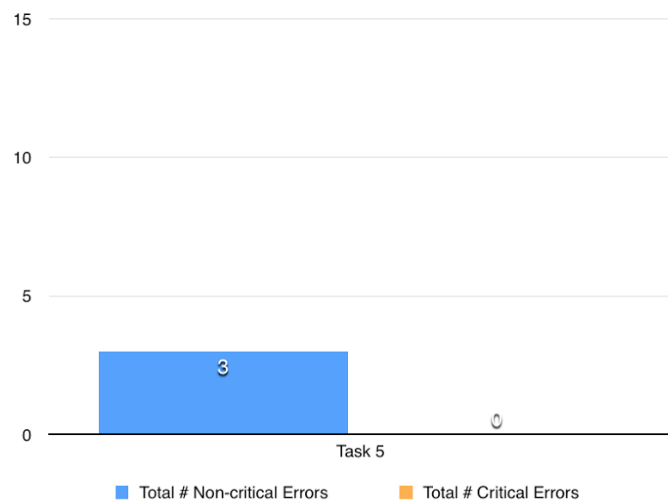
- Primary- I have created myself. Secondary- I get from other people's repos. For secondary apps, people would have the ability to add a second description or note, but the core information (name, description, etc.) would be maintained by the developer who created it. For example, adding a second note further explaining what we will use the app for, makes sense to me. But, I have no reason to change the other information.

Task 5: Remove an app from your repo.

- Number of Participants with Critical Errors: 0



● # Participants with Non-critical Errors
 ● # Participants with No Errors
 ● # Participants with Critical Errors

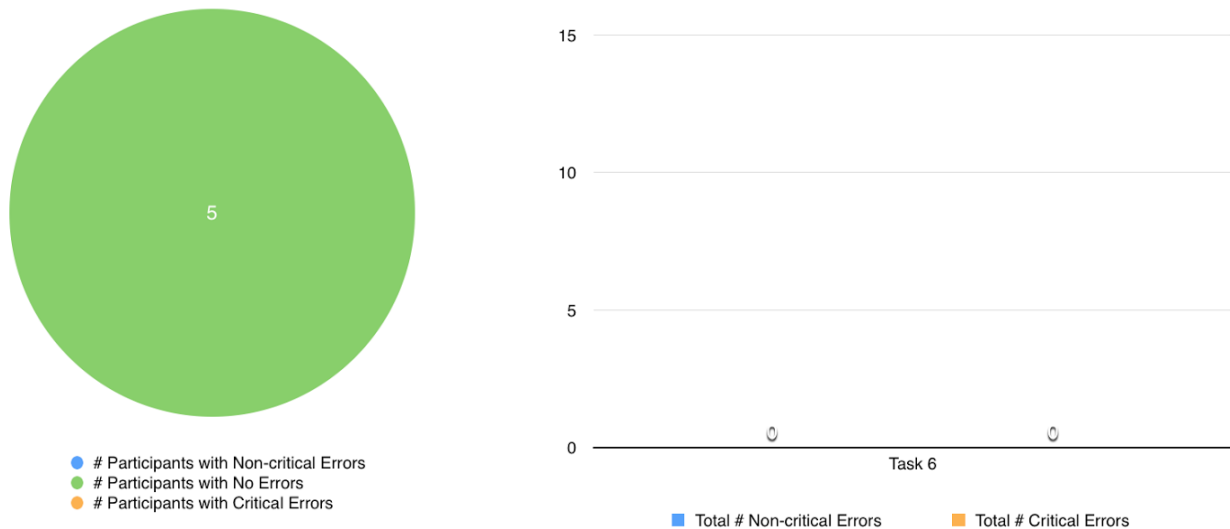


Observations

- This task was easily completed
- Many participants had seen the 'remove' button in last task

Task 6: Create a second repo. You don't need to add any apps.

- Number of Participants with Critical Errors: 0



Observations:

- Participants went directly to '+'
- You have to go to your 'Home' view to see how many repos you have
- Wasn't clear and a bit confusing to determine if you'd actually completed the task of creating a second repo

Participant Feedback:

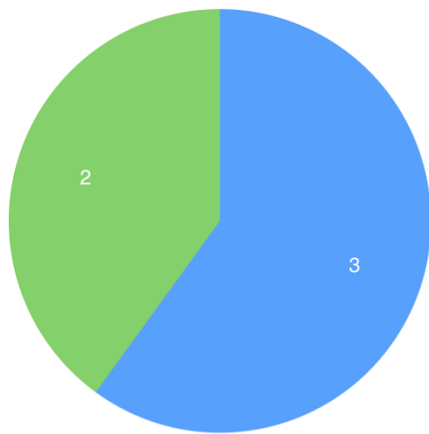
- "Did I really create another repo?"

Suggested Improvement:

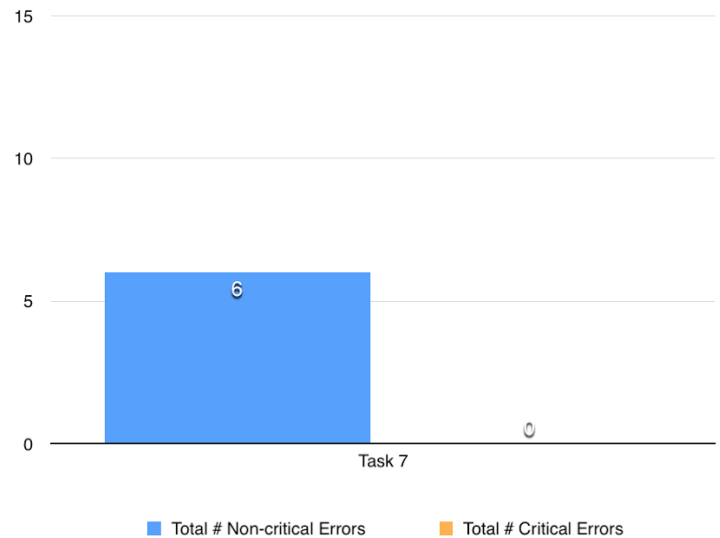
- Give clear feedback in the UI that you've created a second repo
- Would like text when you hover over '+' and 'Home' button

Task 7: Reopen your first repo.

- Number of Participants with Critical Errors: 0



- # Participants with Non-critical Errors
- # Participants with No Errors
- # Participants with Critical Errors



Observations:

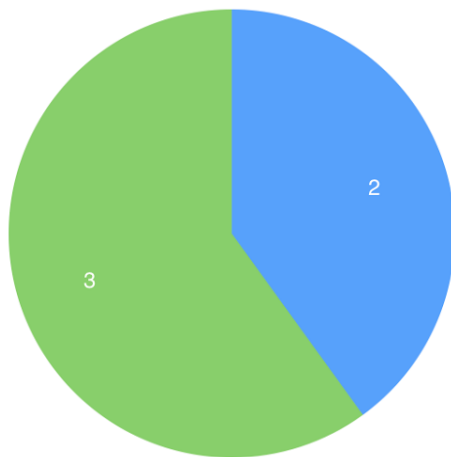
- Two participants tapped the 'info' button first and then the 'home' button
- Most participants tapped the 'home' button immediately and quickly

Participant Feedback:

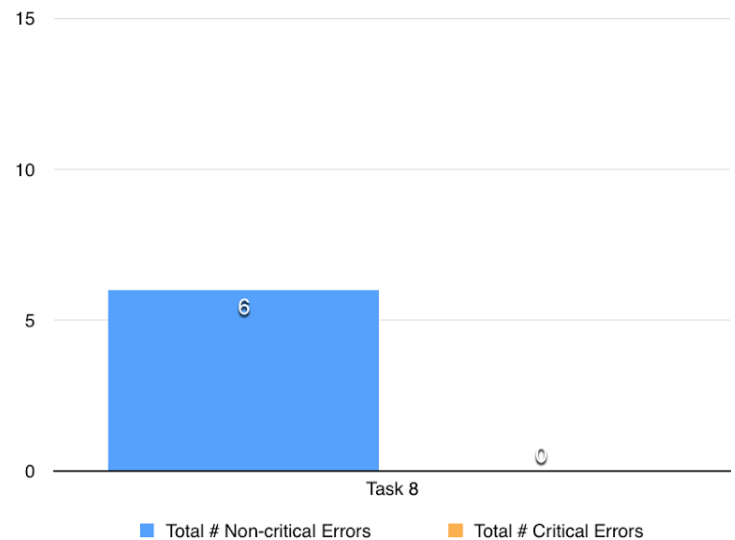
- "View my second repo is a bit confusing. I can't see how many I have."
- "Did I really create another repo? There's not clear feedback in the UI that you've created a second repo."

Task 8: Share your first repo with your journalists.

- Number of Participants with Critical Errors: 0



● # Participants with Non-critical Errors
 ● # Participants with No Errors
 ● # Participants with Critical Errors



Observations:

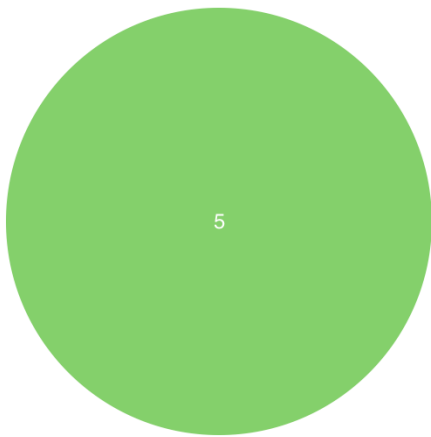
- All participants eventually copy and pasted the link in a new tab (without prompting)
- One participant tried to share via the QR code first, but got a 404 error message, so copied the link and pasted it in a new tab

Bugs:

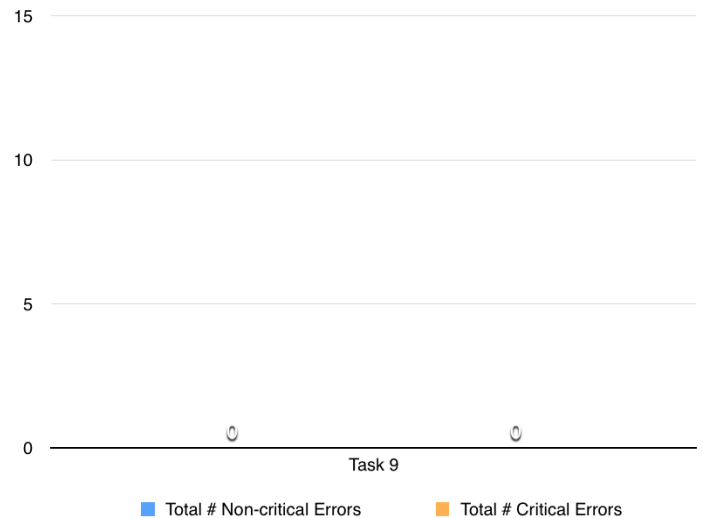
- When in the share view, one participant received a 'URL not found' error message when trying to 'Scan QR code'

Task 9: Open the page you just shared.

- Number of Participants with Critical Errors: 0



- # Participants with Non-critical Errors
- # Participants with No Errors
- # Participants with Critical Errors



Observations:

- Everyone highlighted link, copied and pasted it in a new tab to view
- Participants were confused if they actually completed the task

Participant Feedback:

- *"I click share and copy link, but what does this actually mean"*

Suggested Improvement:

- Tutorials would be helpful, especially an infographic explaining how the contents move from one app to another and between people

Task 10: Talk through how your journalists would add this repo to their android phone.

Main Takeaways:

1. The participants already familiar with F-Droid felt comfortable with Repomaker's workflow and understood you need to download F-Droid first
2. All non F-Droid trainers had a difficult time

Comments about getting F-Droid

“Most people who come to our trainings trust that the trainers are making their devices more secure. They would have no problem enabling unknown sources if told to do so by a trainer.” (Participant 2)

- Some reservations were raised as to why F-Droid is not available through the Google Play store.
- All participants agreed that individuals in training sessions trust their trainers. They believe attending trainings will teach them how to make their devices more secure. If told by a trainer to download an app, enable unknown sources, or use specific tools, they would do so.
- One participant noted that participants in a training want to ensure the trainers' devices do not have viruses, therefore, Repomaker may be a challenge if sharing phone to phone.
- People don't know how to enable unknown sources. Rely on default settings, but trust trainers to make their device secure.

Is it Useful?

All participants said Repomaker would be useful in Zimbabwe Trainings.

“During trainings, people waste a lot of time trying to find the right apps to download or they install the wrong ones. To make it worse the internet may act up causing more problems. Repomaker would make trainings and installs of correct apps easier.”

“Most of our trainings we have terrible internet connections.”

“It will be my backup for all my training apps.”

“Need it for my classes during training it will save me on time.”

“Saves so much time! A lot of time is wasted during training when participants are searching and failing to find apps.”

WHEN ASKED, ‘IS REPOMAKER IS USEFUL’, PARTICIPANTS ANSWERED YES!

- From participants experiences’ with limited or poor internet connection, they felt Repomaker would be very useful for sharing and downloading apps before and during trainings.
- The challenge of internet very real in Zimbabwe. Repomaker is very practical and useful. Being able to store apps all in one location and share them via nearby tool during trainings would be very helpful.
- Repomaker and F-Droid would be really helpful for trainings, specifically the hosts. It would cut budget costs because they wouldn’t need to buy data credit for all the attendees.
- Access to the internet is very expensive and access is difficult, so having a free option (tool) like Repomaker, might be a very helpful application to send people without them worrying about spending money on data packages.
- The personal experience of being in a training and trying to download apps during, but the internet was limited or poor is very real, so having Repomaker available would be very useful.