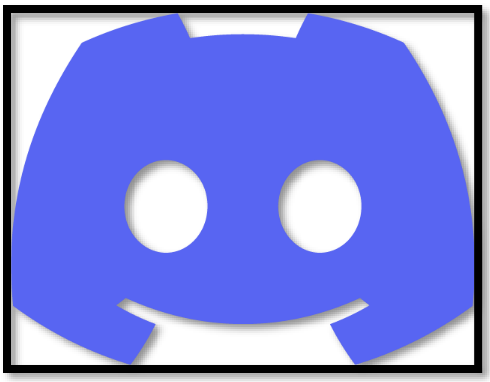


UCCD2123 USER EXPERIENCE DESIGN

Assignment (20%)

Name	ID	Program
Richard Ting Li Zeng	2301973	CS
Koh Ting Zhang	2206420	CN
Phun Yong Heng	2206418	CN
Tan Hoi Jian	2304491	CN

Application: Discord

Developer / Own by: Discord Inc.

Table of Contents

Chapter 1.0 Application Review （Task 1.2）

1.1 Discord Review

Discord, created by Jason Citron, who had created OpenFeint and sold it for 104 million US Dollars in 2011 [1],[2], and Stanislav Vishnevsky, is a social media platform focused on online gamers for discussions in games at the beginning [2],[3],[4]. It has been developed into a general social media platform and covered by educators, video creators, artists, and other individual users due to the COVID-19 pandemic [4]. For user categorisation, users can create roles in the community and choose their roles to categorise them into the same channel [5]. Users can communicate and collaborate with others through text channels, voice chats, and video calls [6]. Some technologies support Discord's operations and functionality such as WebRTC, centralized architecture, cloud infrastructure, and some APIs for bot creation [7],[8].

Chapter 2.0: Application Usability Analysis (Task 1.3)

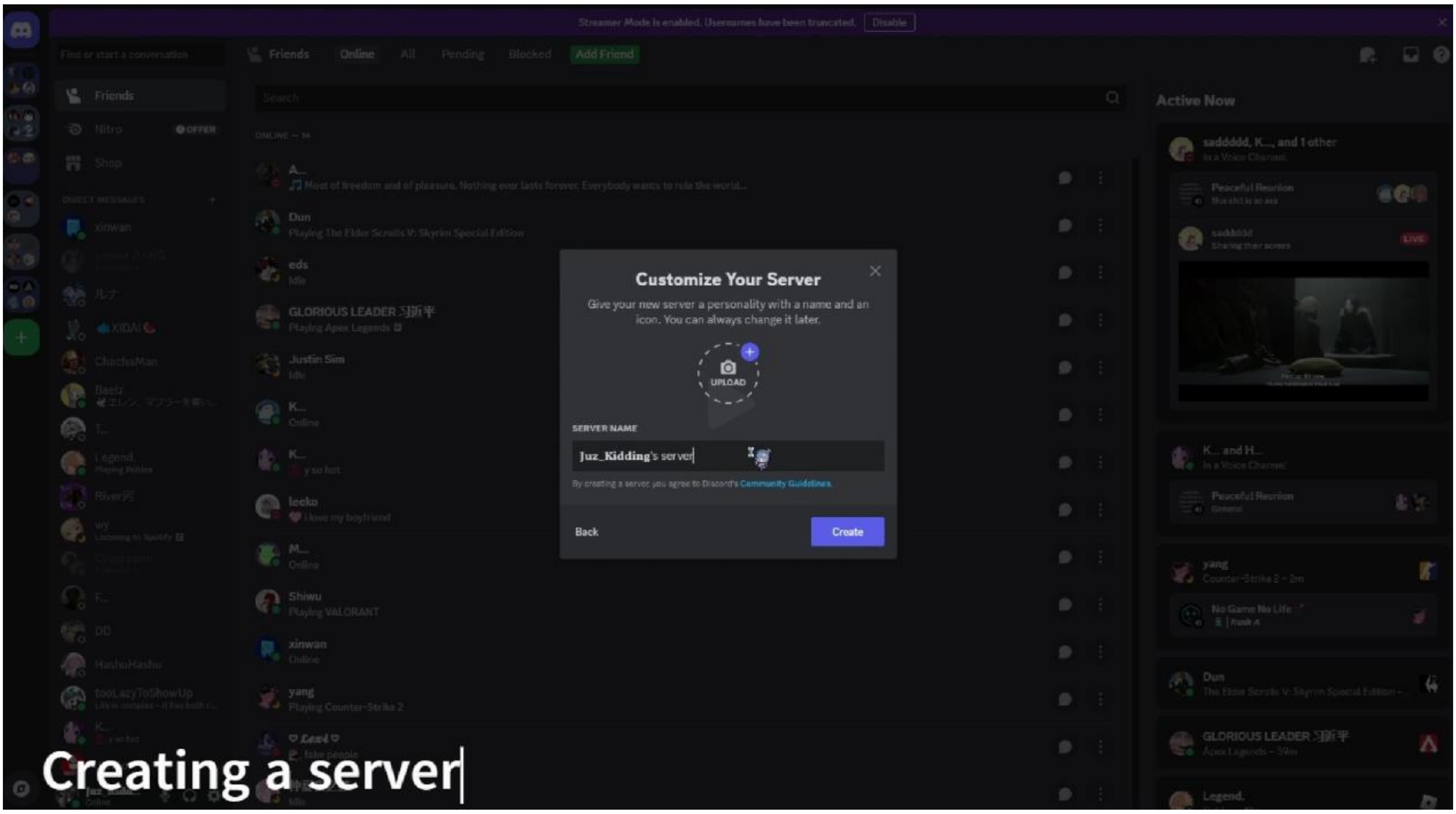
2.1 Five Key Usability Factors

The objective of this assignment is to evaluate the usability of an application by analysing its interface design using five key ease-of-use factors as follows:

Efficiency: Users should be able to perform tasks with an appropriate amount of effort.

- What to Measure: Time taken to complete tasks.
- How to Measure: Use a stopwatch or software to track time.
- Example: How long does it take to open a server, create a role and add the role onto the user.

Figure 2.1 Creating a server

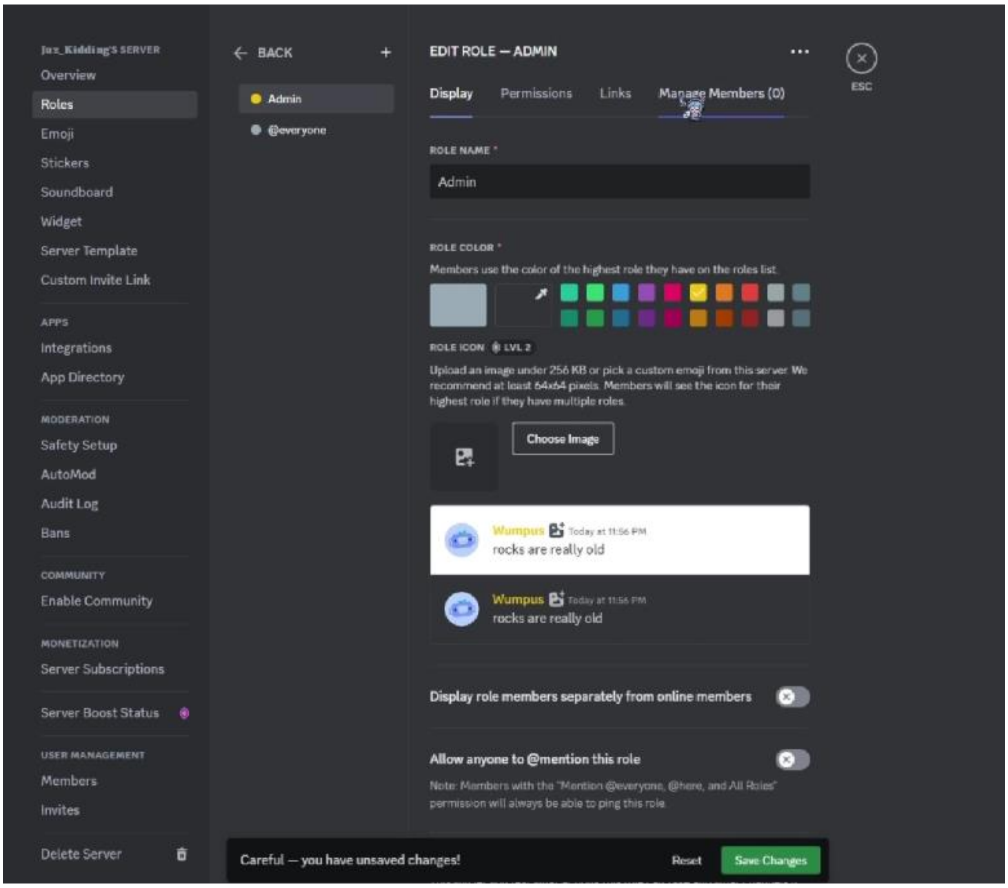


Customize Your Server

Give your new server a personality with a name and an icon. You can always change it later.

SERVER NAME: Juz_Kidding's server

By creating a server, you agree to Discord's Community Guidelines.



ROLE NAME *

Admin

ROLE COLOR *

Members use the color of the highest role they have on the roles list

ROLE ICON LVL 2

Upload an image under 256 KB or pick a custom emoji from this server. We recommend at least 64x64 pixels. Members will see the icon for their highest role if they have multiple roles.

Wumpus Today at 11:56 PM
rocks are really old

Wumpus Today at 11:56 PM
rocks are really old

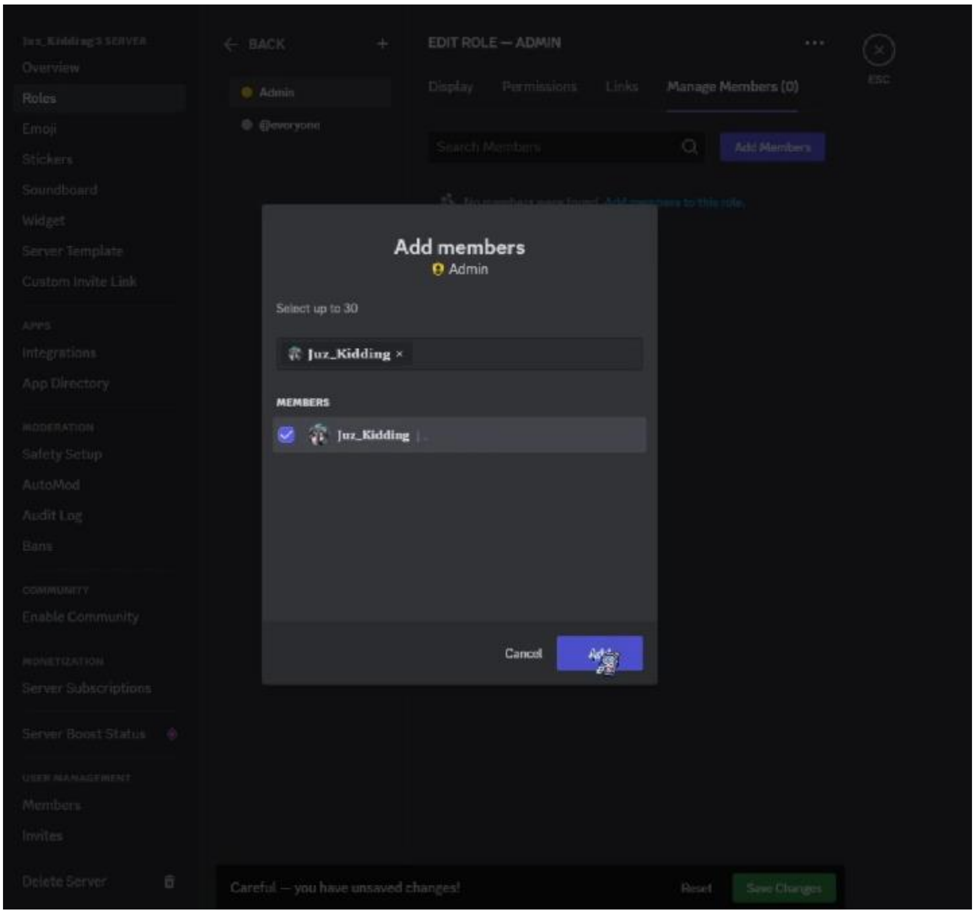
Display role members separately from online members

Allow anyone to @mention this role

Note: Members with the "Mention @everyone, @here, and All Roles" permission will always be able to ping this role.

Careful — you have unsaved changes!

Figure 2.2 Creating a role



No members were found. Add members to this role.

Add members
Admin

Select up to 30

Juz_Kidding ×

MEMBERS

☑ Juz_Kidding

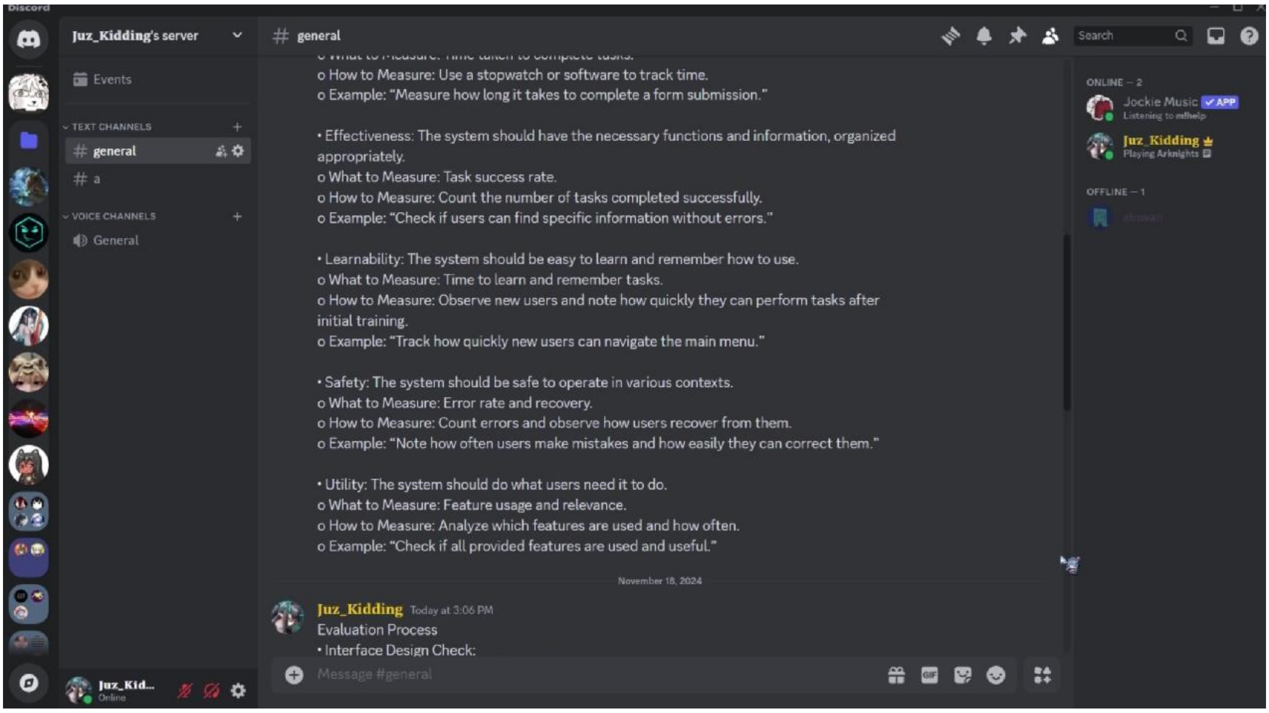
Careful — you have unsaved changes!

Figure 2.3 add a role onto the user

The whole process took around 10 seconds. This prove that the user can perform tasks with an appropriate amount of effort while having extreme efficiency. The steps are simple and easy to remember.

2. Effectiveness: The system should have the necessary functions and information, organized appropriately.
    - What to Measure: Task success rate.
    - How to Measure: Count the number of tasks completed successfully.
    - Example: How user can find a specific word using the search function.

Figure 2.4 Finding the word “Effectiveness” from a conversation



o What to Measure: Time taken to complete tasks.
o How to Measure: Use a stopwatch or software to track time.
o Example: “Measure how long it takes to complete a form submission.”

• Effectiveness: The system should have the necessary functions and information, organized appropriately.
o What to Measure: Task success rate.
o How to Measure: Count the number of tasks completed successfully.
o Example: “Check if users can find specific information without errors.”

• Learnability: The system should be easy to learn and remember how to use.
o What to Measure: Time to learn and remember tasks.
o How to Measure: Observe new users and note how quickly they can perform tasks after initial training.
o Example: “Track how quickly new users can navigate the main menu.”

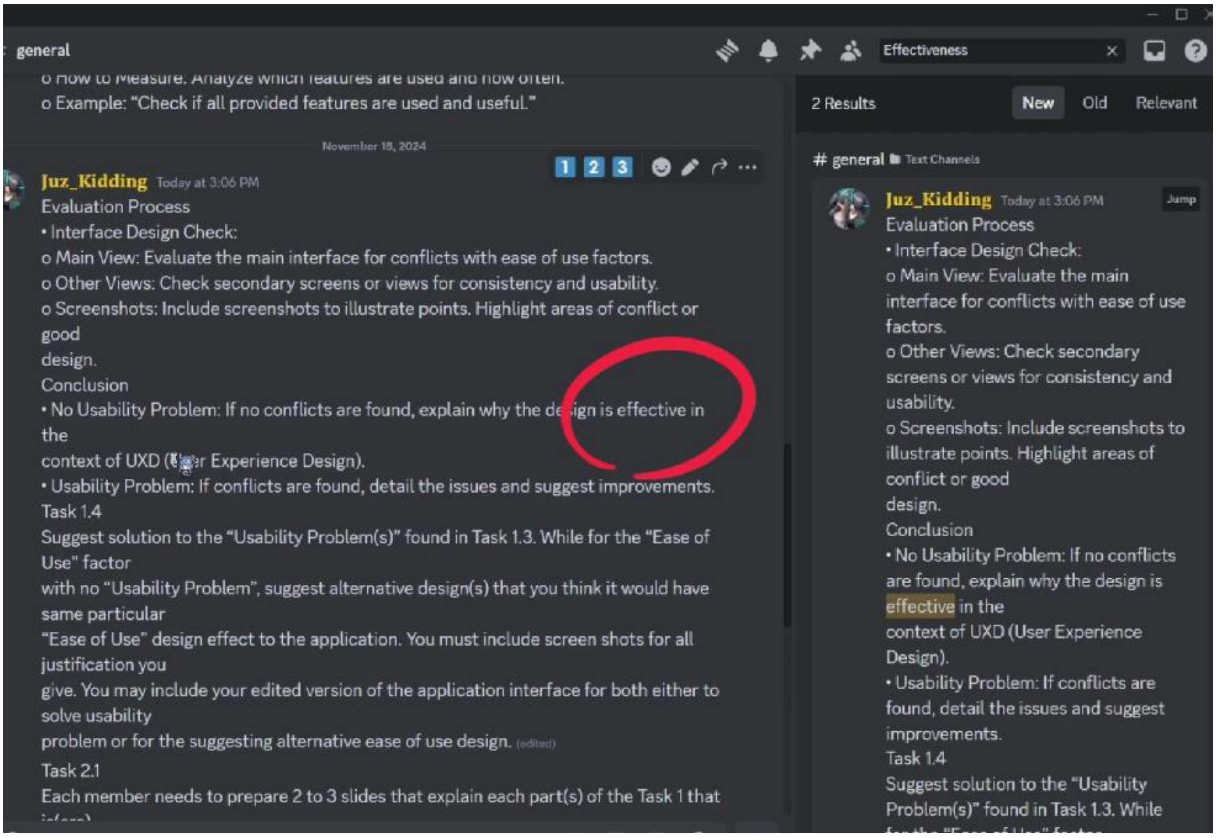
• Safety: The system should be safe to operate in various contexts.
o What to Measure: Error rate and recovery.
o How to Measure: Count errors and observe how users recover from them.
o Example: “Note how often users make mistakes and how easily they can correct them.”

• Utility: The system should do what users need it to do.
o What to Measure: Feature usage and relevance.
o How to Measure: Analyze which features are used and how often.
o Example: “Check if all provided features are used and useful.”

November 18, 2024

Juz_Kidding Today at 3:06 PM
Evaluation Process
• Interface Design Check:

The search function can be found in the top right corner of the application.



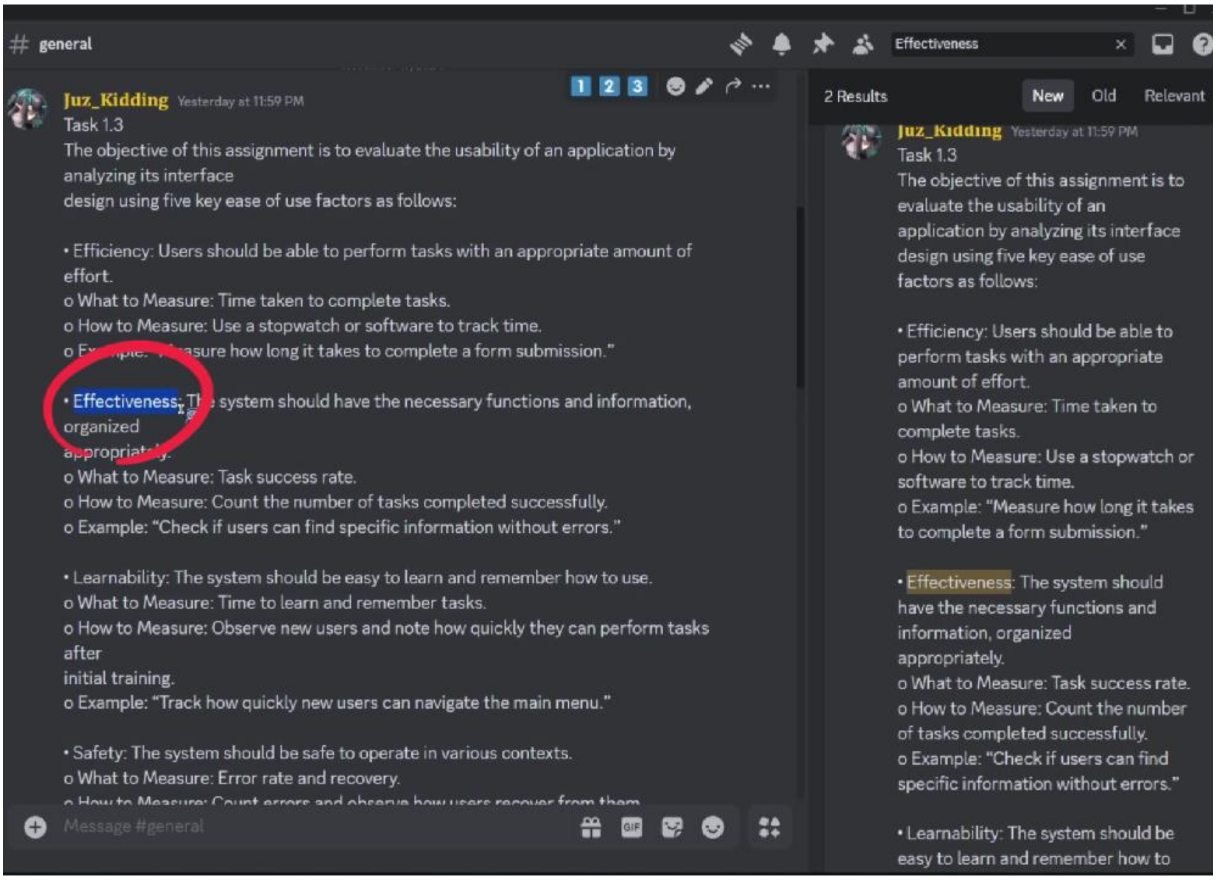
o How to Measure: Analyze which features are used and how often.
o Example: "Check if all provided features are used and useful."

November 18, 2024

Juz_Kidding Today at 3:06 PM
Evaluation Process
• Interface Design Check:
o Main View: Evaluate the main interface for conflicts with ease of use factors.
o Other Views: Check secondary screens or views for consistency and usability.
o Screenshots: Include screenshots to illustrate points. Highlight areas of conflict or good
design.
Conclusion
• No Usability Problem: If no conflicts are found, explain why the design is effective in the
context of UXD (User Experience Design).
• Usability Problem: If conflicts are found, detail the issues and suggest improvements.
Task 1.4
Suggest solution to the "Usability Problem(s)" found in Task 1.3. While for the "Ease of Use" factor
with no "Usability Problem", suggest alternative design(s) that you think it would have same particular
"Ease of Use" design effect to the application. You must include screen shots for all justification you
give. You may include your edited version of the application interface for both either to solve usability
problem or for the suggesting alternative ease of use design. (edited)
Task 2.1
Each member needs to prepare 2 to 3 slides that explain each part(s) of the Task 1 that

Juz_Kidding Today at 3:06 PM
Evaluation Process
• Interface Design Check:
o Main View: Evaluate the main interface for conflicts with ease of use factors.
o Other Views: Check secondary screens or views for consistency and usability.
o Screenshots: Include screenshots to illustrate points. Highlight areas of conflict or good
design.
Conclusion
• No Usability Problem: If no conflicts are found, explain why the design is effective in the
context of UXD (User Experience Design).
• Usability Problem: If conflicts are found, detail the issues and suggest improvements.
Task 1.4
Suggest solution to the "Usability Problem(s)" found in Task 1.3. While

Figure 2.5 First result found in the conversation



Juz_Kidding Yesterday at 11:59 PM
Task 1.3
The objective of this assignment is to evaluate the usability of an application by analyzing its interface
design using five key ease of use factors as follows:

• Efficiency: Users should be able to perform tasks with an appropriate amount of effort.
o What to Measure: Time taken to complete tasks.
o How to Measure: Use a stopwatch or software to track time.
o Example: "Measure how long it takes to complete a form submission."

• Effectiveness: The system should have the necessary functions and information, organized
appropriately.
o What to Measure: Task success rate.
o How to Measure: Count the number of tasks completed successfully.
o Example: "Check if users can find specific information without errors."

• Learnability: The system should be easy to learn and remember how to use.
o What to Measure: Time to learn and remember tasks.
o How to Measure: Observe new users and note how quickly they can perform tasks after
initial training.
o Example: "Track how quickly new users can navigate the main menu."

• Safety: The system should be safe to operate in various contexts.
o What to Measure: Error rate and recovery.
o How to Measure: Count errors and observe how users recover from them

Juz_Kidding Yesterday at 11:59 PM
Task 1.3
The objective of this assignment is to evaluate the usability of an application by analyzing its interface design using five key ease of use factors as follows:

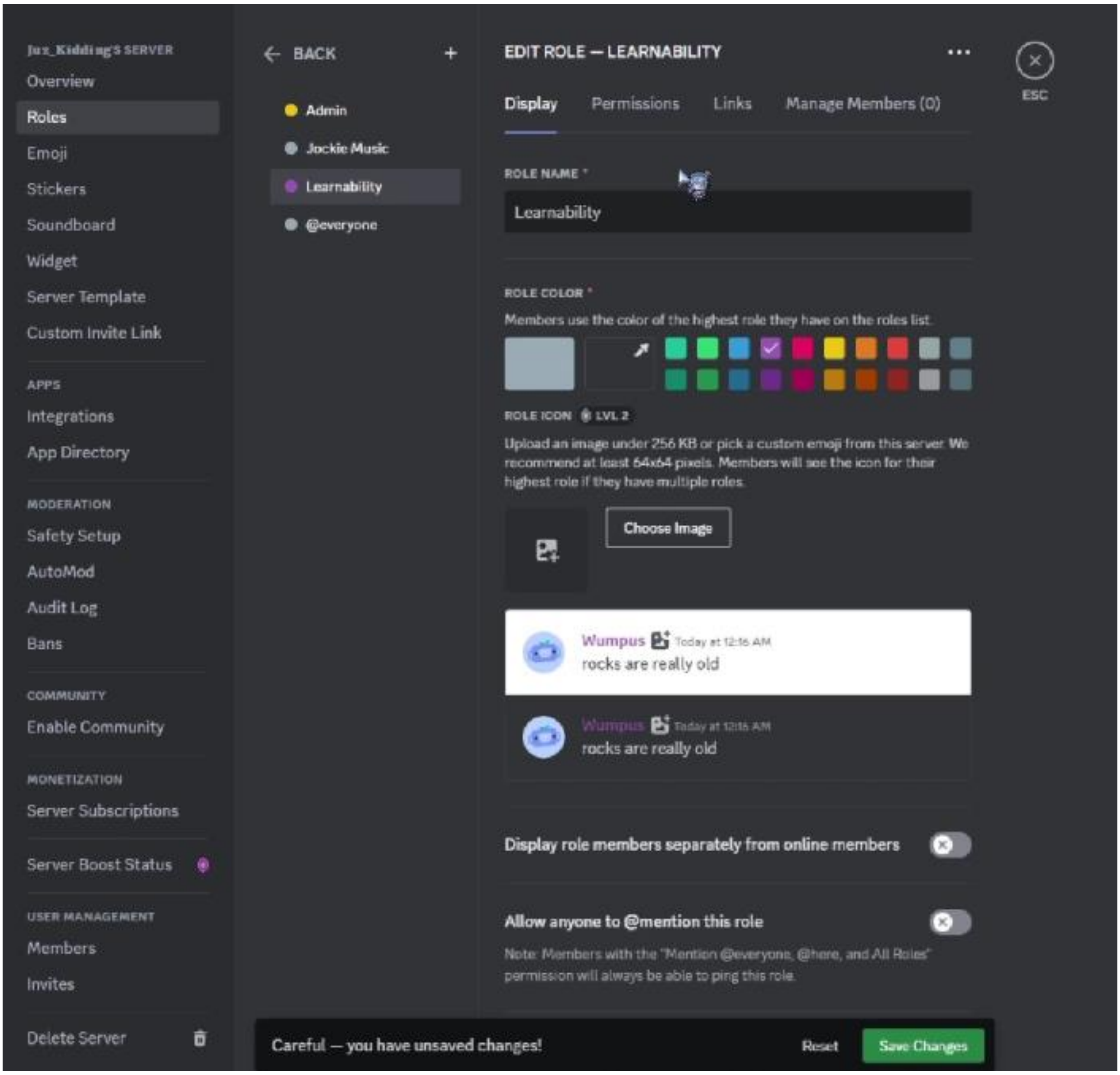
• Efficiency: Users should be able to perform tasks with an appropriate amount of effort.
o What to Measure: Time taken to complete tasks.
o How to Measure: Use a stopwatch or software to track time.
o Example: "Measure how long it takes to complete a form submission."

• Effectiveness: The system should have the necessary functions and information, organized appropriately.
o What to Measure: Task success rate.
o How to Measure: Count the number of tasks completed successfully.
o Example: "Check if users can find specific information without errors."

• Learnability: The system should be easy to learn and remember how to

Figure 2.6 Second result found

3. Learnability: The system should be easy to learn and remember how to use.
   - What to Measure: Time to learn and remember tasks.
   - How to Measure: Observe new users and note how quickly they can perform tasks after initial training.
   - Example: How to set permission for roles, set certain channel can only be access by certain roles. 1



ROLE NAME *

Learnability

ROLE COLOR *

Members use the color of the highest role they have on the roles list.

ROLE ICON LVL 2

Upload an image under 256 KB or pick a custom emoji from this server. We recommend at least 64x64 pixels. Members will see the icon for their highest role if they have multiple roles.

Wumpus Today at 12:16 AM
rocks are really old

Wumpus Today at 12:16 AM
rocks are really old

Display role members separately from online members

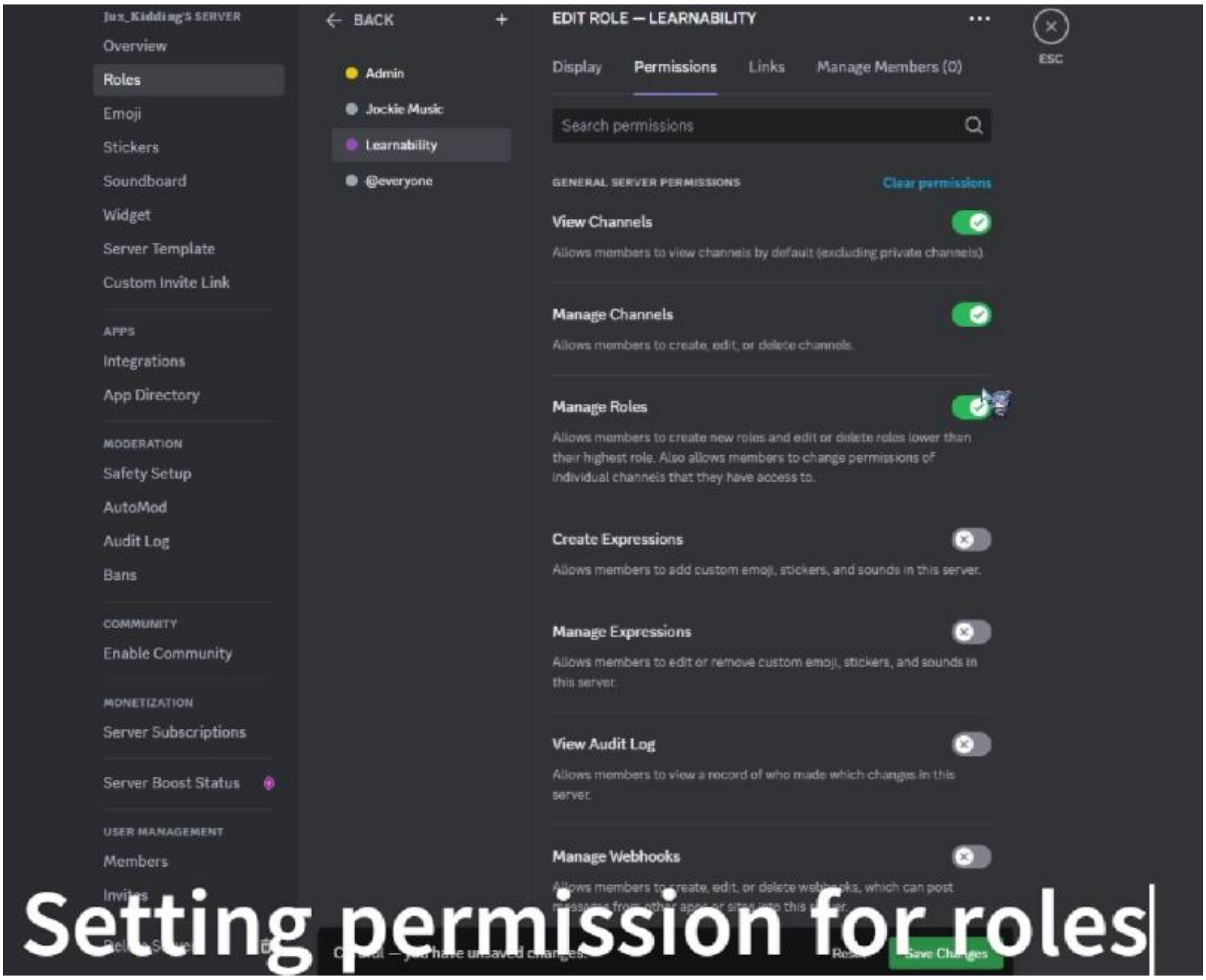
Allow anyone to @mention this role

Note: Members with the "Mention @everyone, @here, and All Roles" permission will always be able to ping this role.

Careful — you have unsaved changes!

Figure 2.7 New user creating a role

This action used around 10 seconds. Since there is a lot of functions available, new user need to navigate with sometime.



EDIT ROLE — LEARNABILITY

GENERAL SERVER PERMISSIONS

View Channels ✓
Allows members to view channels by default (excluding private channels).

Manage Channels ✓
Allows members to create, edit, or delete channels.

Manage Roles ✓
Allows members to create new roles and edit or delete roles lower than their highest role. Also allows members to change permissions of individual channels that they have access to.

Create Expressions ☒
Allows members to add custom emoji, stickers, and sounds in this server.

Manage Expressions ☒
Allows members to edit or remove custom emoji, stickers, and sounds in this server.

View Audit Log ☒
Allows members to view a record of who made which changes in this server.

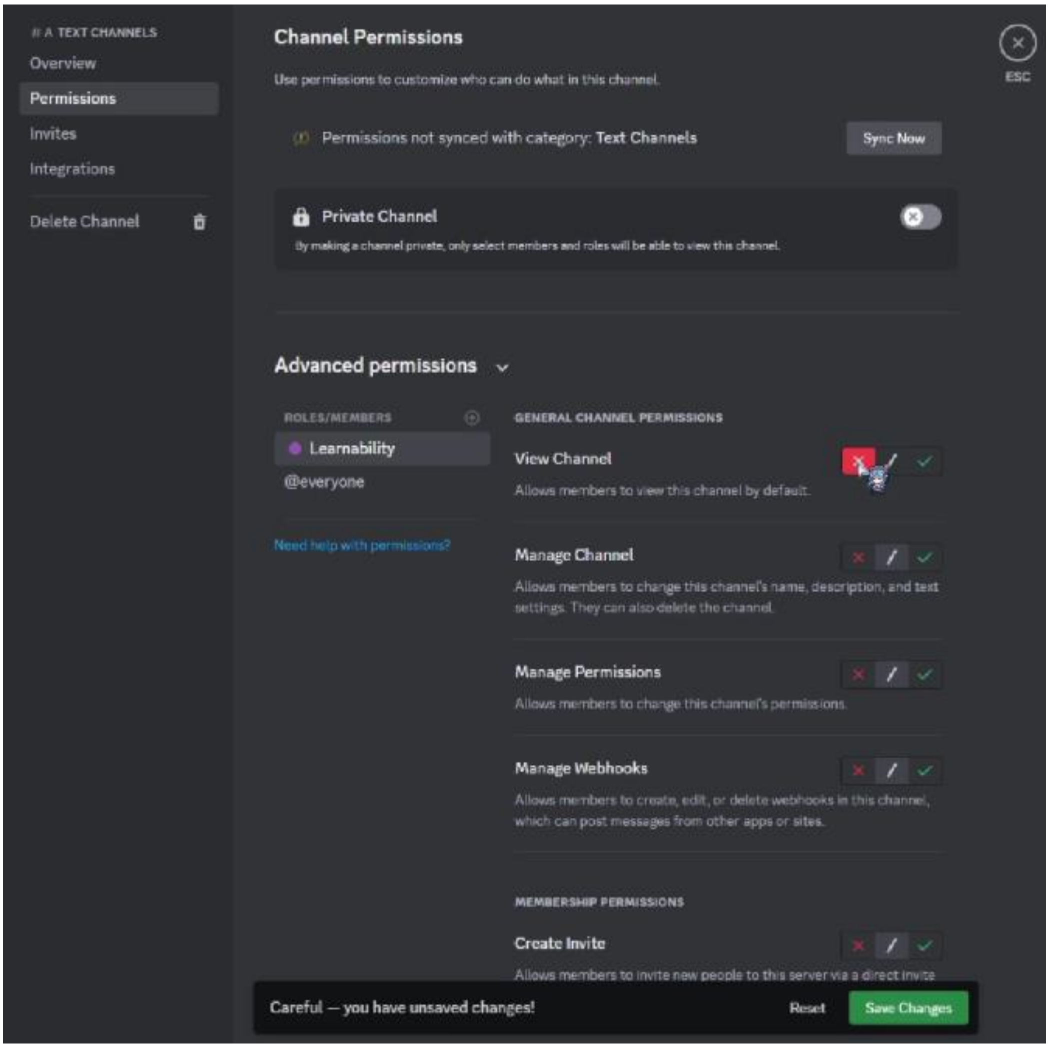
Manage Webhooks ☒
Allows members to create, edit, or delete webhooks, which can post messages from other apps or sites into this server.

Careful — you have unsaved changes!

Setting permission for roles

Figure 2.8 Setting permissions for the created ‘Learnability’ role.

Users need to choose what does the created ‘Learnability’ role can do and have access to for example view channel, edit messages and more. The time used might increase based on how many option the user wanted to allow the role.



A TEXT CHANNELS

Overview

Permissions

Invites

Integrations

Delete Channel

Channel Permissions

Use permissions to customize who can do what in this channel.

Permissions not synced with category: **Text Channels** Sync Now

Private Channel

By making a channel private, only select members and roles will be able to view this channel.

Advanced permissions

ROLES/MEMBERS

- Learnability
- @everyone

Need help with permissions?

GENERAL CHANNEL PERMISSIONS

View Channel ✕ / ✓

Allows members to view this channel by default.

Manage Channel ✕ / ✓

Allows members to change this channel's name, description, and text settings. They can also delete the channel.

Manage Permissions ✕ / ✓

Allows members to change this channel's permissions.

Manage Webhooks ✕ / ✓

Allows members to create, edit, or delete webhooks in this channel, which can post messages from other apps or sites.

MEMBERSHIP PERMISSIONS

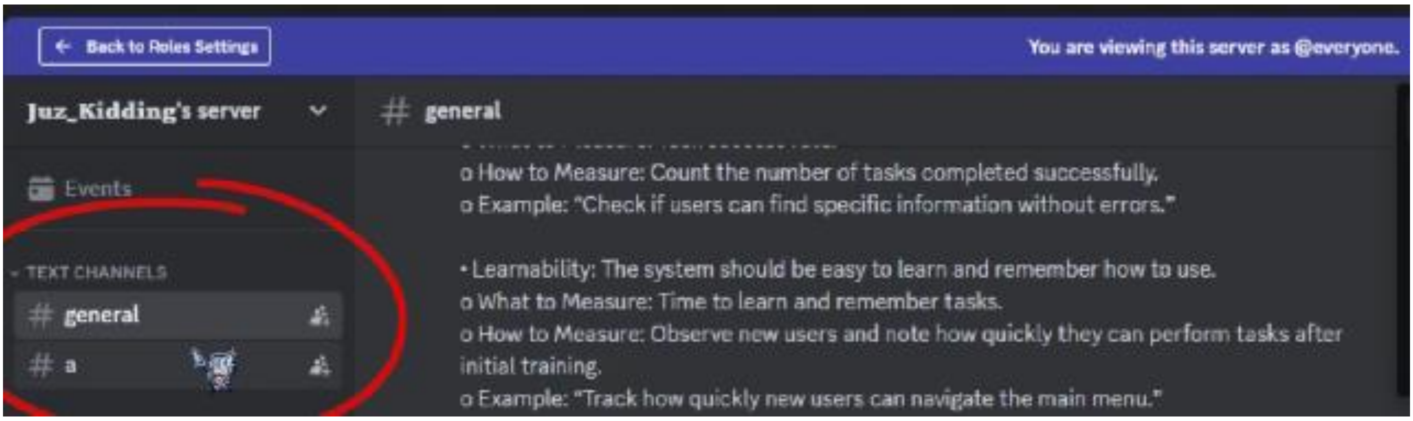
Create Invite ✕ / ✓

Allows members to invite new people to this server via a direct invite

Careful — you have unsaved changes! Reset Save Changes

Figure 2.9 Setting channel permissions

User will select what the selected role will be allowed to do for a certain channel. For example, the role ‘Learnability’ is not allowed to have access to the channel ‘a’.

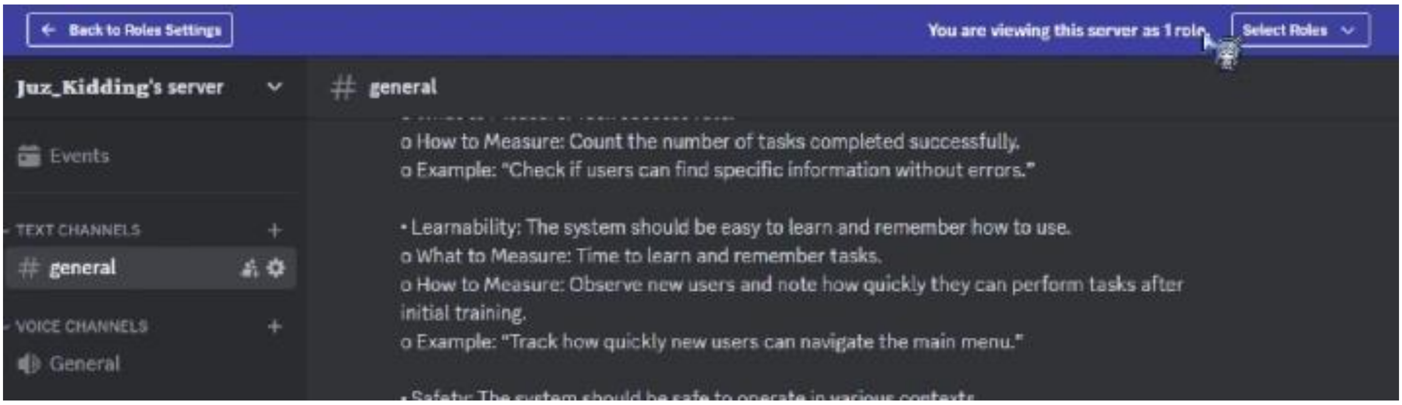


o How to Measure: Count the number of tasks completed successfully.
o Example: "Check if users can find specific information without errors."

• Learnability: The system should be easy to learn and remember how to use.
o What to Measure: Time to learn and remember tasks.
o How to Measure: Observe new users and note how quickly they can perform tasks after initial training.
o Example: "Track how quickly new users can navigate the main menu."

Figure 2.10 Showcase from the perspective of the 'Learnability' role.

As show as the figure above, the 'Learnability' role does not have access to the channel 'a'.



o How to Measure: Count the number of tasks completed successfully.
o Example: "Check if users can find specific information without errors."

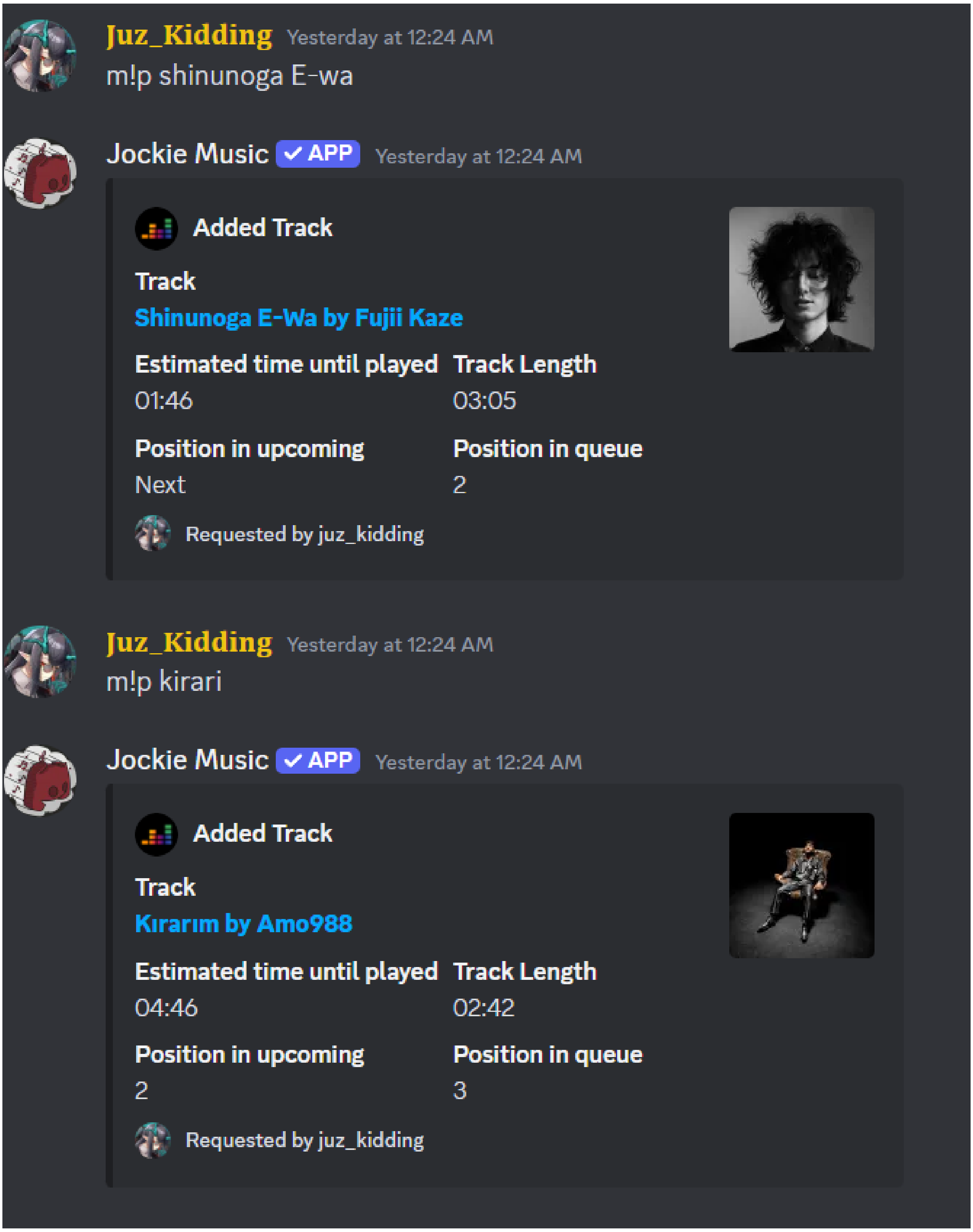
• Learnability: The system should be easy to learn and remember how to use.
o What to Measure: Time to learn and remember tasks.
o How to Measure: Observe new users and note how quickly they can perform tasks after initial training.
o Example: "Track how quickly new users can navigate the main menu."

• Safety: The system should be safe to operate in various contexts.

Figure 2.11 Showcase from the perspective from @everyone.

While the figure above, everyone has access to the channel 'a'.

4. Safety: The system should be safe to operate in various contexts.
   - What to Measure: Error rate and recovery.
   - How to Measure: Count errors and observe how users recover from them.
   - Example: User input 2 song, the bot added the wrong song, the user removes the wrong song and add the correct song.



Juz_Kidding Yesterday at 12:24 AM

m!p shinunoga E-wa

Jockie Music ✓ APP Yesterday at 12:24 AM

Added Track

Track

Shinunoga E-Wa by Fujii Kaze

Estimated time until played	Track Length
01:46	03:05

Position in upcoming	Position in queue
Next	2

Requested by juz_kidding

Juz_Kidding Yesterday at 12:24 AM

m!p kirari

Jockie Music ✓ APP Yesterday at 12:24 AM

Added Track

Track

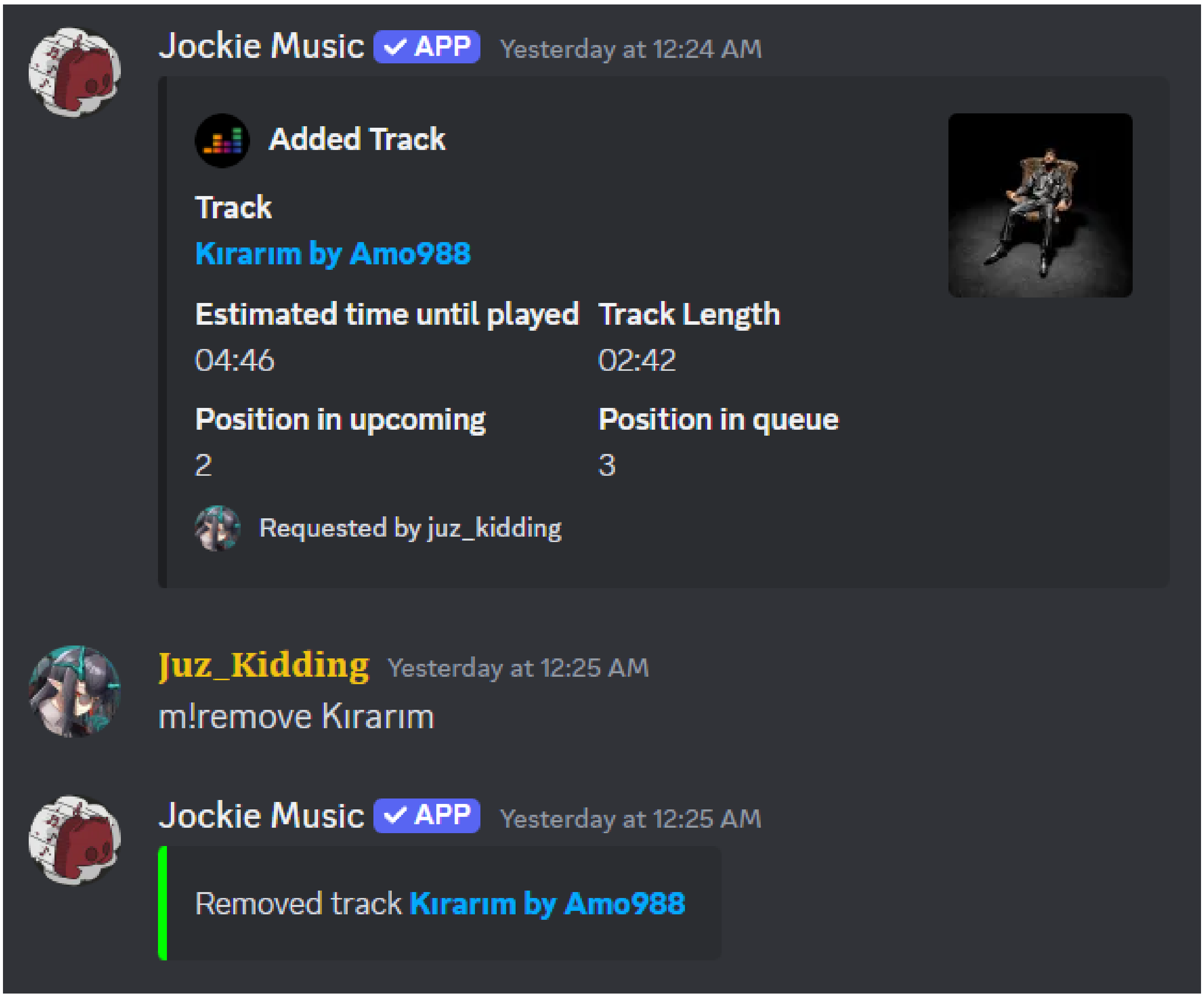
Kırarım by Amo988

Estimated time until played	Track Length
04:46	02:42

Position in upcoming	Position in queue
2	3

Requested by juz_kidding

Figure 2.12 User added 2 songs.



Jockie Music ✓ APP Yesterday at 12:24 AM

Added Track

Track

Kırarım by Amo988

Estimated time until played: 04:46

Track Length: 02:42

Position in upcoming: 2

Position in queue: 3

Requested by juz_kidding

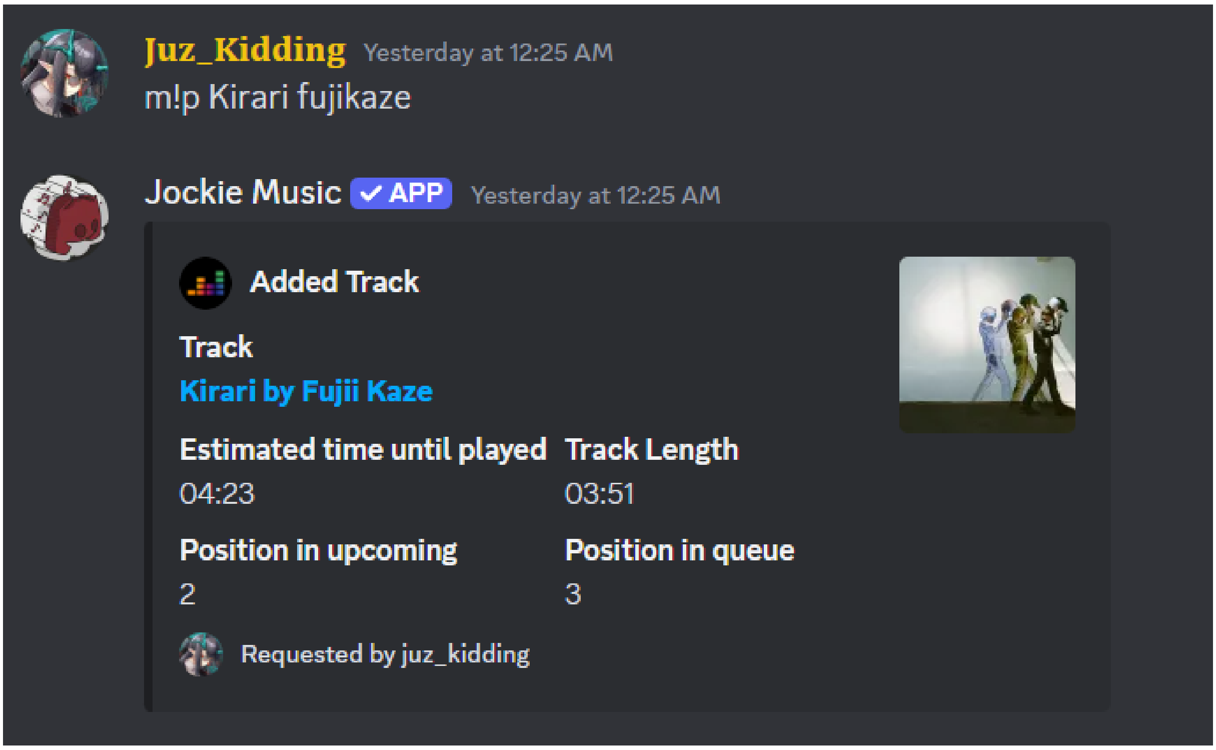
Juz_Kidding Yesterday at 12:25 AM

m!remove Kırarım

Jockie Music ✓ APP Yesterday at 12:25 AM

Removed track Kırarım by Amo988

Figure 2.13 User removed the wrong song



Juz_Kidding Yesterday at 12:25 AM

m!p Kirari fujikaze

Jockie Music ✓ APP Yesterday at 12:25 AM

Added Track

Track

Kirari by Fujii Kaze

Estimated time until played: 04:23

Track Length: 03:51

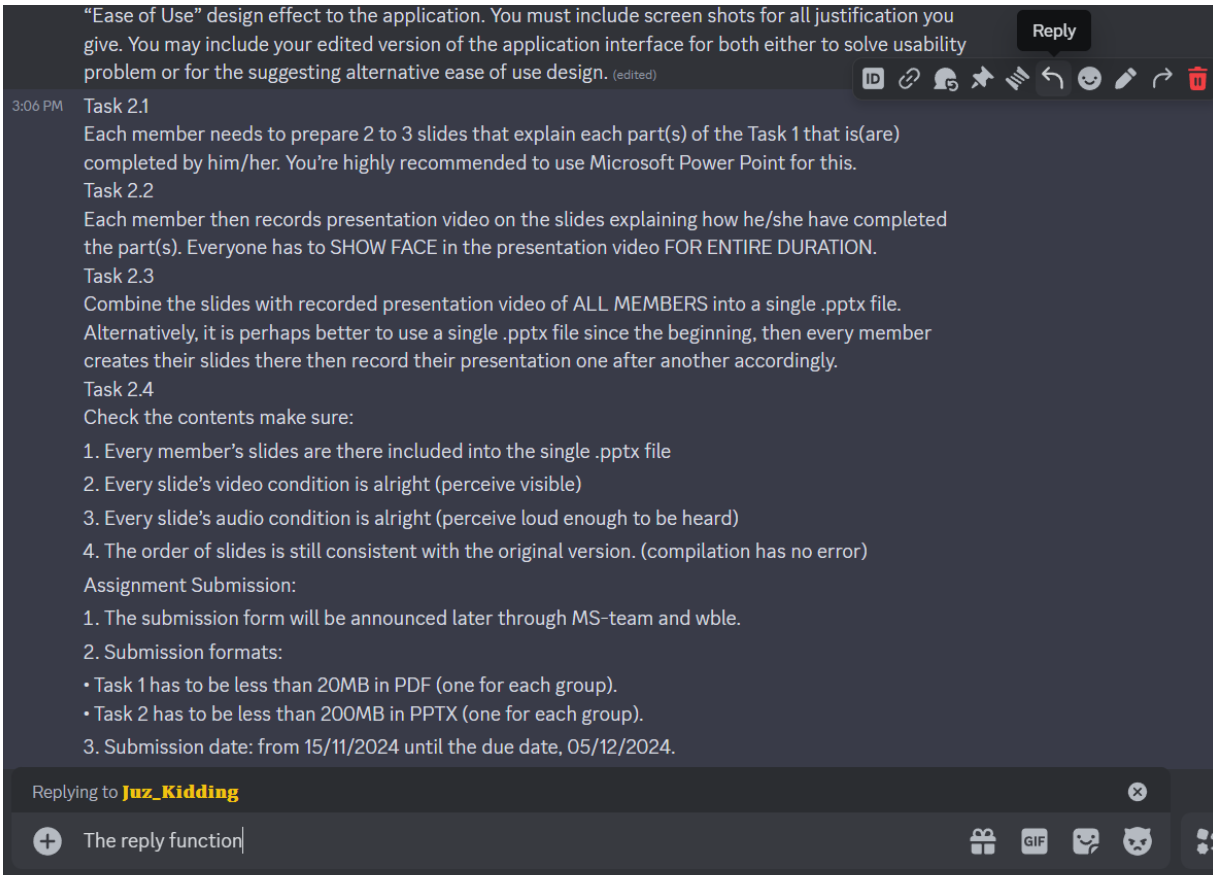
Position in upcoming: 2

Position in queue: 3

Requested by juz_kidding

Figure 2.14 User corrected the wrong song

5. Utility: The system should do what users need it to do.
   - What to Measure: Feature usage and relevance.
   - How to Measure: Analyse which features are used and how often.
   - Example: "Check if all provided features are used and useful." 12



"Ease of Use" design effect to the application. You must include screen shots for all justification you give. You may include your edited version of the application interface for both either to solve usability problem or for the suggesting alternative ease of use design. (edited)

3:06 PM Task 2.1
Each member needs to prepare 2 to 3 slides that explain each part(s) of the Task 1 that is(are) completed by him/her. You're highly recommended to use Microsoft Power Point for this.
Task 2.2
Each member then records presentation video on the slides explaining how he/she have completed the part(s). Everyone has to SHOW FACE in the presentation video FOR ENTIRE DURATION.
Task 2.3
Combine the slides with recorded presentation video of ALL MEMBERS into a single .pptx file. Alternatively, it is perhaps better to use a single .pptx file since the beginning, then every member creates their slides there then record their presentation one after another accordingly.
Task 2.4
Check the contents make sure:

1. Every member's slides are there included into the single .pptx file
2. Every slide's video condition is alright (perceive visible)
3. Every slide's audio condition is alright (perceive loud enough to be heard)
4. The order of slides is still consistent with the original version. (compilation has no error)

Assignment Submission:

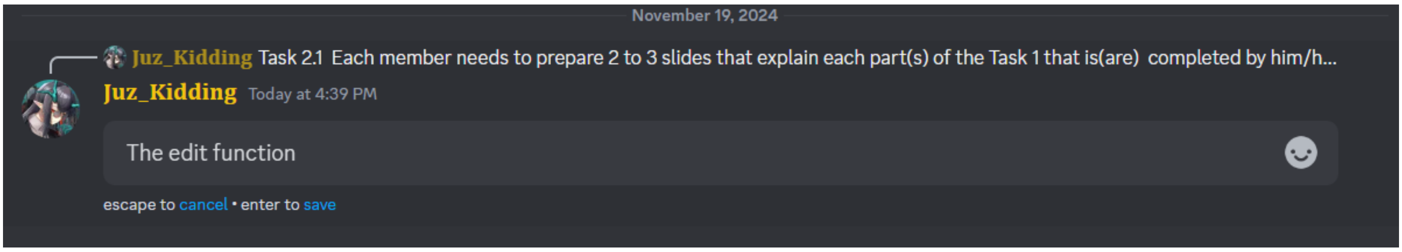
1. The submission form will be announced later through MS-team and wble.
2. Submission formats:
   - Task 1 has to be less than 20MB in PDF (one for each group).
   - Task 2 has to be less than 200MB in PPTX (one for each group).
3. Submission date: from 15/11/2024 until the due date, 05/12/2024.

Replying to Juz_Kidding

The reply function

Figure 2.15 The reply function

This this function allows user to reply to another user's message. It is often used in daily conversations.



November 19, 2024

Juz_Kidding Task 2.1 Each member needs to prepare 2 to 3 slides that explain each part(s) of the Task 1 that is(are) completed by him/h...

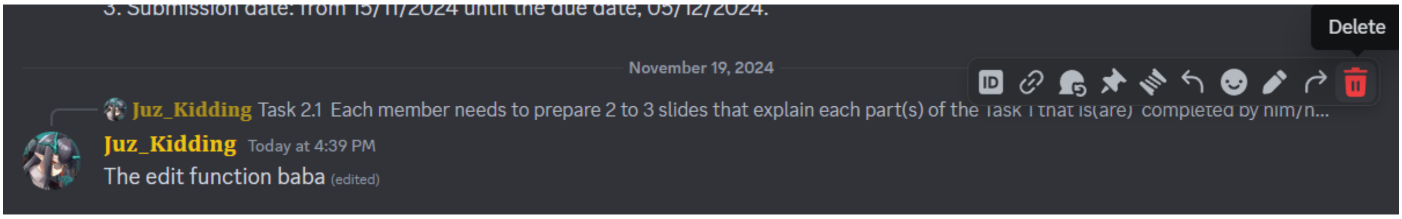
Juz_Kidding Today at 4:39 PM

The edit function

escape to cancel • enter to save

Figure 2.16 The edit function

This function allows users to edit their own messages. It is useful when having typos in the sent message.



3. Submission date: from 15/11/2024 until the due date, 05/12/2024.

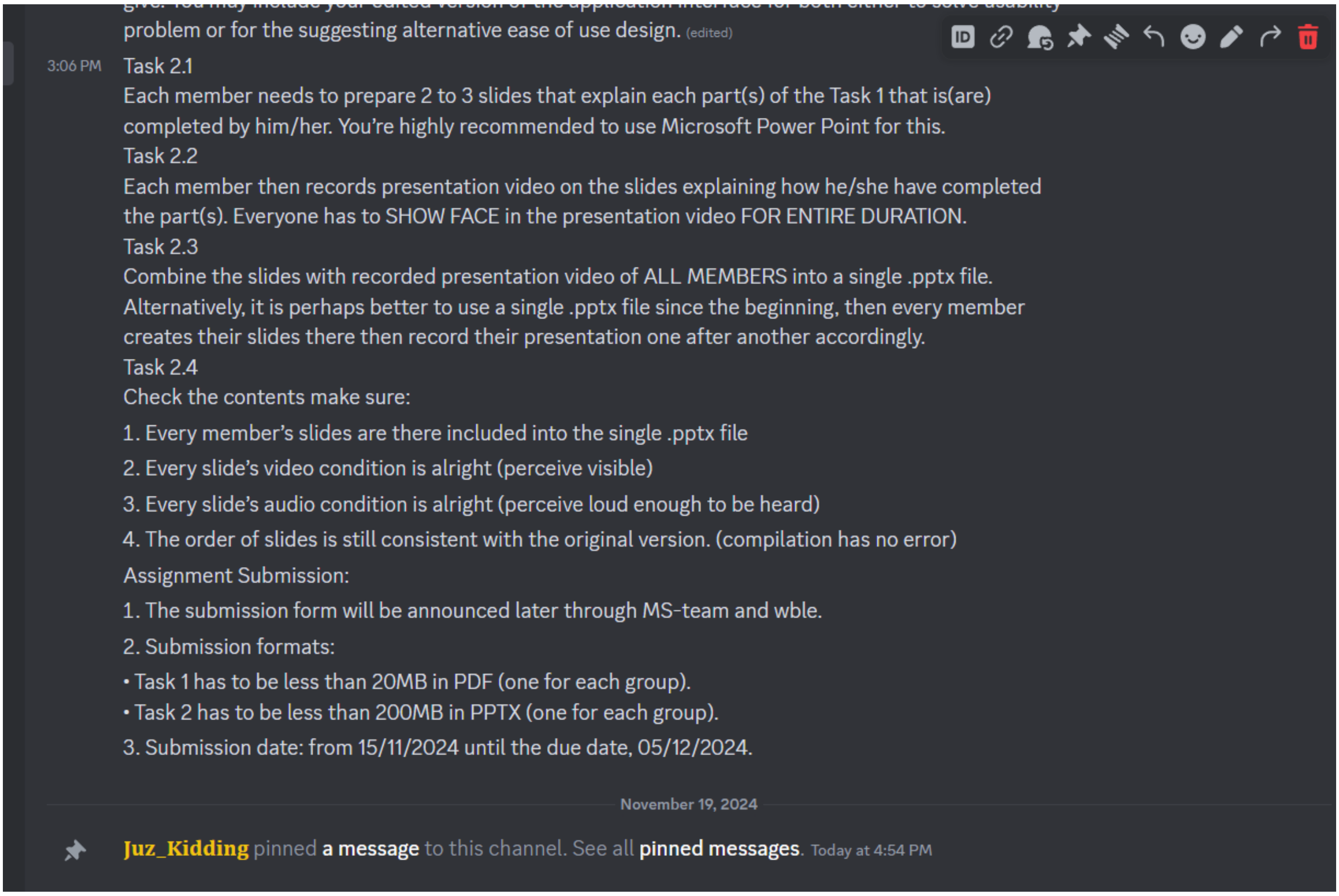
November 19, 2024

Juz_Kidding Task 2.1 Each member needs to prepare 2 to 3 slides that explain each part(s) of the Task 1 that is(are) completed by him/n...

Juz_Kidding Today at 4:39 PM
The edit function baba (edited)

Figure 2.17 The delete function

The delete function allows user to delete messages. The user will be able to delete other user's messages if there are allowed based on their roles. For example, an Admin role can delete any messages while the 'Learnability' only allows to delete their own messages.



give. You may include your edited version of the application interface for both either to solve usability problem or for the suggesting alternative ease of use design. (edited)

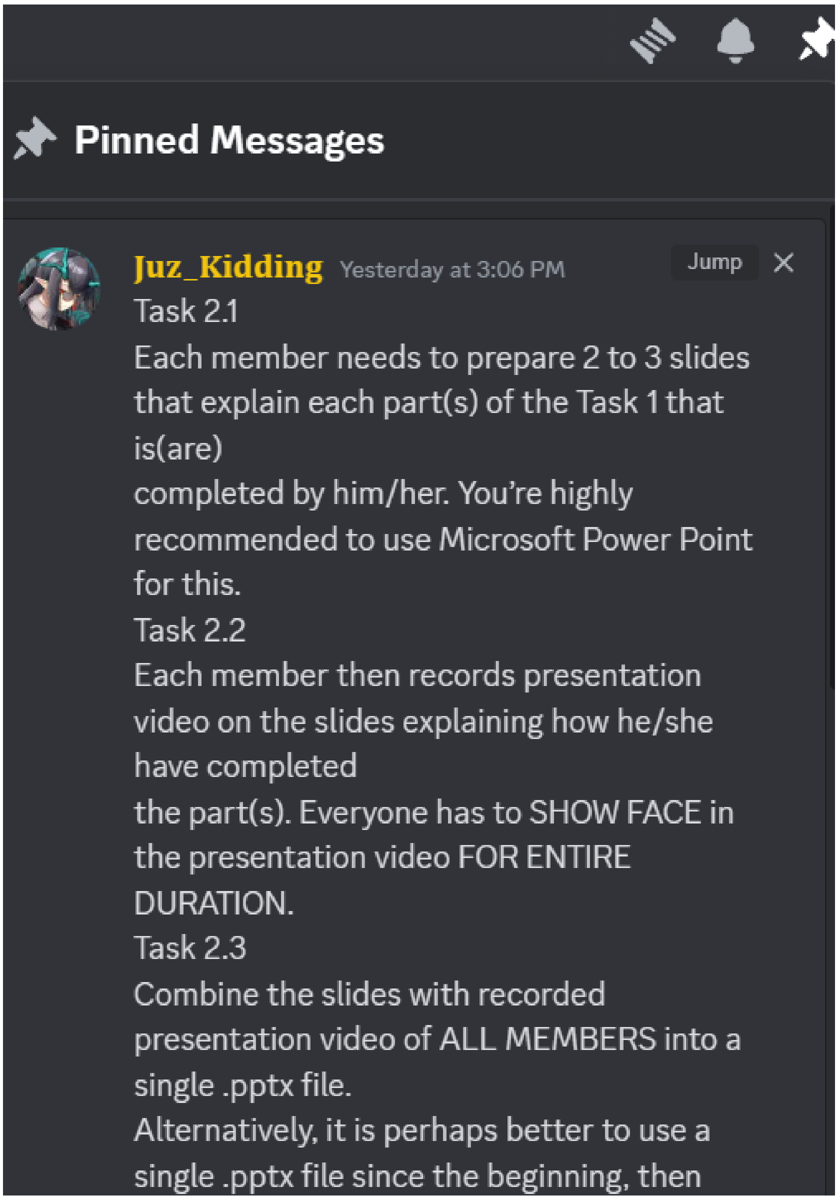
3:06 PM Task 2.1
Each member needs to prepare 2 to 3 slides that explain each part(s) of the Task 1 that is(are) completed by him/her. You're highly recommended to use Microsoft Power Point for this.
Task 2.2
Each member then records presentation video on the slides explaining how he/she have completed the part(s). Everyone has to SHOW FACE in the presentation video FOR ENTIRE DURATION.
Task 2.3
Combine the slides with recorded presentation video of ALL MEMBERS into a single .pptx file. Alternatively, it is perhaps better to use a single .pptx file since the beginning, then every member creates their slides there then record their presentation one after another accordingly.
Task 2.4
Check the contents make sure:
1. Every member's slides are there included into the single .pptx file
2. Every slide's video condition is alright (perceive visible)
3. Every slide's audio condition is alright (perceive loud enough to be heard)
4. The order of slides is still consistent with the original version. (compilation has no error)
Assignment Submission:
1. The submission form will be announced later through MS-team and wble.
2. Submission formats:
• Task 1 has to be less than 20MB in PDF (one for each group).
• Task 2 has to be less than 200MB in PPTX (one for each group).
3. Submission date: from 15/11/2024 until the due date, 05/12/2024.

November 19, 2024

Juz_Kidding pinned **a message** to this channel. See all **pinned messages**. Today at 4:54 PM

Figure 2.18 Pin message function

It allows the user to pin the message to find it with ease.



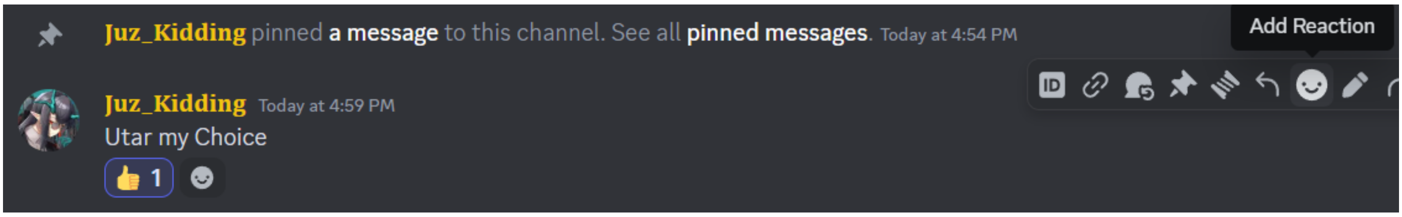
Pinned Messages

Juz_Kidding Yesterday at 3:06 PM

Task 2.1
Each member needs to prepare 2 to 3 slides that explain each part(s) of the Task 1 that is(are)
completed by him/her. You're highly recommended to use Microsoft Power Point for this.
Task 2.2
Each member then records presentation video on the slides explaining how he/she have completed
the part(s). Everyone has to SHOW FACE in the presentation video FOR ENTIRE DURATION.
Task 2.3
Combine the slides with recorded presentation video of ALL MEMBERS into a single .pptx file.
Alternatively, it is perhaps better to use a single .pptx file since the beginning, then

Figure 2.19 Pinned message board.

The pinned message will appear here with a single click.



Juz_Kidding pinned a message to this channel. See all pinned messages. Today at 4:54 PM

Juz_Kidding Today at 4:59 PM
Utar my Choice

Figure 2.20 Add reaction function

This function allows the user to react to message. The user can choose a variety of reaction, including the server that you joined but it requires discord nitro which is paid.

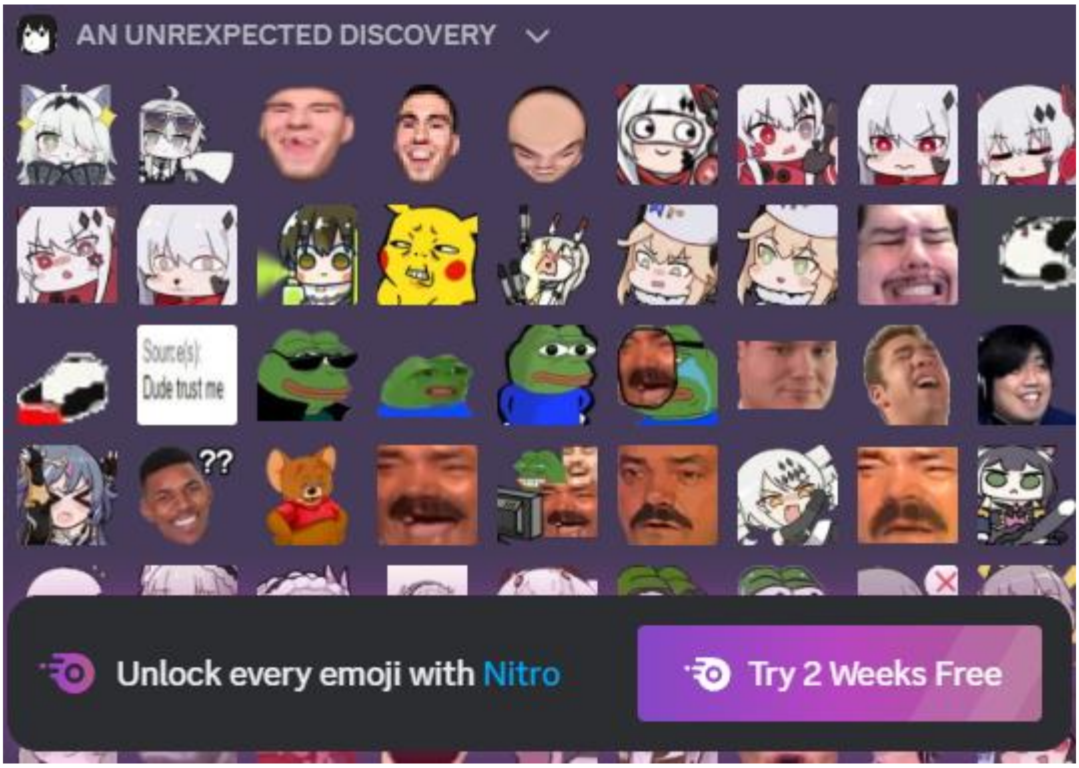
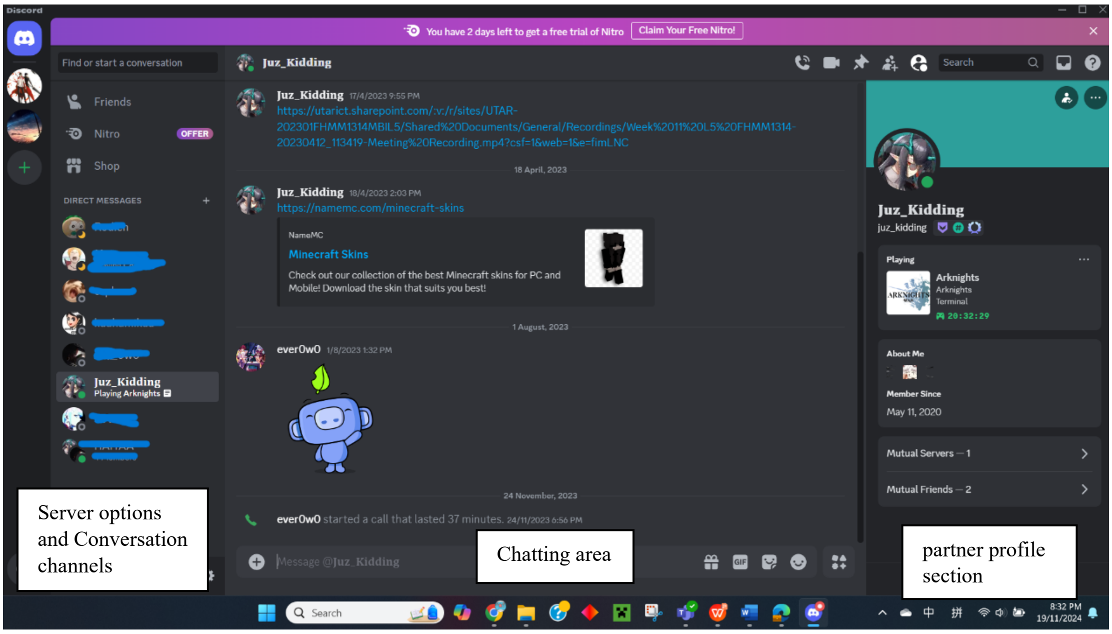


Figure 2.21 An example of emojis from another server.

2.2 Evaluation Process


Discord
You have 2 days left to get a free trial of Nitro
Claim Your Free Nitro!
Find or start a conversation
Friends
Nitro
OFFER
Shop
DIRECT MESSAGES
Search
GIF

[redacted]
[redacted]
[redacted]
[redacted]
[redacted]

Juz_Kidding
Playing Arknights

[redacted]
[redacted]

Juz_Kidding

Juz_Kidding 17/4/2023 9:55 PM
https://utarict.sharepoint.com/:v:/r/sites/UTAR-202301FHMM1314MBIL5/Shared%20Documents/General/Recordings/Week%2011%20L5%20FHMM1314-20230412_113419-Meeting%20Recording.mp4?csf=1&web=1&e=fimLNC

18 April, 2023

Juz_Kidding 18/4/2023 2:03 PM
https://namemc.com/minecraft-skins

NameMC
Minecraft Skins
Check out our collection of the best Minecraft skins for PC and Mobile! Download the skin that suits you best!

1 August, 2023

ever0w0 1/8/2023 1:32 PM

24 November, 2023

ever0w0 started a call that lasted 37 minutes. 24/11/2023 6:56 PM

Message @Juz_Kidding

Juz_Kidding
juz_kidding

Playing
Arknights
Arknights
Terminal
20:32:29

About Me

Member Since
May 11, 2020

Mutual Servers — 1

Mutual Friends — 2

8:32 PM
19/11/2024

Server options and Conversation channels

Chatting area

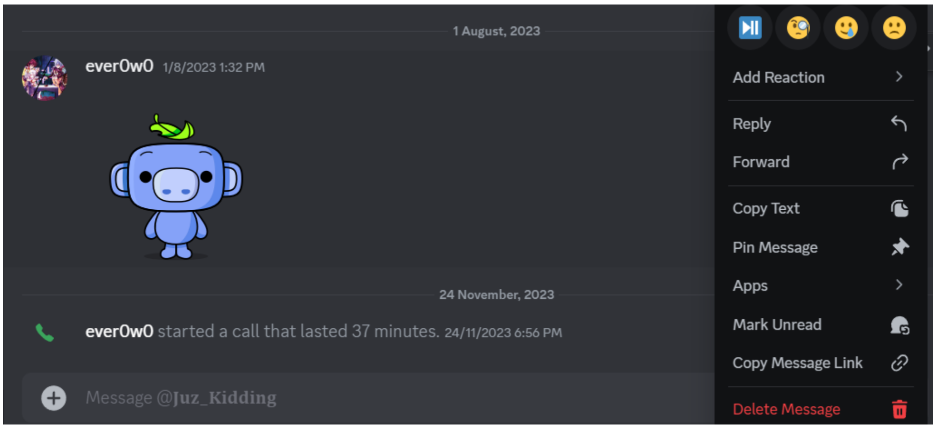
partner profile section

Figure 2.22 Main interface of Discord

Based on the main view analysis of Discord, its well-structured layout significantly enhances usability. As shown in Figure 2.22, the interface is divided into three key sections, which is server options and conversation channels for quick navigation, the chatting area in the center for real-time communication, and the partner profile section on the right, which provides user details. This logical layout makes it easy for users to locate and interact with the platform's features, creating a smooth and efficient user experience.

The server options and conversation channels provide great efficiency, it enables users to switch between channels quickly, which can minimize the time required to manage conversations. Additionally, discord offers a powerful search function, which not only allows users to find specific words but also find conversations partner to enhances effectiveness by making information retrieval quick and intuitive. For new user, the clean and straightforward design of discord provide a great experience for them to learn and navigate.

Figure 2.23 Utilities of chat area



1 August, 2023

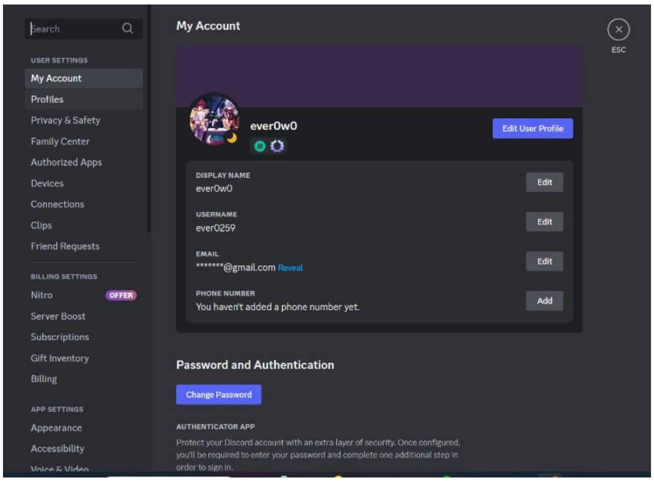
everOw0 1/8/2023 1:32 PM

24 November, 2023

everOw0 started a call that lasted 37 minutes. 24/11/2023 6:56 PM

Message @Juz_Kidding

The chatting area in the center have essential functions such as deleting messages, which can ensure the safety by allowing users to remove accidentally sent messages. This feature ensures users have control over their interactions, providing a sense of security. Furthermore, the chat area includes commonly used utilities, such as replying to messages, adding reactions, and pinning important messages, making it a multi-function and practical communication space.



My Account

everOw0

DISPLAY NAME
everOw0

USERNAME
ever0259

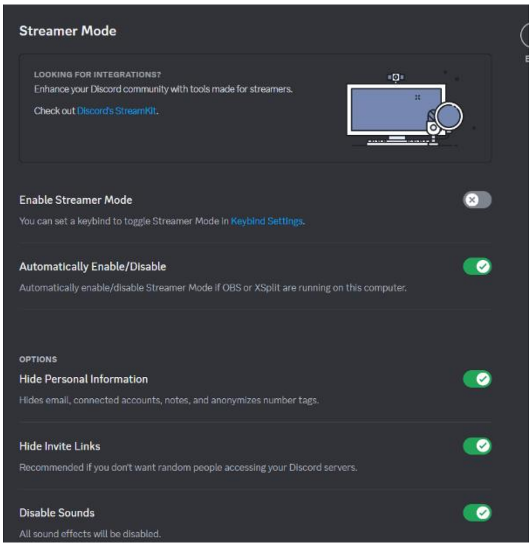
EMAIL
*******@gmail.com

PHONE NUMBER
You haven't added a phone number yet.

Password and Authentication

AUTHENTICATOR APP
Protect your Discord account with an extra layer of security. Once configured, you'll be required to enter your password and complete one additional step in order to sign in.

Figure 2.24 Setting and user profiles


Streamer Mode

LOOKING FOR INTEGRATIONS?
Enhance your Discord community with tools made for streamers.
Check out Discord's StreamKit.

Enable Streamer Mode
You can set a keybind to toggle Streamer Mode in Keybind Settings.

Automatically Enable/Disable ✓
Automatically enable/disable Streamer Mode if OBS or XSplit are running on this computer.

OPTIONS

Hide Personal Information ✓
Hides email, connected accounts, notes, and anonymizes number tags.

Hide Invite Links ✓
Recommended if you don't want random people accessing your Discord servers.

Disable Sounds ✓
All sound effects will be disabled.

Figure 2.25 Streamer Mode

According to Discord's secondary view, settings and user profiles are essential for improve the user experience. The settings menu is simple and provides features that cater to different user needs, such as streaming. For streaming, Discord provides various tools such as privacy and sound controls to improve security and performance.

For education, teachers who are server administrators can create multiple voice channels within the server and add students to these channels for discussions in pairs or small groups.[] This tool is excellent for teachers to organize activities that are otherwise unmanageable in a common voice room, effectively addressing the issue of limited student interaction [15].

Moreover, user profiles are flexible and safe as allow us to control our security and identity at every moment. The settings are simple and easy to understand, helping users manage tasks efficiently. This design also allows people from multiple fields to use Discord.

2.3 Conclusion

Discord's primary interface and secondary views show excellent usability with no major conflicts with efficiency, effectiveness, learnability, security, or practicality. Based on Discord's design, it meets the requirements of User Experience Design (UXD). Discord's layout and structure have proven that it meets the needs and expectations of users. Discord has an intuitive and easy-to-use setup, and users can navigate through features that demonstrate the simplicity of the platform.

In addition, Discord's design prioritizes user-friendly interactions, providing simplified communication tools and gaming activities to ensure that every user has a positive experience and encourages users to explore. In addition, Discord is accessible to all users through the Diversity of settings. For example, the family center, streaming mode, and developer mode demonstrate the accessibility of Discord.

In summary, Discord provides excellent interactive systems, goods, and services that users can use and enjoy.

Chapter 3.0: Solutions for Usability Problems (Task 1.4)

3.1 Review

Discord is a popular communication platform that caters to a wide range of users, including gamers, communities, and professional teams. It provides a dynamic interactive space through text, voice, video, and live streaming, allowing users to collaborate, socialize, and share content effectively [9]. Its unique features and capabilities set it apart from other communication tools, making it a favourite among users who need flexibility and efficiency.

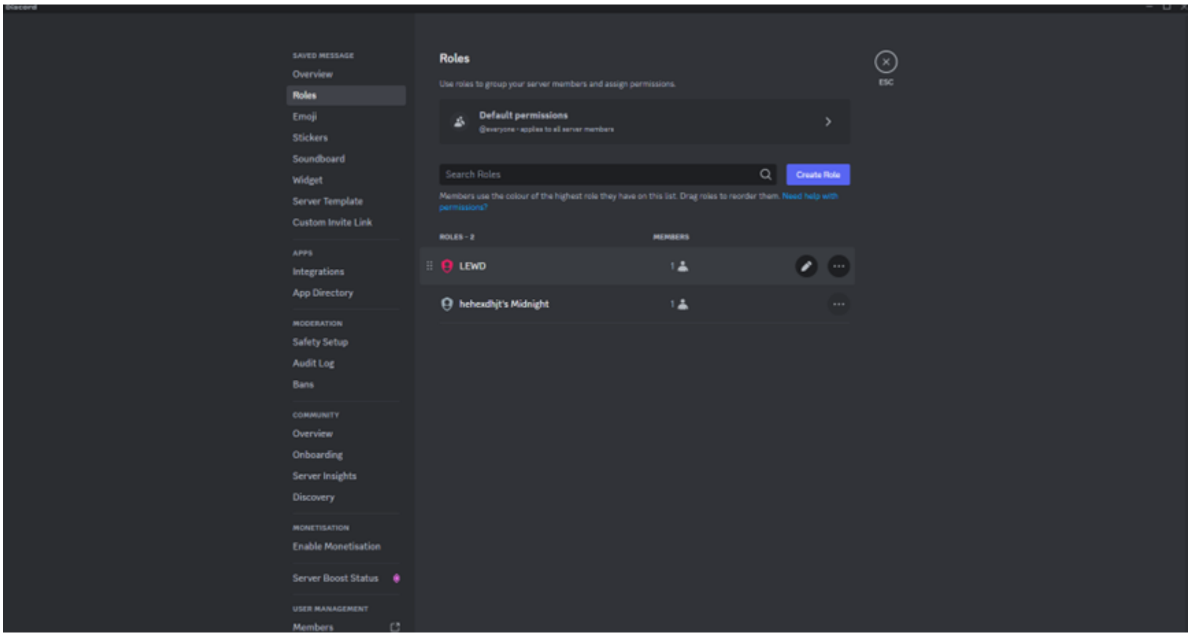
Central to Discord's design is its server-based structure, where users can create or join servers to organize their activities as each server is divided into multiple channels, providing a clear, structured environment for different types of communications [10]. Text channels support discussion and content sharing such as GIFs, photos and videos, while voice channels support real-time interaction communications. Discord also supports private messaging, enhancing its appeal as an all-in-one communication tool. In addition, Discord's integration with robots and third-party plugins expands its functionality, allowing for the automation of repetitive or specific tasks, etc., giving Discord more playability, flexibility and additional functionality [11].

However, while its powerful features provide flexibility and practicality, new users may experience a learning curve, especially when navigating advanced settings such as roles and permissions for a server. Still, Discord balances efficiency, practicality, and security while pursuing a user-centric design, making it a popular choice for a wide range of users.

3.2 Ease of Use Analysis

Efficiency

Discord's main interface is designed to be intuitive and well-organized, making it extremely efficient. Core tasks such as creating a server, managing roles or joining a text or voice channel are quick and easy to complete with just a few clicks, and the entire process can even take less than half a minute. Easy-to-access menus such as the sidebar for servers and channels, ensure that users can seamlessly switch between different servers and channels to socialize with others on different topics.



Roles

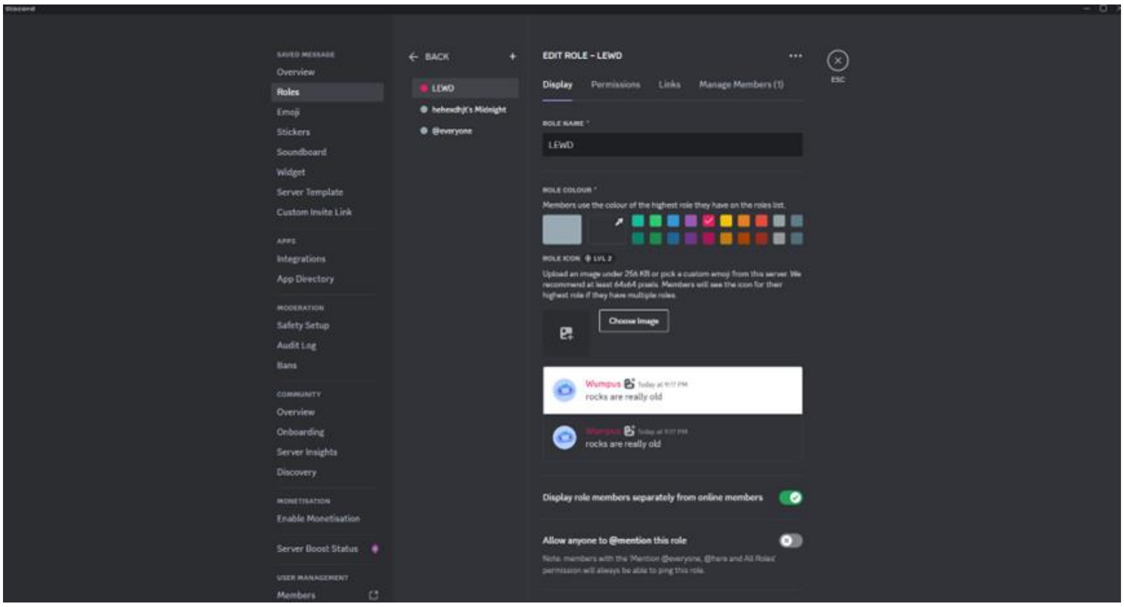
Use roles to group your server members and assign permissions.

Default permissions
@everyone · applies to all server members

Members use the colour of the highest role they have on this list. Drag roles to reorder them. Need help with permissions?

ROLES - 2	MEMBERS
LEWD	1
hehexdhjt's Midnight	1

Figure 3.1 Original Roles Interface



EDIT ROLE – LEWD

ROLE NAME *

LEWD

ROLE COLOUR *

Members use the colour of the highest role they have on the roles list.

ROLE ICON LVL 2

Upload an image under 256 KB or pick a custom emoji from this server. We recommend at least 64x64 pixels. Members will see the icon for their highest role if they have multiple roles.

Wumpus Today at 9:17 PM
rocks are really old

Wumpus Today at 9:17 PM
rocks are really old

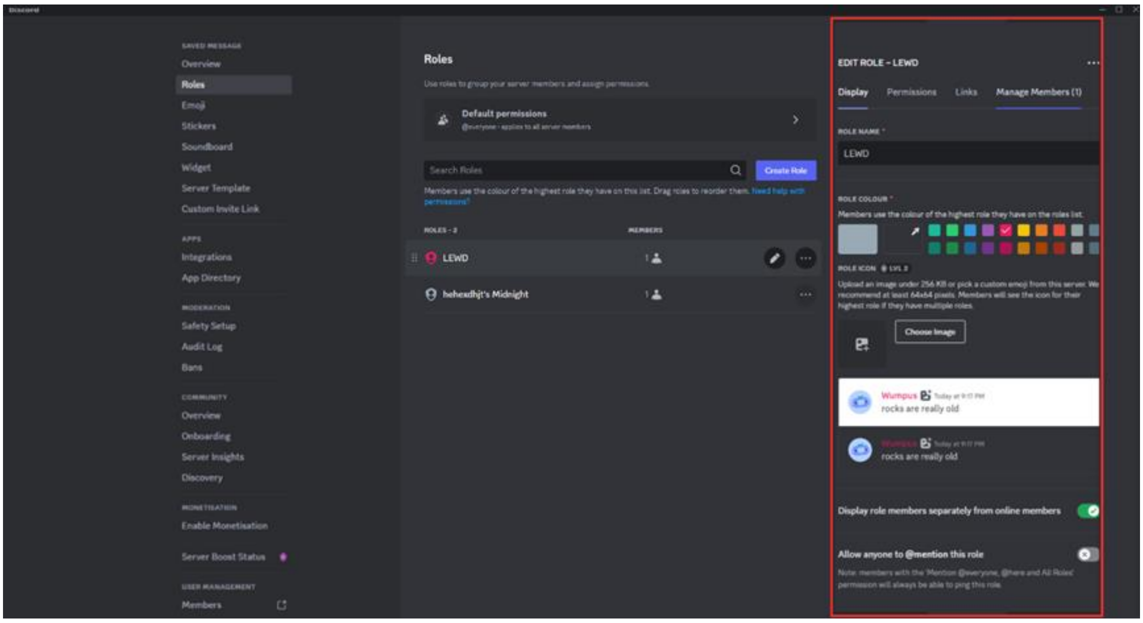
Display role members separately from online members ✓

Allow anyone to @mention this role ✗

Note: members with the 'Mention @everyone, @here and All Roles' permission will always be able to ping this role.

Figure 3.2 Original Role Configuration

After selecting one of the role at the page of Original Roles Interface (Figure 3.1), it will direct users to the next page shown as Figure 3.2 that show the advanced settings such as permissions for specific selected roles which required extra clicks when returning to the role interface page and also wasted the excessive spaces at the both side of the screen, make it feels empty and compact at the same time.



Roles

Use roles to group your server members and assign permissions.

Default permissions
@everyone · applies to all server members

Members use the colour of the highest role they have on this list. Drag roles to reorder them. Need help with permissions?

ROLES – 2	MEMBERS
LEWD	1
hehexdhjt's Midnight	1

EDIT ROLE – LEWD

ROLE NAME *

LEWD

ROLE COLOUR *

Members use the colour of the highest role they have on the roles list.

ROLE ICON LVL 2

Upload an image under 256 KB or pick a custom emoji from this server. We recommend at least 64x64 pixels. Members will see the icon for their highest role if they have multiple roles.

Wumpus Today at 9:17 PM
rocks are really old

Wumpus Today at 9:17 PM
rocks are really old

Display role members separately from online members ✓

Allow anyone to @mention this role ✗

Note: members with the 'Mention @everyone, @here and All Roles' permission will always be able to ping this role.

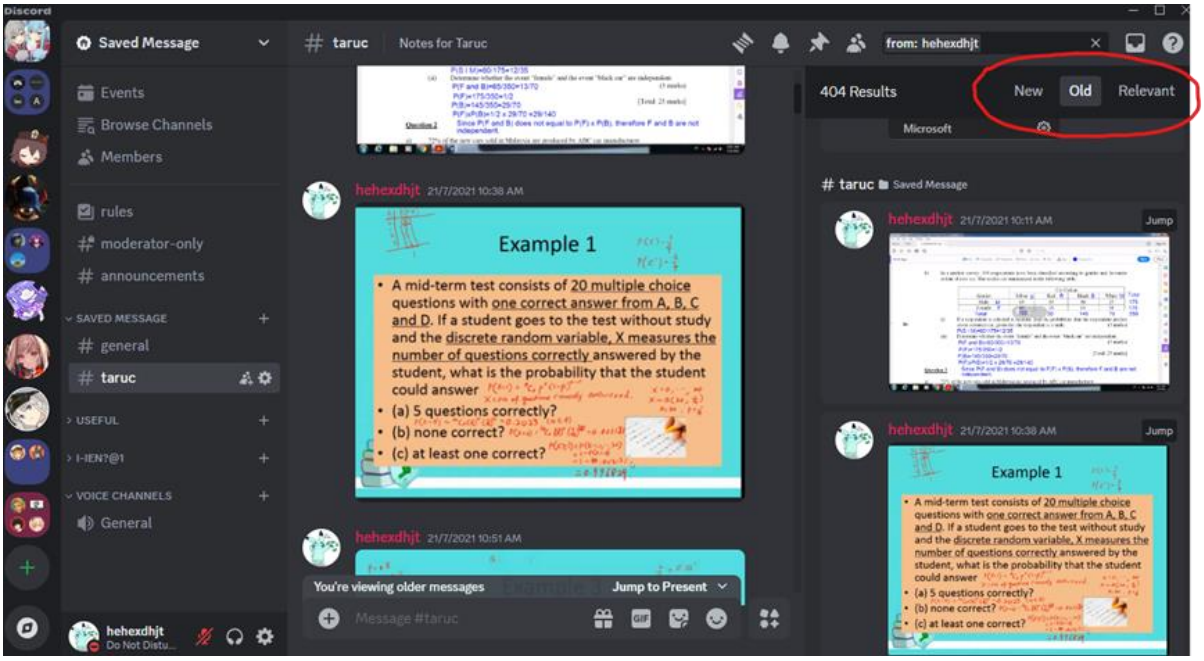
Figure 3.3 Edited Roles Interface

In the edited role interface, Discord can display the role's advanced settings directly on the right side of the role list without the need to enter a new page to configure settings to improve efficiency. This is very helpful, especially when the user suddenly wants to create a new role in the middle of the role settings configuration, the user can just click the "*Create Role*" button without returning to the role interface page, which will save some clicks and time. However, users can still enter the original role configuration page by clicking the button designed in the drop-down list next to each role.

If a large server has many roles and needs to use the search function to find a specific role quickly, this edited role interface will effectively improve user's experience because the user can search for it and adjust the specific role settings in one single page without returning to the main role interface because when multiple role settings need to be adjusted, the original design will waste a lot of time. Overall, this alternative design should have the same particular design effect as Discord or have some minor improvements compared to the original design.

Effectiveness

Discord’s message search and search bar feature is a key feature that reflects both the efficiency of the platform and its commitment to providing well-organized information. The search bar is located at the top of the interface and is designed to help users find messages, files, or even conversations sent by a specific user at a specific time across multiple channels in a server, without scrolling up endlessly to find a message which saving a lot of time and effort.



hehexdhjt 21/7/2021 10:38 AM

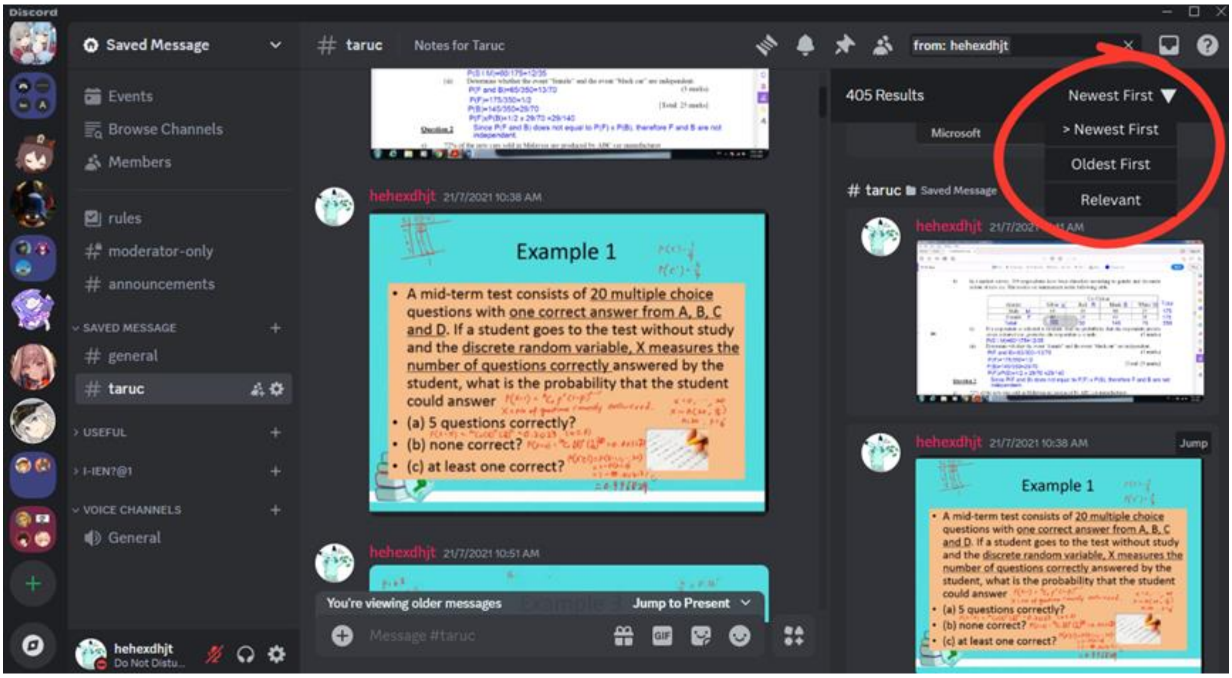
Example 1

- A mid-term test consists of 20 multiple choice questions with one correct answer from A, B, C and D. If a student goes to the test without study and the discrete random variable, X measures the number of questions correctly answered by the student, what is the probability that the student could answer
- (a) 5 questions correctly?
- (b) none correct?
- (c) at least one correct?

hehexdhjt 21/7/2021 10:51 AM

hehexdhjt 21/7/2021 10:11 AM

Figure 3.4 Original Design of Search Filter



Example 1

- A mid-term test consists of 20 multiple choice questions with one correct answer from A, B, C and D. If a student goes to the test without study and the discrete random variable, X measures the number of questions correctly answered by the student, what is the probability that the student could answer
- (a) 5 questions correctly?
- (b) none correct?
- (c) at least one correct?

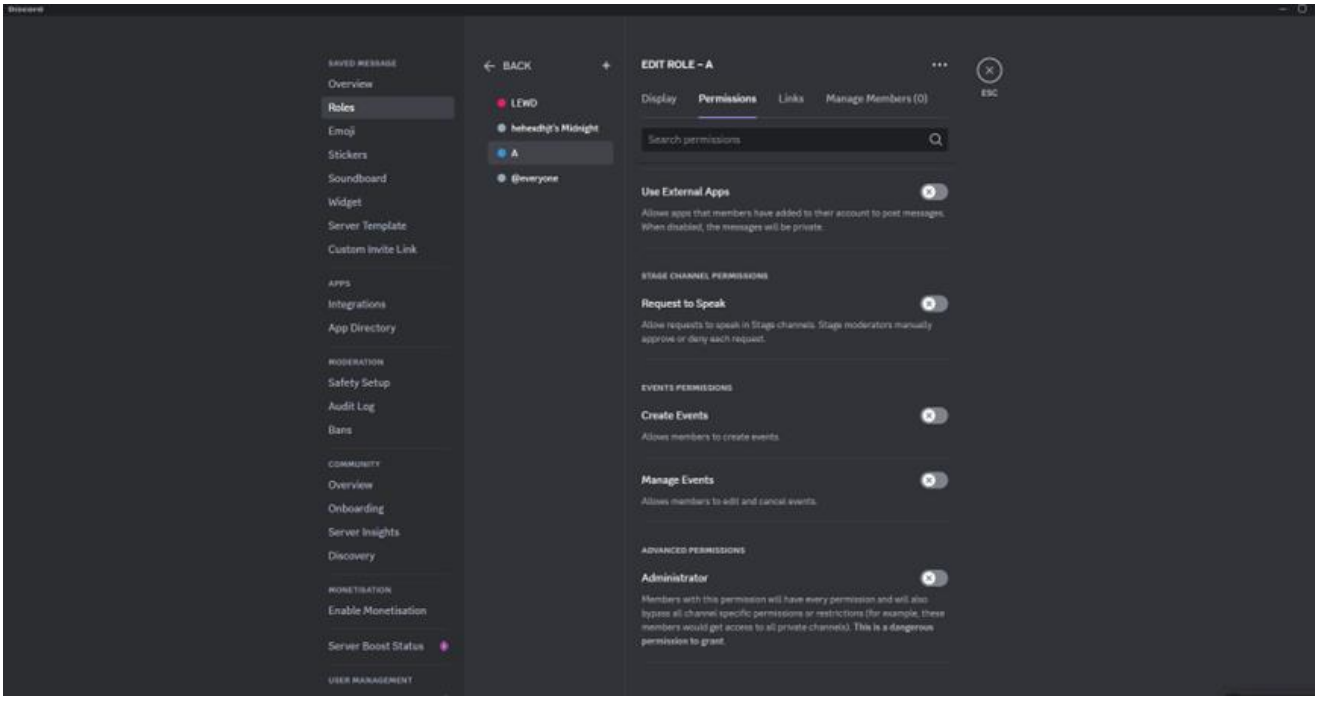
Figure 3.5 Alternative Design of Search Filter

The current search chat function in Discord as shown in Figure 3.4 offers three filters: *New, Old, and Relevant*. While functional, this existing design could benefit from a minor improvement to enhance usability and reduce potential confusion. By simplifying the options into a dropdown menu with the labels *Newest First, Oldest First, and Relevant (sort the results based on the closest match)* as shown in Figure 3.5, Discord can achieve a more intuitive user experience.

The existing three-filter approach provides essential sorting options, but the labels *New* and *Old* may be ambiguous for some users. For instance, "*New*" could be interpreted as showing only the newest messages, while "*Old*" might imply only older messages, instead of indicating sorting order. Additionally, the lack of explicit phrasing such as *New* or *Old* might cause confusion among new users which unfamiliar with Discord's search function.

Learnability

While Discord is very user-friendly for tech-savvy users, new users may have difficulty using some advanced features, such as managing servers, and role permissions and hierarchies. Due to the plethora of options and lack of guidance, new users may take longer to navigate and use features such as setting permissions even with each permission’s description. New users' misconfiguration of role permissions may harm their server by granting random admin permissions to "break" the server, such as unauthorized deletion of channels with large amounts of content and conversations.



Use External Apps
Allows apps that members have added to their account to post messages. When disabled, the messages will be private.

STAGE CHANNEL PERMISSIONS

Request to Speak
Allow requests to speak in Stage channels. Stage moderators manually approve or deny each request.

EVENTS PERMISSIONS

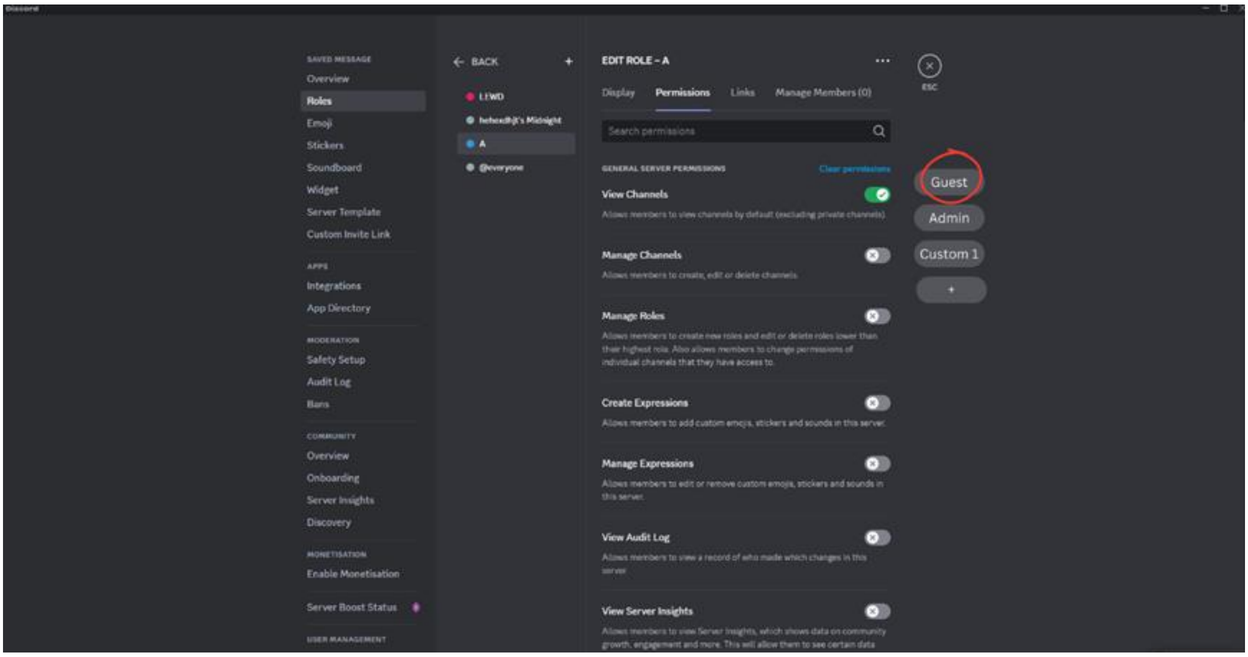
Create Events
Allows members to create events.

Manage Events
Allows members to edit and cancel events.

ADVANCED PERMISSIONS

Administrator
Members with this permission will have every permission and will also bypass all channel specific permissions or restrictions (for example, these members would get access to all private channels). **This is a dangerous permission to grant.**

Figure 3.6 Original Interface



EDIT ROLE – A

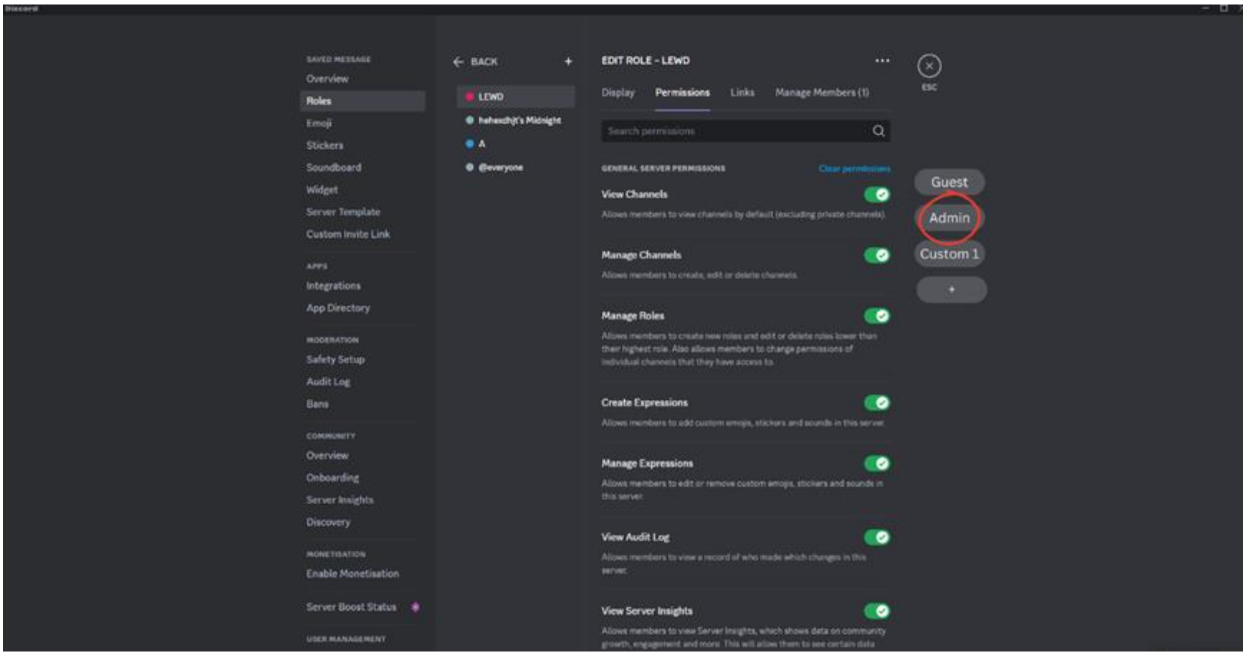
Display | Permissions | Links | Manage Members (0)

Search permissions

GENERAL SERVER PERMISSIONS — Clear permissions

- View Channels ✓ — Allows members to view channels by default (excluding private channels).
- Manage Channels ✗ — Allows members to create, edit or delete channels.
- Manage Roles ✗ — Allows members to create new roles and edit or delete roles lower than their highest role. Also allows members to change permissions of individual channels that they have access to.
- Create Expressions ✗ — Allows members to add custom emojis, stickers and sounds in this server.
- Manage Expressions ✗ — Allows members to edit or remove custom emojis, stickers and sounds in this server.
- View Audit Log ✗ — Allows members to view a record of who made which changes in this server.
- View Server Insights ✗ — Allows members to view Server Insights, which shows data on community growth, engagement and more. This will allow them to see certain data

Figure 3.7 Edited Interface, Preset Permission for Guest/Member



EDIT ROLE – LEWD

Display | Permissions | Links | Manage Members (1)

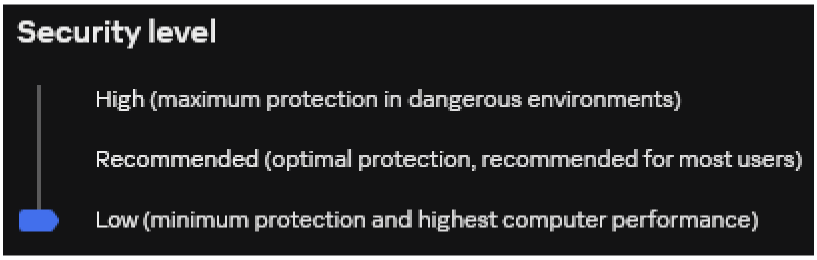
Search permissions

GENERAL SERVER PERMISSIONS — Clear permissions

- View Channels ✓ — Allows members to view channels by default (excluding private channels).
- Manage Channels ✓ — Allows members to create, edit or delete channels.
- Manage Roles ✓ — Allows members to create new roles and edit or delete roles lower than their highest role. Also allows members to change permissions of individual channels that they have access to.
- Create Expressions ✓ — Allows members to add custom emojis, stickers and sounds in this server.
- Manage Expressions ✓ — Allows members to edit or remove custom emojis, stickers and sounds in this server.
- View Audit Log ✓ — Allows members to view a record of who made which changes in this server.
- View Server Insights ✓ — Allows members to view Server Insights, which shows data on community growth, engagement and more. This will allow them to see certain data

Figure 3.8 Edited Interface, Preset Permission for Administrative

The current role permissions configuration page in Discord is very comprehensive, but can be time-consuming and difficult to understand, especially for new users or users unfamiliar with its functionality. Manually assigning permissions to each role often requires navigating multiple settings and understanding specific permissions, which can hinder some users from effectively managing their servers. To address these challenges, we can add some preset options or buttons to the right side of role configuration page. These presets will simplify the process by providing predefined permission sets for common roles (such as guests, members, and administrators), as well as the ability for users to create and save their own custom presets for easy future reuse.



Security level

High (maximum protection in dangerous environments)

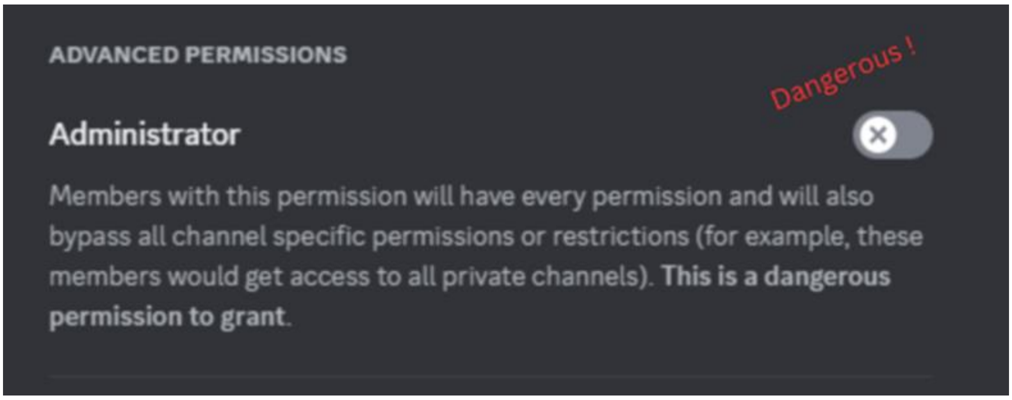
Recommended (optimal protection, recommended for most users)

Low (minimum protection and highest computer performance)

Figure 3.9 Three preset of security level from Kaspersky Endpoint Security

This proposed alternative design of preset option for Discord's role permission configuration is inspired by the *Change Security Level* feature in Kaspersky Endpoint Security, as shown in Figure 3.9. In Kaspersky, users can quickly apply predefined security levels, such as *High*, *Recommended* or *Low*, which automatically adjusts a set of configurations to meet specific needs for most people [12]. This kind of design idea simplifies complex settings, allowing users to apply the most suitable security level without manually toggling numerous protection options. Similarly, the preset option for Discord roles would allow administrators to apply predefined configurations, such as *Guest* or *Admin*, to assign permissions quickly.

Safety



ADVANCED PERMISSIONS

Administrator

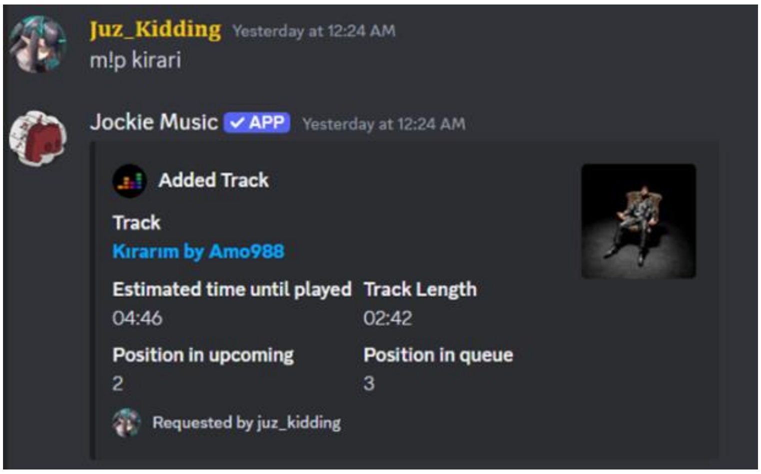
Dangerous !

Members with this permission will have every permission and will also bypass all channel specific permissions or restrictions (for example, these members would get access to all private channels). **This is a dangerous permission to grant.**

Figure 3.10 A powerful permission with extra red text warning

Discord's permission system is a powerful tool that allows server administrators to manage roles and their access levels. While robust, the system's complexity can lead to accidental misconfiguration, especially when users interact with sensitive permissions such as Administrator. These permissions grant unrestricted control, which, if assigned improperly, can compromise server security or functionality. Currently, Discord labels and mentioned such permissions as dangerous in their descriptions, but this warning is not visually distinct, making it easy for users to overlook. Thus, adding a red text **"Dangerous!"** label as shown in Figure 3.10, beside those administrative permissions that require extra caution.

Discord generally supports user safety, but certain areas can lead to errors. For instance, when users add songs via bots, there is no immediate confirmation step before processing. This can result in accidental actions, such as queueing and playing the wrong song.



Juz_Kidding Yesterday at 12:24 AM
m!p kirari

Jockie Music ✓ APP Yesterday at 12:24 AM

Added Track

Track
Kırarım by Amo988

Estimated time until played
04:46

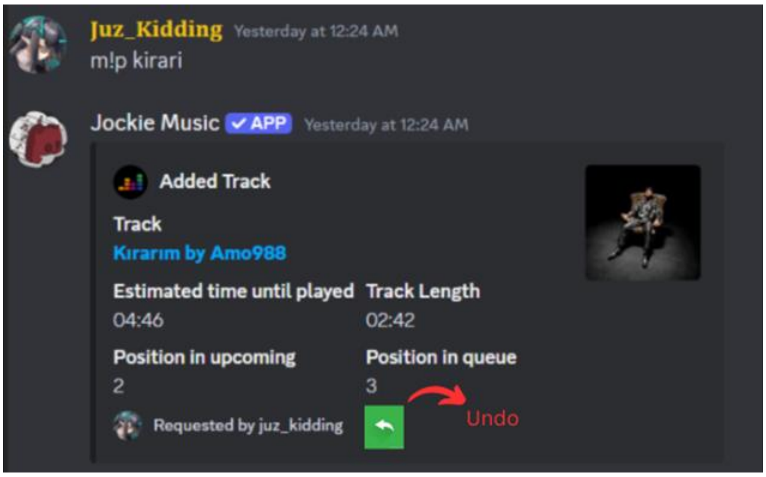
Track Length
02:42

Position in upcoming
2

Position in queue
3

Requested by juz_kidding

Figure 3.11 Original command dialog box



Juz_Kidding Yesterday at 12:24 AM
m!p kirari

Jockie Music ✓APP Yesterday at 12:24 AM

Added Track

Track
Kırarım by Amo988

Estimated time until played
04:46

Track Length
02:42

Position in upcoming
2

Position in queue
3

Requested by juz_kidding

Undo

Figure 3.12 An "Undo" button in edited command dialog box

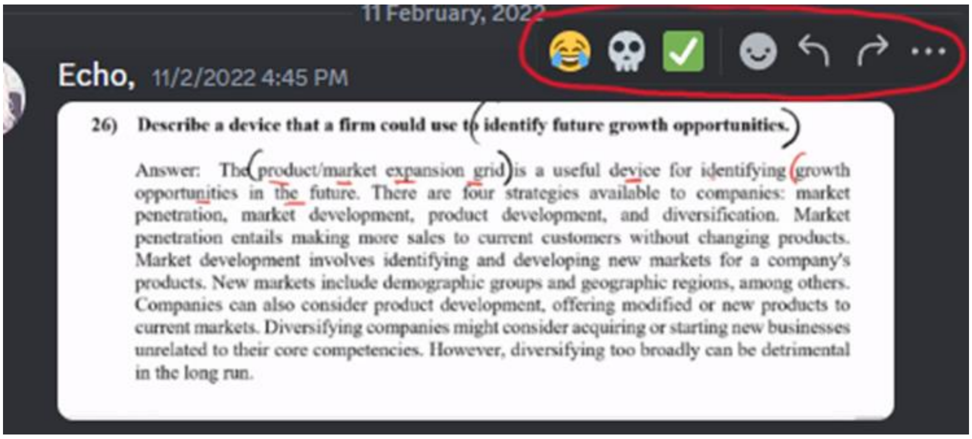
When adding a song, show a preview of the selected track and ask for confirmation *(e.g., "Do you want to add [song name] to the playlist?")* before playback begins, while user can simply use simple command to confirm it such as “*m!yes/no*” to decide it, in this case. Besides, we can also add a button “*Undo*” at the bottom of the bot dialog box (Figure 3.12) after executing a command for quick error recovery to cancel the previous command execution if a mistake is made, which similar to *undo* feature in Microsoft Word which allows to erase the previous actions or words typed [13].

Utility

Discord has successfully implemented several key message functionalities—*Reply*, *Edit*, *Delete*, *Pin*, and *Add Reaction*. Each of these features serves a distinct purpose in daily communication:

1. Reply:
   The *Reply* function allows users to respond directly to specific messages, maintaining context in conversations. This is especially useful in busy servers, where messages may get buried quickly.
2. Edit:
   The *Edit* function enables users to correct mistakes in their messages, such as typos or inaccurate information. This feature is straightforward to use, as it's readily accessible and provides a seamless editing experience.
3. Delete:
   The *Delete* function lets users remove messages they no longer wish to keep visible. While the shortcut button for this function is limited to roles with elevated permissions *(e.g., admins),* it is integral to maintaining clean and organized conversations.
4. Pin:
   The *Pin Message* function helps users highlight important messages, making them easily retrievable for future reference. Pinned messages are conveniently stored in a separate section, improving usability for tasks like tracking rules, or critical announcements.
5. Reaction:
   The *Add Reaction* function enhances the expressiveness of conversations by allowing users to react to messages with emojis. It is prominently displayed as a shortcut button, reflecting its frequent use and importance in informal and community-based discussions.

Discord's message shortcut buttons, such as message functionalities mentioned above, provide users with convenient access to frequently used functions. The existing shortcut buttons design layout reduces the need for additional actions, such as right-clicking messages to find these options. However, not all functions, such as *Copy*, are included in this quick-access area, which may inconvenience users who use these functions regularly.



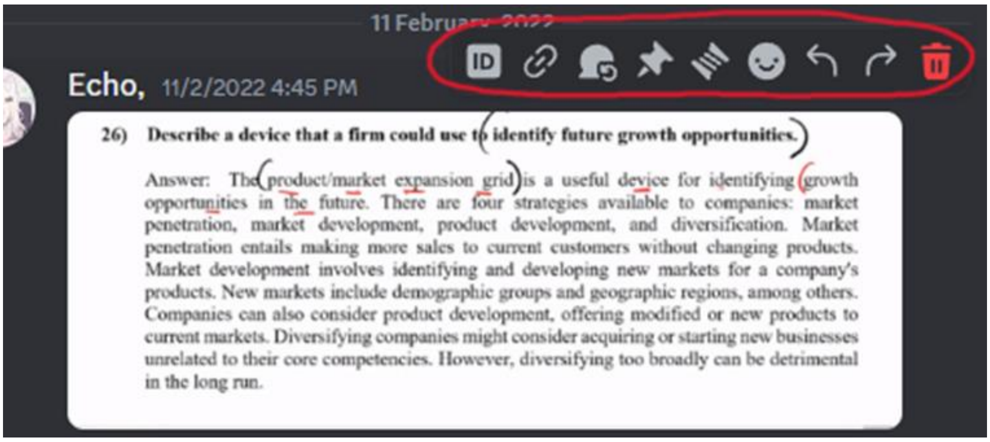
11 February, 2022

Echo, 11/2/2022 4:45 PM

26) **Describe a device that a firm could use to identify future growth opportunities.**

Answer: The product/market expansion grid is a useful device for identifying growth opportunities in the future. There are four strategies available to companies: market penetration, market development, product development, and diversification. Market penetration entails making more sales to current customers without changing products. Market development involves identifying and developing new markets for a company's products. New markets include demographic groups and geographic regions, among others. Companies can also consider product development, offering modified or new products to current markets. Diversifying companies might consider acquiring or starting new businesses unrelated to their core competencies. However, diversifying too broadly can be detrimental in the long run.

Figure 3.13 Few shortcut buttons appear when hovering message



11 February, 2022

Echo, 11/2/2022 4:45 PM

26) **Describe a device that a firm could use to identify future growth opportunities.**

Answer: The product/market expansion grid is a useful device for identifying growth opportunities in the future. There are four strategies available to companies: market penetration, market development, product development, and diversification. Market penetration entails making more sales to current customers without changing products. Market development involves identifying and developing new markets for a company's products. New markets include demographic groups and geographic regions, among others. Companies can also consider product development, offering modified or new products to current markets. Diversifying companies might consider acquiring or starting new businesses unrelated to their core competencies. However, diversifying too broadly can be detrimental in the long run.

Figure 3.14 More shortcut buttons appear when hovering message + pressing "Shift"

The existing shortcut button layout focuses on commonly used features, streamlining the process for actions like replying, forwarding or reacting to messages as shown in Figure 3.13 and 3.14. However, this design assumes a one-size-fits-all approach, prioritizing universal functionalities over individual preferences and unable to customize. As a result: Users must right-click messages to access functions like *Copy*, or *Report Message*, while less frequent used functions such as *Copy Message ID* cannot be modified or replaced with other shortcut functions, which increases effort for frequently used actions not included as shortcuts. Also, the shortcut buttons do not cater to individual user preferences, which limits the system's flexibility in addressing diverse user needs.

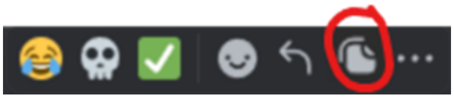


Figure 3.15 Existing "Forward" should be able to customize to "Copy"

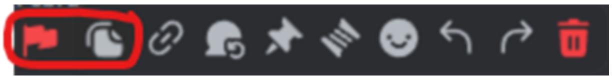


Figure 3.16 Existing "Copy Message ID" has been customized to "Copy" and a new shortcut button "Report Message" added to the beginning of the layout

Discord could introduce a customizable shortcut button feature, allowing users to personalize which functions appear as quick-access buttons beside messages. For example, Discord can add a "Shortcut Settings" option in the user settings menu or within the chat settings panel so that users can drag and drop preferred functions from a list (e.g., *Copy*, *Edit*, *Pin, Forward, Report Message*) into the shortcut bar configuration for customization. Discord should also allow users to reorder buttons by dragging the button and sorting by personal preference for optimal convenience based on their workflow. Example shortcut buttons layout shown in Figure 3.15 and 3.16.

In this way, frequently used functions like *Copy* would be immediately accessible, saving users time and effort. Also, customization empowers users to tailor the interface to their needs, making Discord more intuitive and efficient.

Reference

[1] M. Rosoff, “This 26-Year-Old Just Sold His Company For $104 Million,” *Business Insider*. https://www.businessinsider.com/this-26-year-old-just-sold-his-company-for-104-million-2011-5

[2] N. Gisonna, “Discord | History, Features, & Facts | Britannica,” www.britannica.com, Jan. 17, 2024. https://www.britannica.com/topic/Discord

[3] “The Evolution of Discord Logo: A Journey through History,” Designhill, Jun. 05, 2024. https://www.designhill.com/design-blog/the-evolution-of-discord-logo-a-journey-through-history/

[4] K. Browning, “How Discord, Born From an Obscure Game, Became a Social Hub for Young People,” *The New York Times*, Dec. 29, 2021. Available: https://www.nytimes.com/2021/12/29/business/discord-server-social-media.html

[5] “Channel Categories 101,” *Discord*, Sep. 21, 2020. https://support.discord.com/hc/en-us/articles/115001580171-Channel-Categories-101 (accessed Nov. 20, 2024).

[6] “Beginner’s Guide to Discord,” *Discord*, Sep. 30, 2024. https://support.discord.com/hc/en-us/articles/360045138571-Beginner-s-Guide-to-Discord

[7] ByteByteGo, “How Discord Serves 15-Million Users on One Server,” *blog.bytebytego.com*. https://blog.bytebytego.com/p/how-discord-serves-15-million-users

[8] J. Vass, “How Discord Handles Two and Half Million Concurrent Voice Users using WebRTC,” *discord.com*, Sep. 10, 2018. https://discord.com/blog/how-discord-handles-two-and-half-million-concurrent-voice-users-using-webrtc

[9]J. Minor, “What Is Discord and How Do You Use It?,” *PCMAG*, Mar. 13, 2024. https://www.pcmag.com/explainers/what-is-discord-and-how-do-you-use-it

[10]Team TBH, “The Social Revolution: Examining the Popularity of Discord,” *The Brand Hopper*, Jul. 2023. https://thebrandhopper.com/2023/07/01/the-social-revolution-examining-popularity-of-discord/ (accessed Nov. 23, 2024).

[11] Locke, "Amplify Your Discord Experience with These Awesome AI Apps," *Discord.com*, Oct. 25, 2024. https://discord.com/blog/awesome-ai-apps-bots-amplify-your-discord-experience (accessed Nov. 23, 2024).

[12]"Changing the security level," *Kaspersky.com*, 2024. https://support.kaspersky.com/keswin/11/en-us/40777.htm (accessed Nov. 23, 2024).

[13]"Undo or redo typing or design changes - Microsoft Support," *support.microsoft.com*. https://support.microsoft.com/en-us/office/undo-or-redo-typing-or-design-changes-6b4ab13a-32a7-427f-8dbc-a076ae2e6132

[14]G. Uong, T. T., Nguyen, K. D., & Nguyen, N. H. (2020, 7 20). International Journal of TESOL & Education. *Teachers' Feedback on Using Discord as an Online Learning Platform*, *2*(4), 86. https://doi.org/10.54855/ijte.22246

[15]Nhon H. Nguyen, Khoi D. Nguyen, Vietnamese Learners' Performance in The IELTS Writing Task 2 , International Journal of TESOL & Education: Vol. 2 No. 1 (2022): Volume 2, Issue 1