Project Report for Course:

DV1557- Usability and Interaction Design
ANVÄNDBARHET OCH INTERAKTIONSDESIGN

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Genshin Impact

Evaluation Project

Muhammad Ahmad Imran
Syed Saif Ahmad

Faculty of Computing
Blekinge Institute of Technology
Sweden

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Abstract

The document seeks to evaluate the popular anime styled, open world RPG Genshin Impact. The game employs what is known as Gacha Game mechanics, to get characters and weapons among other resources. The evaluation is to be done on major tasks in game and analyze how good and bad they are and mark places that need improvement, in line with the Human Computer Interaction principles.

Introduction

This report will analyze the game Genshin Impact. This is an open world RPG with a Gacha game style mechanics in it. The game has functionality like player actions, making wishes, using the shop, upgrading/ switching weapons, switching players in teams, play in another person's world, buy/ collect resources. There are multiple ways to access certain menu options that will be scrutinized.

The game makers are based in China but have multiple global servers where people can play with each other while being on the same server. The game is available on PC, android and IOS but the report will talk about the PC version.

Genshin Impact is interesting to analyze because it has rich and extensive interactive features with lots of information and stimuli happening at the same time. A lot of the game features, especially during combat, require a fast reaction from the end user and thus, makes for an interesting system to analyze.

Background

Human computer interaction deals with the study of interactive systems in terms of their usability, user centeredness and experience. While being based in the computer science domain, it has integrated areas such as psychology, statistics, and social sciences within to help design better and more usable systems.

The end goal here is to develop or improve intractability between user and the system. Different kinds of interactive systems will have different methods, purposes they use to work but in general, they have encapsulated similar design principles in context of the human user. For example, a car and a computer are both interactive systems that should encapsulate similar design principles, but the construction methodology will remain different. The common point is to design the interface allowing human user to operate the interactive system in a decent amount of time.

In modern age, improving interaction between systems has been a factor of popularity of systems. Websites, games, vehicles, etc. are constantly being redesigned for simplicity and max utility. This is quite noticeable in websites as they are frequently revamped and quite carefully done for Mass multiplayer online games such as Call of Duty, Fortnite, Counter strike and in our example, Genshin Impact. Tools like Hotjar, click rates, click areas, and

surveys help the companies improve their systems from an interactive and playable standpoint.

To improve these systems, an evaluation must be performed to analyze data sources. A good evaluation, translate to good user interface and experience. It is important to note that standardized design principles depend on the user experience one seeks. Once it has been established, the follow up work takes place, usually without issues.

Image taken from Tweak library showing changes of fakebook's interface.

Goals of the Project

The goal of this project is to evaluate the game Genshin Impact from an interactive and usability standpoint. We will adopt the expert heuristic method [1]. Based on the principle taught in the lectures and given examples as aid [2][3].

The group members individually assessed the game, noting similarities and eliminating aspects that were more related to the gameplay than interactivity. Principles of Usability Design, discussed later in the report, were used as a baseline for this purpose but Nielsen's 10-point usability criteria was used as it encapsulated the aspects of the former.

Evaluation Methods

For the sake of this project, the aim is to evaluate in terms of usability and intractability. We have a baseline in these principles, for our project, to support usability. These were formed when it was attempted to make a standard usability criterion. They broadly encompass the following aspects and factors within

1. **Learnability**
    - **Predictability:** Support the user to be able to determine effect of future action based on past interaction.
    - **Synthesizability:** Support the user to be able to see the effect of action made in recent or far past at this instant.
    - **Familiarity:** User knowledge and real-world experience that can be applied once interacting with a new system**.**
    - **Generalizable:** User can apply knowledge of one part of the system in another with similar situation or environment.
    - **Consistency:** Likeness in input/output behavior arising from similar situation and or objectives

2. **Flexibility**
    - **Dialog Initiative:** Freedom from input dialog constraint imposed by system.
    - **Multi-Threading:** Ability to support user interaction on simultaneous tasks.
    - **Task Migratability:** Pass the task control from user to system or shared.
    - **Substitutivity:** Allowing equal values of input/output to be substituted for each other
    - **Customizability:** Interface changes doable by both user and system.

3. **Robustness**
    - **Observability:** Ability to perceive state of system from its perceivable representation.
    - **Recoverability:** Ability of user to take remedial measures once problem identified
    - **Responsiveness:** How the user perceives rate of communication with system.
    - **Task Conformance:** The ability to do what the user wants in a way they understand.

The usability metrics are quite practical in nature. Since we opted for expert analysis, we had the following 4 methodology to opt from.

1. **Cognitive Walkthrough: Walkthrough the code/ task specification in the order specified**
2. **Heuristic Evaluation: Critique the system to find potential problems**
3. **Model Based Evaluation: Compare design specifications with a model framework**

4. **Previous Study in Evaluation: Using previously known studies in the area being evaluated (directly or indirectly) to help support or refute the evaluation.**

Among the presented 4, We opted for The Heuristic Evaluation. Specifically, Nielsen's 10 Heuristics evaluation. They cover the aspects given in the Usability principles, albeit can be used together. Nielsen's 10 set Evaluation Heuristics are discussed in the Evaluation Criteria Section.

Evaluation Criteria

We have chosen the expert evaluation method employing the heuristic evaluation, for the purpose of which, we will be using Nielsen's 10-point Evaluation Heuristics. They are as under.

1. **Visibility of system status:** The design should always keep the user aware about their status through timely and appropriate feedbacks.
2. **Match between system and the real world:** The design should speak the language the end user is most familiar with. The use of words, phrases and concepts should follow real world convention to make it more natural to the user.
3. **User control and freedom:** Users often perform actions by mistake. They need a method to exit the mistaken route without performing arduous steps.
4. **Consistency and standards:** Users should not have to guess whether words, situation mean the same thing. The design for actions similar in nature must follow a standard.
5. **Error Prevention:** Direct error messages without the use of technical jargon that briefly explain the problem and/or any way to avoid it or eliminate the problem source happening in the first place.
6. **Recognition rather than recall:** The user should not have to remember all trivial details of the systems and such the design should be such that the user is able to recall and use the feature in a similar situation as they did before.
7. **Flexibility and efficiency of use:** Use of appropriate shortcuts that an experienced user is familiar with, usable by the novice, can speed up interaction. Ability to tailor the frequent action will enhance efficiency.
8. **Aesthetic and minimalistic design:** Interfaces should contain information that is relevant and frequently needed. Extra information will hinder that and relative visibility.
9. **Help users recognize, diagnose, and recover from errors:** Error messages should be expressed in simple language that points out the problem and gives a solution.
10. **Help and documentation:** Its best if the system does not need additional explanation but when needed, documentation to help understand the task or system should be provided.

Problems Identified

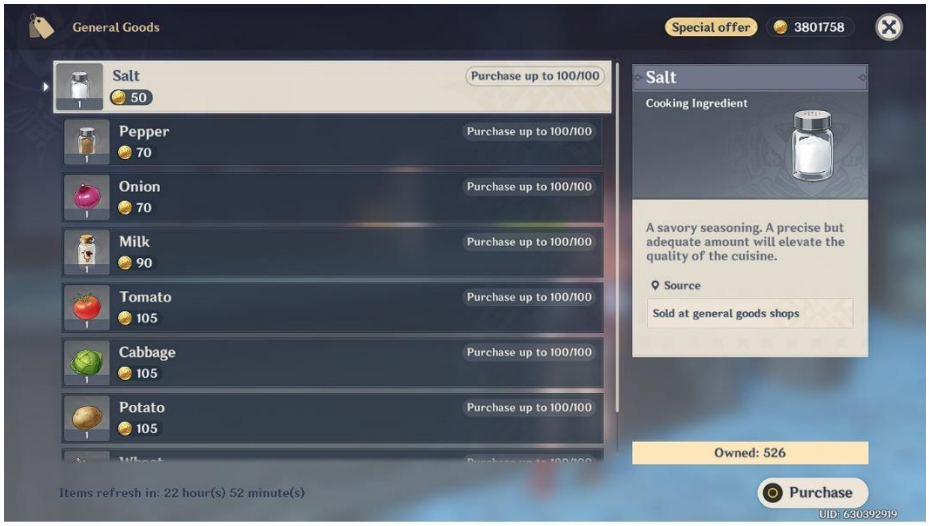
In this section, we will discuss the problem areas we identified per the above criteria. Our format here is to point to the problem and show which criteria it violates and how.

I. The item crafting menu and the general goods shop menu items are principally the same thing, use nearly similar interfaces but the one for the shop is inefficient and affects interactivity. The violation criteria found were

a) Consistency and Standards
b) Aesthetic and Minimalistic design

Allow us to illustrate. Following is the item craft menu

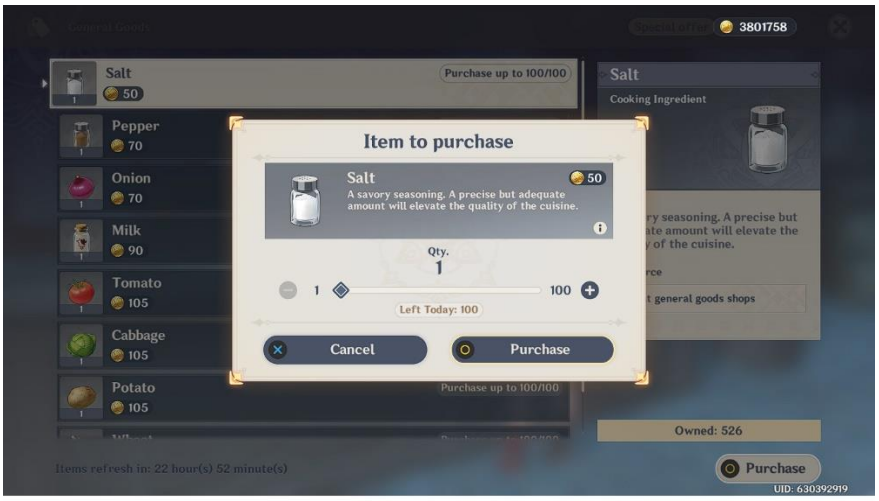
And following is the general goods shop menu



On the point of consistency, the designs of similar operations (albeit different purposes) are differently catered for no good reason. The shop design is not minimalistic, uses wide rows for a single item that reduce items displayed per page, increases time to scroll and operations like purchase to perform. Unlike the thumbnail like item view in case of crafting, users must go through the whole page

as it is not a matter of recognition at this point rather the employed interface that affects the interactivity.

When an item is selected for purchase, the following prompt comes up.

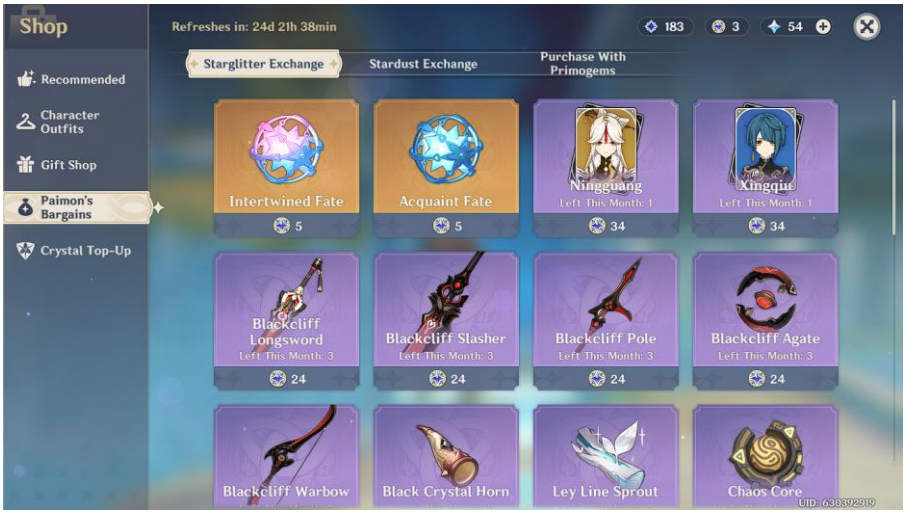


This functionality can be added to a singular page like format, in case of the craft menu. We must go through unnecessary clicks to get the job done which can be achieved in a single page like manner, the craft menu employs. This lack of consistency for no better reason and using nonintuitive non-aesthetic design as a "replacement" affects time for action unnecessarily.

II. The shop inside the wish menu uses huge thumbnails for the items. The violation criteria found was

a) Aesthetic and minimalistic design

Allow us to illustrate



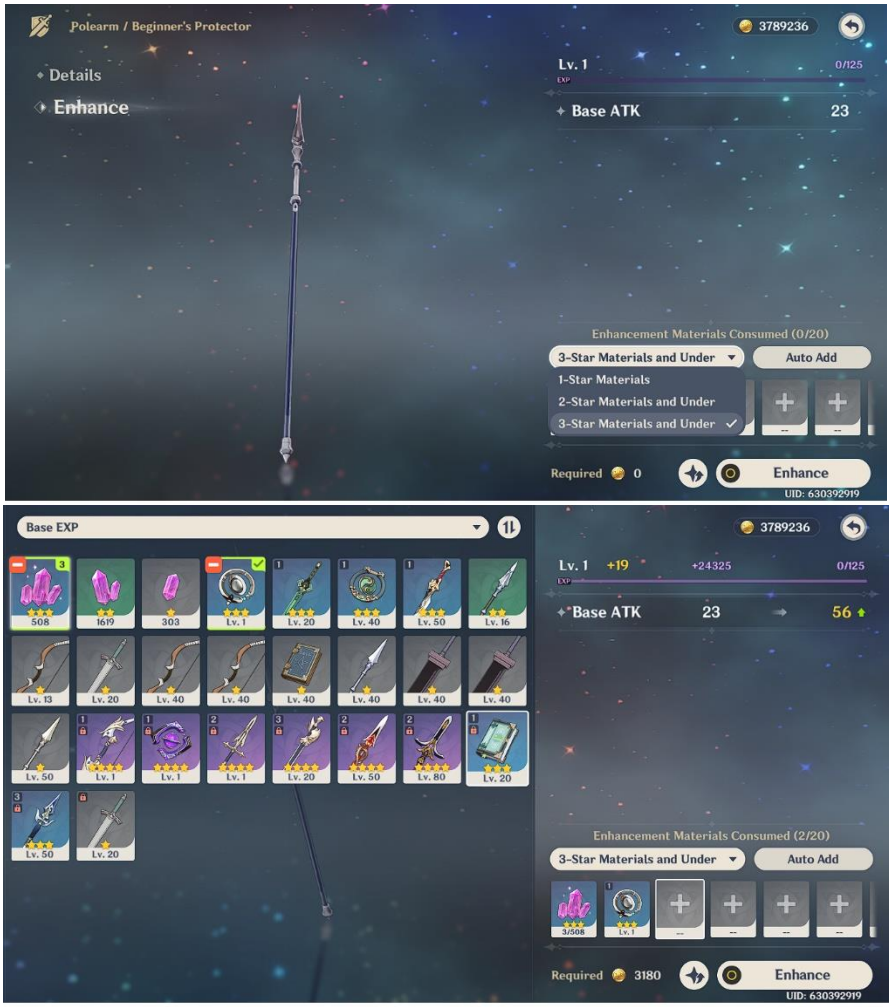
Unlike the item menu inside the playable area, the wish shop is a different place, so the point of consistency is not argued with. Aesthetically speaking, the cards used to display are too large that the screen feels zoomed in on affect the scroll time in an adverse way. Unlike inside the playable area shops, a single scroll, in say the

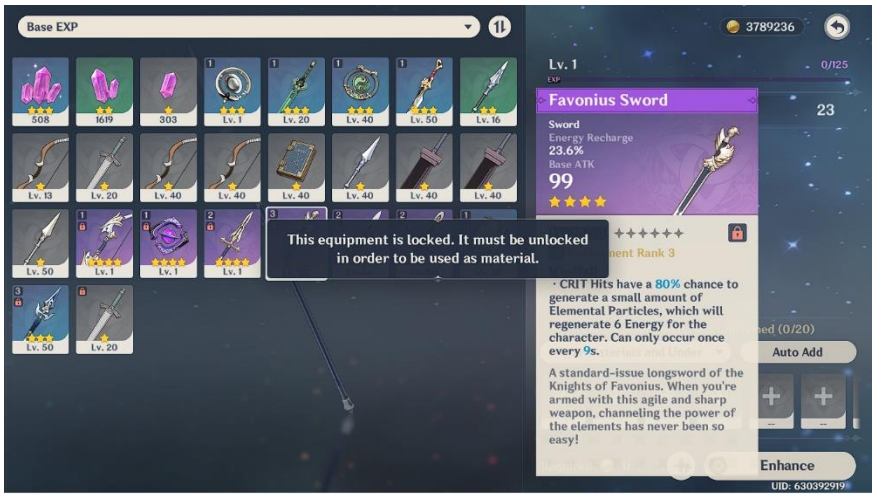
craft area, revealed the newer line faster, we must make 3 such scrolls to get the newer item here.

III. Weapons and artifacts (for our playable characters) can be used to enhance other weapons and artifacts respectively. The game employs a safety mechanism where we do not accidentally use our 4 star and above weapons to enhance another weapon and 5-star artifacts to enhance another artifact by accident when using auto enhance in both places. We can do so manually but the way to handle them is needlessly dissimilar. The violation criteria are:

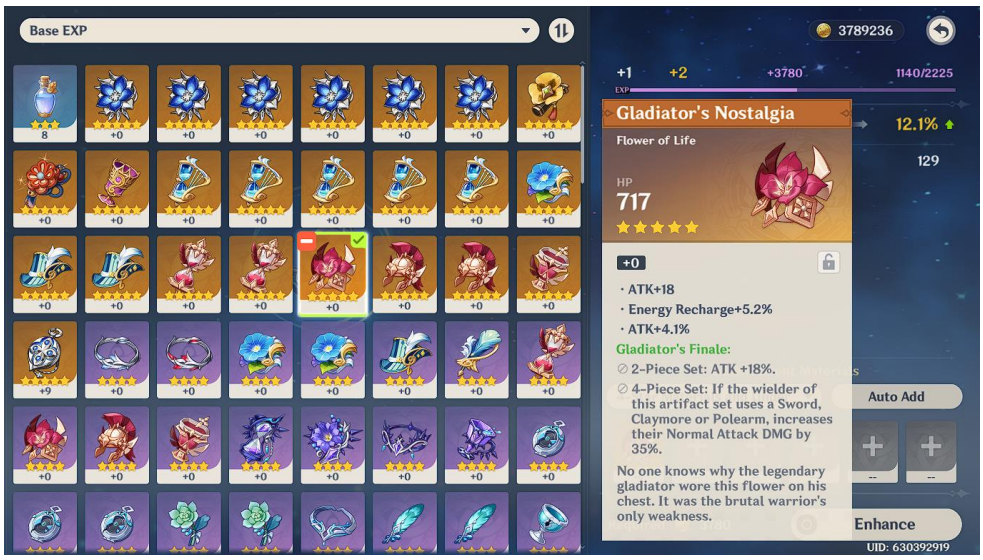
a) Consistency and Standards
b) Error Prevention

Allow us to illustrate. The following is the weapon enhancement screen





And following is the artifact enhancement screen



The weapon enhancement employs an auto-lock safety (notice the small red lock on weapons) feature and any 4-star and above item must be manually removed and used. This functionality albeit available for the artifact system is not applied in the same way. For starters, there is no functionality like the weapons to apply the

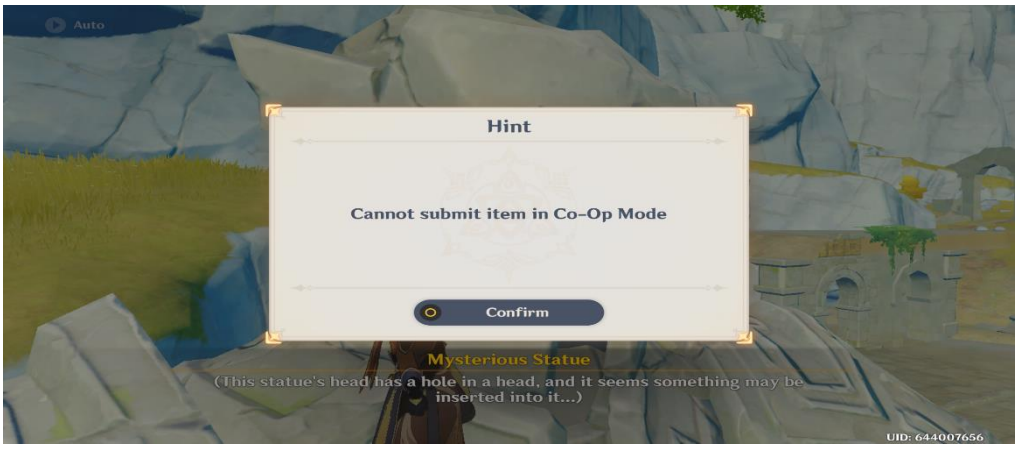
lock across the board in case of the artifacts. While there are safeties in place to not accidentally use a 5-star artifact, it must be done manually which can get painstakingly time consuming considering the count of them. The base safeties do minimize accidental usage but not giving a safety “nice to have” feature is a problem.

IV. The game has a feature called Co-op mode. Players may enter and exit your world to play together with you. There are quests in the game which can be done together, and which can only be done alone. There are some missions which make no sense that are disabled in co-op that can be done. Keeping that as a game design issue, the problem comes with how the system tells us that information. The violation found was

a) Visibility of System Status
b) Consistency and Standards

Allow us to illustrate. When we are in the middle of a quest and a player wants to join our world, we have an in game navigation system on the map which points to our goal. The problem is that inside Co-op mode, that marker is still present (notice the golden dot)

When the objective area is reach and we attempt any action, only then we are given a more noticeable prompt that the action is not doable in co-op mode



Picture Courtesy talhagill313 @ Instagram

The problem is, if we looked at the quest menu (which tells us which quests can/cannot be done) usually tells us for main quests but for quests like (world quests) we get the following.

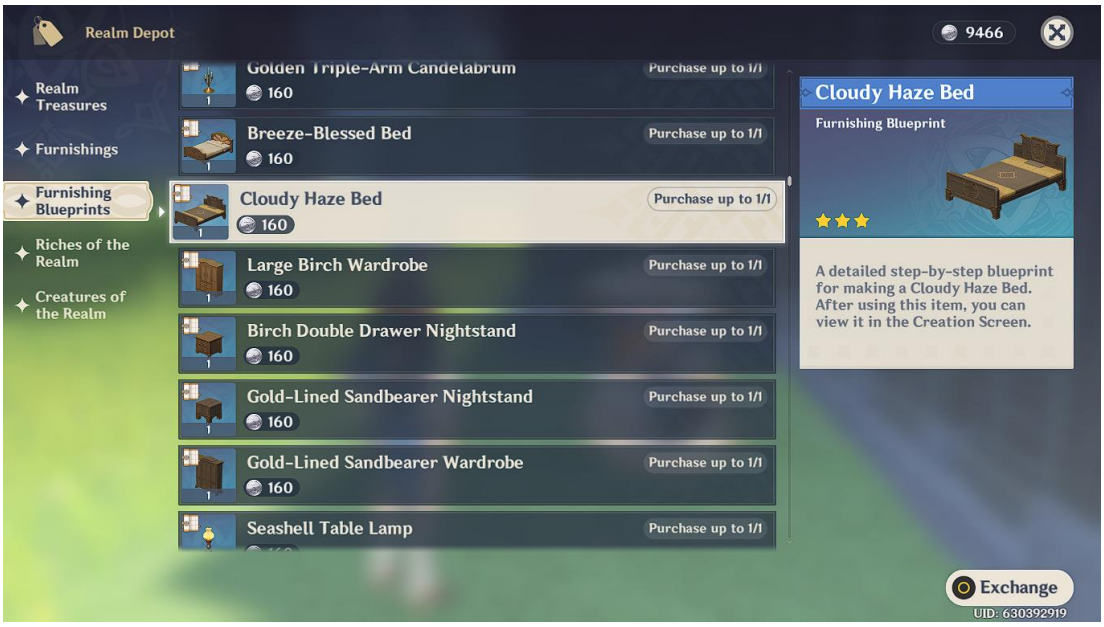
Picture Courtesy talhagill313 @ Instagram

Where it says, “cancel navigation” is usually a red banner that says, “Cannot do action in Co-op”. The problem here is that there is no difference in game functionality other than space sharing once we enter co-op. Additionally, certain types of quests have their markers on but as soon as the objective area is reached, we see that the action is not doable. This lack of consistency is troubling and frustrating to the user who fulfils other objectives only to find the co-op mode being the problem certain interactions are stopped without any previous indicator. While one could open the quest menu to check, the existence of the objective marker on the map makes a lot of people ignore the quest menu and head to the area pointed out. While this can be argued to be game design feature, a lack of a proper prompt prior or as soon as Co-op starts to indicate certain interactive tasks will be disabled is missing.

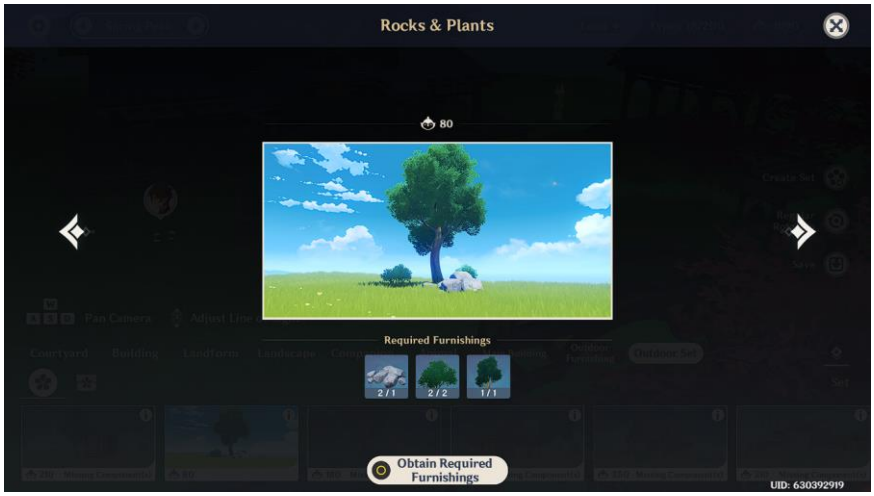
V. The game has a place called Serenitea Pot. It is a system inside the game that allows players to make their own home. It allows us to make and place items in the realm and even buy items for the realm. The problem was the realm shop. The violation found was

a) Aesthetic and minimalistic design
b) Consistency and Standards

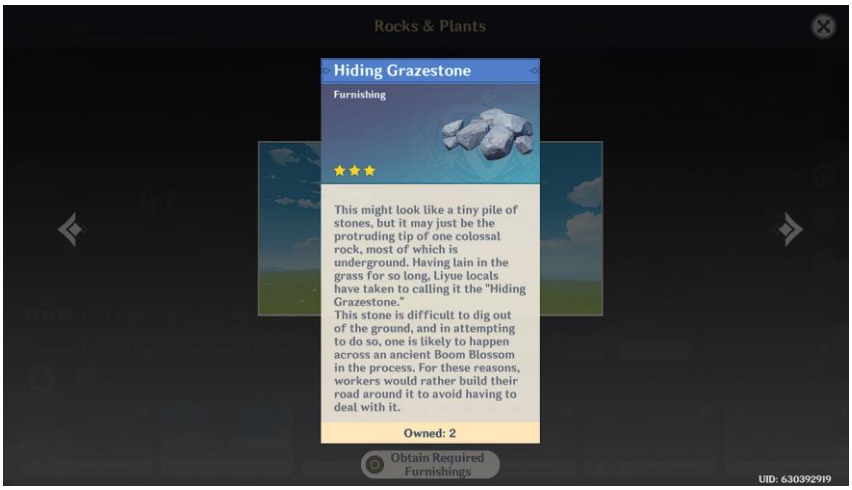
Allow us to illustrate.



The problem is the same as the one discussed in problem 1. We have a huge list in rectangular format that takes ages to scroll. This would be much better and faster if it was in the thumbnail format, thus reducing scroll time and leveraging the human ability to recognize item based on image. The realm system has a system where we can group multiple items to make one big place. For example



We can look at the details if we click the icons



In such an arrangement, it makes more sense to keep the realm shop items in the thumbnail format, rather than long list to reduce task time and maximize functionality.

Suggestions for the New Version

Considering our evaluation, we propose following things to improve that will impact game usability and interactivity in a positive way

1. Inside the playable areas, unify the shop, crafting and forging interfaces. While the goals of them maybe different, the actions to be performed are similar. Using the design implemented for crafting menu is better as it is minimalistic, shows all options in one, intuitive and consumes less time and gets more work done.

2. Reduce the card sizes inside the Wish menu store to decrease scroll time and let user do their intended task and add size-based consistency with other in game shops.

3. Either remove the co-op mode communication constraint or add them uniformly across all quests to achieve consistency and remove confusion.
4. If a quest involves communication with an NPC or interaction with an object and we have entered co-op mode, remove the objective area marker so the user does not go there or must go to quest menu to know why he cannot perform a certain action to improve visibility of system status and aid in user-based diagnosis of actions.

5. Aesthetically and to increase error prevention, adding an auto lock across the board for 5-star artifacts will make things more consistent and safer for users who switch from weapon menu to artifacts while they have similar interfaces and perform an irreversible action.

6. When we enter Co-op mode, a prompt to tell we cannot interact with NPC's respective or irrespective of them belonging to a quest or removing the constraint to allow smooth gameplay will reduce frustration in users.

7. Introduce the thumbnail like item selection in the Serenitea Pot realm shop.

References

[1] Lingscar Car Rental Evaluation Analysis by DV1557 as an example

[2] Aesthetic Evaluation of Far Cry Primal by Yousra J'lali, Hadsan Hassan

[3] Chapter 7 of Human Computer Interaction 3rd Edition by Alan Dix, Janet Finley, Gregory D. Abowd, Russell Beale.