

Milestone III: Medium-Fidelity Prototype Implementation and Demonstration

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1 EVALUATION PLAN

1.1 Evaluation Protocol Overview

We will follow a multi-pronged approach for user evaluation; combining multiple questionnaires to gather quantitative data regarding user experience with a follow-up interview for the collection of qualitative information.

The questionnaires given to users will gather data on their ability to complete tasks, their satisfaction levels, their aesthetic design preferences, and their demographic information. These will follow an “A-B” pattern, wherein a user will be given one-of-two interfaces, complete several tasks with it, and answer a questionnaire on their experience using that interface. The user will then be given a second, slightly different interface, complete the same task, and answer an additional questionnaire. These will be used to find a favoured implementation. Both questionnaires will leave a blank section for users to input qualitative insights.

The follow-up interview will contain a series of open and close-ended questions, providing the user with an opportunity to provide dynamic feedback and verbalize their experiences. These interviews will be recorded and transcribed to provide additional feedback. The interview questions will be weighted towards open-ended, subjective inquiries to gather user insights.

1.2 Goals

- To discover which of two music-project creation interface options our tester prefer.
- To quantitatively measure our systems usability, design, and user-satisfaction level. This will help us focus our project on user preferences as opposed to forcing them to adapt to our design, as well as provide proof-of-concept (or disproof-of-concept) for our project.
- To understand what improvements may be made to our system through qualitative, user-specific feedback.

1.3 Participant Pool

This evaluation will be undertaken by 6-8 musicians ranging from ages 25 to 37. These individuals have been selected to represent a variety of musical genres, levels of performance experience, and identities.

1.4 Rationale

The combination of observational methods and questionnaires used in this evaluation is to capture a wide range of responses individual users may have to our prototype, quantifiable or otherwise. The combination of these methods is somewhat time-consuming for broad testing but works well within our constrained group of 6-8 users.

We are making a concentrated effort to gather qualitative data during the follow-up interview portion of the evaluation, and thus will ask more open-ended questions to users during this time. The choice to focus on user-subjectivity at this point comes at the expense of analytics-friendly data that can be gathered from closed-questions. This lack of objective information is offset by the questionnaire, which will provide ample qualitative information for objective system assessment.

2 PROTOTYPE RATIONALE

2.1 Goals of the Prototype

- Determine if the user has the flexibility required to deposit a creative element into a project without being bogged down by navigation.
- Determine if versioning and consolidation of creative elements is useful to songwriters.
- Determine if users prefer one UI representation of a version control tree over another.

2.2 Prototype Specifications

We decided to use Figma for our prototype because everyone is comfortable with its features. The grouping, component and flow functionality is especially useful for implementing a feasible look and feel for our application. Additionally, it allows for collaboration between group members, which makes working on the project flexible, as well as making it easier to facilitate and track progress for each group member. Our prototype on Figma can be accessed at: <https://www.figma.com/file/7FxOkLBVkf0C1bJ53imxw9/Whole-Node?node-id=109%3A1592&t=RjtVVYgEaa73Hlr3-1>

Generally, we opted for a vertical approach with our prototype since the development of our app has been task-driven from the start. Our main aim with our prototype is to explore if the functionality that we have outlined is useful in practice (e.g., preparing offline mode). However, we also consider parts of our prototype to be more horizontal in nature. We implemented relatively high interactivity for vertical portions of the prototype (e.g., creating project elements) and low interactivity for more general aspects of our app such as the red button on our landing page because it was not involved in our core tasks. During the user test evaluation, we will highlight that the big red button is a quick way to add a creative element to the "Riff Bank" or a project, but that this functionality has not been fully implemented.

Version control and the structure of tree data structures are well-known to practitioners of computer science and HCI, however may not be as intuitive to understand or navigate for the layperson. Familiarity with tree structures in everyday life is typically through such things as the natural world, family trees, or upgrade/skill trees in video games. With this in mind, we wanted to include the possibility of a tree idiom that progresses both in a top-down and bottom-up fashion. We implemented this for the vertical prototype, which allows for adding a node to a project with pre-existing nodes. During user evaluation, A/B testing will be conducted with one group using the bottom-up tree interface and one using the bottom-down interface to assess which has superior performance.

The depth of the functionality correlates with the tasks that were outlined in the previous milestone. For example, one of our tasks was to add a new node to a project tree. Therefore, there should be complete functionality in the buttons that would add a new node to the tree, and views that would add a new file to the new node.

An example of the "Wizard of Oz" approach that we used in our prototype was in the "prepare offline" mode task. In reality, the user would be looking at a single page at all times. We used two pages to simulate the interaction of opening an overlay. Similarly, in the tree, each new node is on a new page, but the user continues to think that it is a single page.

Our rationale for the appearance is that, while our prototype is not fully developed and polished, its appearance should be consistent in terms of colour scheme, font choices, alignment, and layout to avoid causing confusion for our test users. At this point in development, we did not want the appearance of our prototype to distract users during the user evaluation. We opted to focus on fine tuning the flow through our app first rather than perfecting its aesthetic. The colour palette for node extensions is designed to be accessible to people with colour vision deficiencies by using the viridis colour scale. We also chose to use the font "Raleway" throughout our app because its typography is similar to what is used by Spotify. We wanted to emphasise the musical connection between the well-known Spotify and our app.