Data Collection

AshTaiko

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Software Development

Units 3 & 4

Mr. Toet

Table of Contents

1. Interviews

Interviews will be conducted with the proposed users of the software solution. Interviews are especially valuable because it provides direct insight from the proposed users about their needs and preferences, as well as qualms and experiences with existing software solutions. As the primary user (Stephanie Li) is already quite familiar with rhythm games and is generally a higher-level player, her insights may be uniquely useful to ensure gameplay mechanics as well as things such as responsiveness and input lag are well-optimised and taken care of. This will ensure that the overall experience meets the expectations of more competitive and skilled players generally.

Because interviews enable open-ended discussions, potentially unexpected or otherwise interesting answers and responses can arise that may not be apparent in other research methods. This is why interviews are very good to do before any other data collection method, as it can immediately establish certain issues and topics that all following surveys/interviews can build on and explore.

1.1 Questions

While interviews are generally open-ended, it is good nonetheless to have certain points of discussion to guide the conversation. All of the below questions will be asked, however more topics may arise.

1. What do you enjoy most about playing rhythm games like *Taiko no Tatsujin*?
2. Which Taiko games do you play currently?
3. Are there any aspects of these games that make the experience of using them unenjoyable?
4. What is your preferred input device (keyboard, controller, drum)?
5. What are the main performance issues (if any) that you experience playing existing rhythm games?
6. How is the stability of existing software solutions?
7. What features are essential to a rhythm/Taiko game?
8. Is UI customisability important? Visual effects? Keybindings?

1.2 Logistics

The interviews will be conducted over a video/voice call on the communications platform Discord. This ensures that interview times are flexible and can be easily recorded. These interviews will be one-on-one.

The primary disadvantage with doing interviews online is the difficulty in extracting information from non-verbal signals, especially with regards to body language and facial expression. This can be mitigated using video calls, however issues with connectivity may cause complications during the interview process.

The questions are not at all of a sensitive/personal nature, which will make the presence of the interviewer a non-issue during the interview process.

Interviews will be conducted at a time convenient to the interviewee, as Discord allows for that level of flexibility. It is possible, but unlikely that the time at which the interviews are conducted will affect the quality of the data collected substantially. Follow-up interviews may be conducted in the event of interruptions or general incompleteness.

It is important that interviewees know that the interviews will be recorded. Recording will be done on OBS on the interviewer's device. Interviews will be archived and referred to throughout the data collection process.

1.3 Analysis and Use

Interviews will be summarised based on key themes, such as gameplay platform preferences, motivations to play the game, etc. These will directly inform both functional and non-functional requirements, scope, and constraints. For example, if a user requests chart customisation and this is backed up by additional interview data or data from other sources, this may expand the scope to include a map editor or parser for third-party formats. If users primarily use older devices, technical constraints pertaining to hardware will be added to the project.

2. Surveys

Surveys are very quick to distribute, however the depth of the data may be limited. The data from the surveys will be used to determine the functional requirements and scope for the solution, as it asks directly about the most valued features of existing software solutions. Information pertaining to the common technical environment and platform of users can also be used to determine constraints, such as, if the majority of users use a Windows machine or a school-issued device, the installation of the software should be set up in such a way that allows for portability without an installer.

Surveys will complement interviews by collecting data from a larger audience, focusing on quantitative analysis. They will confirm and refine insights from interviews and help define the functional requirements, user characteristics, and technical environments that the software must accommodate.

For example, if survey data shows 80% of users prefer controller input and play on Windows PCs, this defines clear user expectations and a platform constraint.

Surveys also help prioritise which features are most requested and feasible within the time and technical constraints of the proposed software solution.

2.1 Consent Form and Terms

Below is the consent form that will be disseminated with the digital surveys. The survey will be inaccessible if not all terms and conditions are agreed to.

This survey aims to assess and collect data on your experiences and general satisfaction toward Taiko-style rhythm games. These include products such as *Taiko no Tatsujin, osu!taiko, TJAPlayer3, OpenTaiko* and *Taiko Web.* Your participation is entirely voluntary.

The survey constitutes a significant portion of the SAT for Software Development Units 3 and 4, and will not take longer than fifteen minutes to complete.

Upon agreeing to participate, you will be asked to complete a questionnaire about your experiences with Taiko-style rhythm games. There will be some open ended questions.

Your data will be kept confidential and your name and personal details will be removed from the final dataset. Names and student IDs are only collected for authentication purposes. **The data will be seen purely by myself and my teacher, Mr. Toet.**

If you have any questions or concerns, please contact me via Discord or Outlook.

By completing this survey, you:

1. Have read the details of the project above.
2. Understand that your participation is voluntary.
3. Understand that your data will be kept confidential.
4. Consent to the use of your data in the software development project.

2.2 Questions

User Platform and Background

1. Which of these Taiko games do you currently play (or have played)? (Multiple choice, multiple can be selected))
    - Taiko no Tatsujin (arcade or console)
    - TJAPlayer3 / OpenTaiko
    - osu!taiko
    - Taiko Web
    - Other
2. List any other rhythm games you play regularly. (Game modes, such as osu!std and osu!mania are counted separately.) (Short answer)

Gameplay Information

3. What difficulty do you typically play? (For osu!taiko players, input roughly your preferred difficulty.) (Multiple choice)
    - Kantan (Easy)
    - Futsuu (Medium)
    - Muzukashii (Hard)
    - Oni (Extreme)
    - Inner Oni (Extreme+)
4. Which device(s) do you typically play Taiko on? (Multiple choice,multiple can be selected)

- Desktop PC
- Laptop
- Tablet / Phone
- Console
- Arcade Cabinet
- Other

5. How would you describe the performance of your device when playing Taiko? (Scale 1-5, Unplayable to Excellent)
6. Which input method do you use most often for Taiko? (Multiple choice, multiple can be selected)
    - Keyboard
    - Gamepad/Controller
    - TaTaCon (Drum Controller)
    - Arcade-Style Drum (Cabinet, TaikoForce, Taikoller, etc.)
    - Mobile/Touchscreen
    - Other

Game Experience and Preferences

7. What are the most important features to you in a rhythm game? Select up to 3. (Multiple choice, up to three (3) can be selected)
    - Accurate timing/judgement
    - Custom maps/charts
    - Customisation (skins, visuals, sound)
    - Gamepad/controller support
    - Leaderboards
    - Input remapping
8. What issues have you encountered with rhythm games? Select all that apply. (Multiple choice, multiple can be selected)
    - Input lag
    - Audio lag
    - File import difficulties
    - Stability issues
    - Limited file format support (.osz, .tja, etc.)
    - Lack of customisation
9. How important is the overall stability of the game to you? (Minimal crashes, smooth performance, minimal audio lag, etc.) (Scale from 1 to 5, Not Important to Very Important)

User Interface

10. How satisfied are you with your game's current map/chart importing process? (If applicable) (Scale from 1 to 5, Very Unsatisfied to Very Satisfied)
11. Which of these do you find most helpful (or necessary) during gameplay?
    - Question type
    - Score
    - Combo counter
    - Progress bars
    - Accuracy
    - Health indicator

3. Observations

Observations could be a valuable data collection method when developing the proposed software solution. Observing how users typically interact with existing rhythm games/software solutions, either with or without their knowledge, can allow for greater insight into gameplay patterns, user preferences, and potential usability issues.

Certain things such as menus or interfaces that users interact with frequently could inform future development decisions by placing more emphasis on the streamlining of those menus and their functionality. This may also allow for quantitative data about how long a user spends on each screen, therefore finding which screens are most important to incorporate into a potential future software solution.

Additional observations regarding gameplay features can also be used to omit or add certain functionalities to the scope of the project, as well as provide valuable insights into which functionalities of the software are most important. This will be extremely useful for writing functional requirements in the future based on the data.

Issues that may not be reported in interviews or surveys can also be observed.

The machine of the user being observed should also be noted down, as it will provide valuable insight into the technical environment in which the current software solutions are being used.

3.1 Method

Method can also be found in the Observation document.

The user (Stephanie Li) will be observed on a Discord voice call, sharing their screen as they play osu! over a one (1) hour period, during which notes will be taken and the time spent on each screen of the application/game will be recorded through a series of digital stopwatches. The user knows that they are being observed and has given their explicit consent to do as such. This is to maintain the ethical integrity of the data collection process.

4. Reports

Reports refer to the collection of documents on existing solutions.

Reports are a very valuable data collection method, as it provides insights into current industry standards, technical limitations, and user experiences. The analysis of these sources allow for a greater understanding of how similar rhythm game solutions have been designed, implemented, and received by their developers and communities.

Technical documentation from existing rhythm game simulators, such as *TJAPlayer* and *OpenTaiko*, can inform the development process by outlining their architectures, file formats, and programming frameworks. This is especially useful for the future handling of TJA files, which is a unique file format with very little documentation.

Reports help to identify best practices while also revealing common inefficiencies, such as file format incompatibility and input lag, which the proposed solution aims to resolve.

Open-source projects like *Taiko Web* may provide direct access to source code, which will be extremely useful in helping the developer understand how these games handle various aspects of gameplay, such as hit detection, file management, audio synchronization, and user input.

Community forums and discussion threads, particularly from platforms like Reddit, GitHub, and osu! forums, are also very valuable sources of user feedback. They highlight issues experienced by players, such as instability, latency, and file import difficulties, allowing for direct insight into what features and optimizations would be most beneficial and desirable for users.

Bug reports and changelogs from existing software solutions may also anticipate potential problems that may arise during the development of the proposed software solution and cut time troubleshooting.

Potential sources:

osu!

https://github.com/ppy/osu/issues

https://osu.ppy.sh/wiki/en/Performance_troubleshooting

https://osu.ppy.sh/home/changelog

OpenTaiko

https://github.com/0auBSQ/OpenTaiko/issues

TJAPlayer3

https://github.com/twopointzero/TJAPlayer3

https://github.com/twopointzero/TJAPlayer3/issues

4.1 Analysis and Use of Data

Source code analysis (e.g., from OpenTaiko and osu!) will inform many technical decisions and estimated feasibility for the project. Bug trackers and changelogs may also help to anticipate potential technical constraints and issues, such as specific causes of input lag or file compatibility problems.
Community feedback threads will also identify common user expectations and frustrations and may further shape functional and non-functional requirements.