Guide to using Discord for university courses

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BEFORE YOU START

Target audience

This document is intended for teachers and teaching assistants (TAs) who intend to use Discord to provide support to students, communicate between teachers and TAs, and to create an online space where students can work together. We will cover not only how to use Discord, but also the reasons for choosing Discord, the pitfalls of using Discord, and what choices you should consider before setting up Discord.

Why use Discord?

Discord is a free online communications platform that enables the creation of spaces (called servers) which allow both textual communication and audio-visual communication. Discords enables conversations within a server to be categorized in any number of channels. The use of voice channels allows students to work together online while also allowing teachers and teaching assistants to join these channels to provide support similar to how a TA might be called over to a table where students are working in a classroom.

Important considerations

The university website on cybersecurity mentions that Discord should not be used for several reasons:

> *"The UT considers Discord not suitable to use due to privacy and security implications. Using Discord has a number of consequences for privacy and security, such as:*

- *Discord collects a lot of personal data (such as VOIP data, content of what is sent through chats, IP address and activity);*
- *Personal data is sold to third parties;*
- *Personal data will also be used for other (marketing) purposes;*
- *Discord does not offer standard end-to-end encryption."*

Because of this, if you do decide to use Discord for your course it is best to minimise the personal data that is shared through Discord. Since, in most cases, it is desirable to be able to identify students on Discord it is common to enforce the use of real names on Discord. Since this is personal data, it is likely that this along with the collection of chats and IP addresses is indeed a violation of the GDPR. Therefore, it is important that students are made aware of these concerns and have the option to opt out of using Discord for a course. I am not a lawyer; I do not know if this avoids the university's responsibility under GDPR. For now, this has been our modus operandi since 2020.

Alternatives

Given the abovementioned issues with Discord it is pertinent to discuss the alternatives that are available. Some of these (namely, Microsoft Teams, Slack, Zulip, Jitsi, Zoom, and Google Hangouts) have already been used by courses at this university. There are also many other platforms (such as RocketChat and Mattermost) which I have not investigated.

Microsoft Teams

The equivalent of a Discord server in Microsoft Teams is called a team. While such teams only contain text channels it is possible to start a meeting inside such a text channel which essentially makes it a voice channel. Similarly, to Discord Teams provides a way to make different channels accessible to different people. However, it is not possible to automate this process with a bot. The API available to write apps and bots for Teams is more limited than the one that exists for Discord. Despite this, Microsoft Teams is an excellent alternative for Discord, especially for courses which do not need all the features of Discord or have only a small number of students. None of the privacy concerns that apply to Discord are applicable here and all students already have a university-provided Teams account. One unique feature of Microsoft Teams is its many apps which are available by default. Such apps include tight integration with the Microsoft Office suite allowing teams to function as a SharePoint/OneDrive where students can work on documents together.

Slack

Slack is in many ways similar to Microsoft Teams, it is GDPR compliant, it has text channels in which "huddles" can be started which turn them into voice channels, and a wide range of available apps which can extend its functionality. Unlike Discord it does cost money to have a Slack workspace (its equivalent of servers/teams) and unlike Microsoft Teams the university is, as far as I know, not already paying for it.

Matrix

Matrix is an open-source protocol which has similar features to Slack. However, it is straightforward to self-host which would allow the university to keep all data on its own servers. Currently, Matrix is missing some of the features which make the other alternatives attractive such as integrated voice channels and it is currently comparatively complicated for students to join a self-hosted matrix server. However, it is likely that these problems will be fixed over the coming years, it is therefore wise to re-evaluate the potential of this option at some point in the future.

Zulip

Zulip is in many ways similar to Matrix although its onboarding is likely easier for students in its current state. Zulip only supports text channels (called streams), but it has using webhooks/bots been used along with Jitsi and Zoom to "add" voice chat functionality. At least one course has already had a self-hosted instance Zulip which was used in this manner. In my opinion, Zulip's streams can be a bit harder to follow and understand than the alternatives offered by the likes of Matrix, Slack, and Discord.

Jitsi, BigBlueButton, Zoom & Google Hangouts

These platforms only allow video/voice calls and limited direct chat messages. As such they do not provide the same service as Discord and others that support text channels. However, these platforms can be used to supplement the other platforms which only support text channels.

USING DISCORD

General usage

Start by making an account at discord.com/register. You can download the desktop application, the app for your phone or use Discord from the browser. After doing so you can join a Discord server by clicking on a link that is shared with you by whoever created the Discord server.

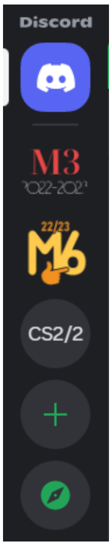
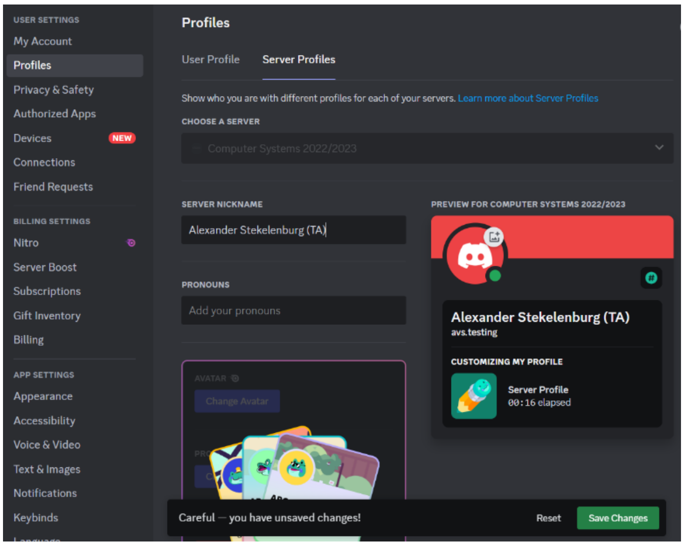


Figure 2 Selecting a server



Profiles

Show who you are with different profiles for each of your servers. Learn more about Server Profiles

CHOOSE A SERVER: Computer Systems 2022/2023

SERVER NICKNAME: Alexander Stekelenburg (TA)

PRONOUNS: Add your pronouns

PREVIEW FOR COMPUTER SYSTEMS 2022/2023

Alexander Stekelenburg (TA)
avs.testing

CUSTOMIZING MY PROFILE
Server Profile
00:16 elapsed

Careful — you have unsaved changes!

Figure 1 Setting your nickname

After joining the server, you may want to change your username in that specific server. To do this open the settings, go to Profiles -> Server Profiles, select the server you just joined and change the username. We often use a combination of your full name and your role so that it is clear for everyone who you are. In my case this would be: "Alexander Stekelenburg (TA)".

If you have joined multiple servers, you can select which one you want to look at from the list on the left. Once someone has granted you access to the channels you can click any channel in the list on the left to read the messages there and send any yourself.

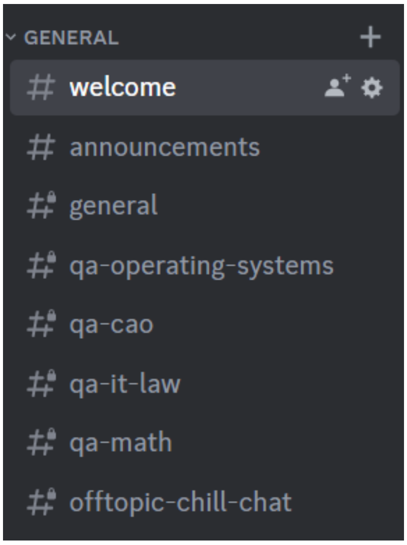
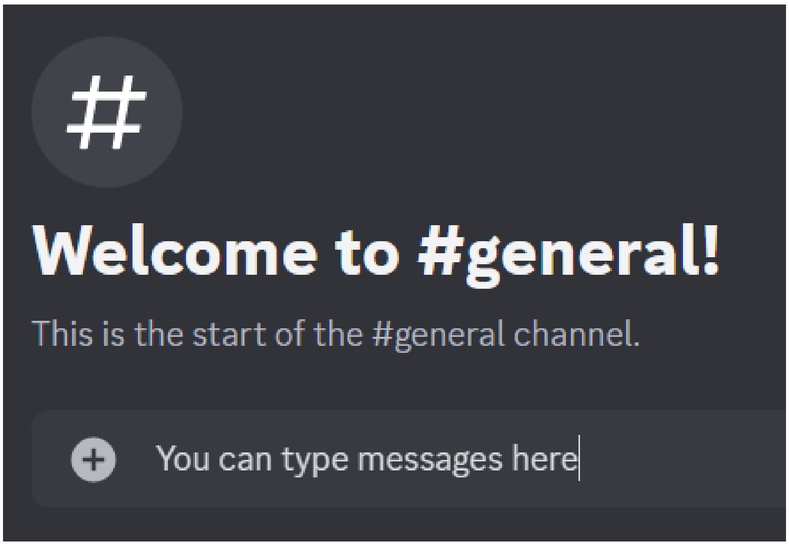


Figure 3 Selecting a channel

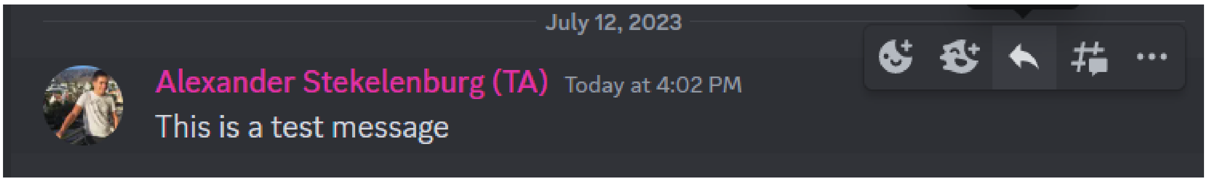


Welcome to #general!

This is the start of the #general channel.

You can type messages here

Figure 4 Sending a message



July 12, 2023

Alexander Stekelenburg (TA) Today at 4:02 PM

This is a test message

Figure 5 Replying to a message or adding a reaction

If you hover over any message, you can click a button to add an emoji as a reaction to any message, this is useful to provide your reaction to something without sending someone a notification. By default, when you send a message this will not send a notification. (It will only mark the channel as having an unread message) However, if you do want to get someone's attention you can mention them in your message by typing an @ and then their name (make sure to click their name when it is suggested otherwise it will not work.

You can do the same thing for a larger group of people by mentioning a role (such as @Student), @here (will notify anyone who is online), or @everyone (will notify everyone). To indicate what message, you are replying to you can hover over the message and click the reply symbol. By default, this also acts as if you @-mentioned the sender of that message in your reply. When you click a voice channel you will automatically join the channel, your microphone will be on by default. You can click the channel again (or click its name in the bottom-left corner) to focus it allowing you to see any people who might have their webcams turned on or who are sharing their screen. To do either of those things you can use the button in the bottom-left-corner.

Setting up a Discord server

Before setting up a Discord server for your course it is important to consider how it will be used, there are some common setups.

The base

No matter how the Discord server is used its basic structure usually looks like this:

Category "General"
    Text Channel "welcome"
    Text Channel "announcements"
    Text Channel "general"
    Text Channel "offtopic-chill-chat"
Category "Teacher's Lounge"
    Text Channel "ta-general"
    Text Channel "session-rescheduling"
    Text Channel "errata"
    Text Channel "server-management"
    Text Channel "botcommands"

The "General" category is visible to everyone and is usually the only category visible to students. The "welcome" channel usually contains a single welcome message which is the first thing that anyone joining the server will see. The "announcements" channel is used only by our Discord bot Ptah. It relays any announcements sent on canvas to that channel. The "general" channel is for any course-related questions and discussions that do not fit into any other channel. The "offtopic-chill-chat" is meant for students to socialize, it is useful to relegate this to a separate channel since those that are not interested can simply mute it. (The option to mute a channel is found by right-clicking it in the channel list)

The ”Teacher’s Lounge” category is only visible to Teachers and TAs, similarly to the “General”’ category’s “general” channel there is a “ta-general” category meant for any general information and questions that are relevant to the teaching staff. The “session-rescheduling” channel is used by TAs to offer up practicals and other TA tasks for others to take over in case they are sick or otherwise prevented from doing their job. The “errata” channel is used to collect feedback about the course and may be used to improve future iterations. The “server-management” channel is usually further restricted to those with Discord administrator rights only and is used to discuss issues related to setting up and managing the server. Finally, the “botcommands” channel is used to issue commands to the Ptah Discord bot. The “Using the Ptah Discord bot” section will discuss how that works.

Information and discussion only

These servers tend to only have text channels which allow students to discuss and ask questions. The basic channel structure looks like the base server described above with additional text channels in the “General” and “Teacher’s Lounge” categories for separate subjects that can be discussed. Deciding how to split a course’s subjects among channels of course differs a lot per course. The text channels in the “General” category are for discussions between students and asking questions to TAs and teachers. The text channels in the “Teacher’s Lounge” category are for TAs and teachers to discuss and ask questions amongst themselves.

Online and hybrid tutorials

Discord servers can also be used to facilitate tutorials. There are two different ways in which this is usually set up which I will call the table system and the Horus system. Both of these entail adding a number of voice channels to the server, generally you want enough so that every group of students that work together can have their own channel. We usually split these channels up into categories of at most 25 channels to make the list of channels easier to navigate. It can be a hassle to create such large amounts of channels, which is why the bot offers commands to automate this, more information on this can be found in the “List of commands”

The table system works through the use of a queue channel, students can send a message in this channel indicating they have a question, and they will include the number of the voice channel in which they are working. TAs can mark the message with a reaction to indicate they’ve taken the question and then they can join the voice channel and help out. Some servers use multiple different queue channels for different topics and the system can be used for offline tutorials too if you have a separate offline queue channel and number the real tables in your room.

The Horus system makes use of an external queuing system like Horus. (Or perhaps ta-help.me would also work) Students enter a queue on Horus and a TA accepts them just like they would in an offline session. However, instead of the student raising their hand the TA will copy their name from the screen and paste it into the “botcommands” channel. The Ptah bot will then locate the student and move the TA to their voice channel. For this to work you need to ensure that students have the same name on Canvas/Horus and on Discord, more on how this can be achieved is covered in the “Intake” section.

Which of these two systems works best depends on the course. The table system is very easy to work with, but it does not scale well for larger amounts of students and TAs. The Horus system requires a bit more set up since it requires the students to be properly named and it requires an external tool, but it can be faster to use then the table system.

Project collaboration

Discord can also be used to provide a place where groups of students can work on projects together. Depending on the structure of the course, there might be groups doing the same project, every group might do a different project, or all groups do the same project. This affects how you might want to organize the categories in your server.

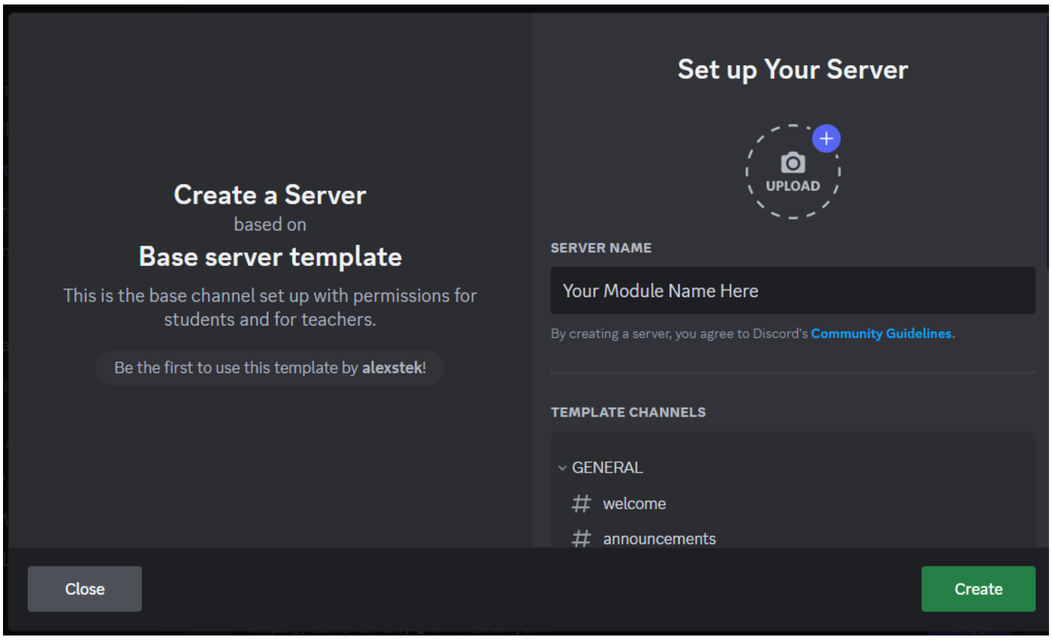
I will take the Data & Information Discord server as an example. Here we have multiple projects and for each project we have multiple groups working on that project. For every project we create a category with some shared text and voice channels so there can be communication between groups doing the same project. This category and its channels are only made visible to the students that do that project and the TAs assigned to mentor them. Then each group also has their own text and voice channel which is only visible to the group's members and their mentors. This allows them to communicate privately and with TAs without sharing information with other groups. The course has stand-up meetings where TAs drop in and attend the meeting to hear how students are getting on with their project, after these meetings students can continue to work together in these voice channels.

Setting up large amounts of these channels can be very time consuming which is why the Ptah bot offers commands to automate this task which are further discussed in the "List of commands". Since these courses often also have tutorials, they might also want to have separate voice channels for those since the project channels are set up to only be accessible to specific mentors. However, this is not always a feasible solution since Discord imposes a 500-channel limit which we have actually hit in the past. As long as your course has less than 300 students you will probably not run into any of these issues.

Creating the server & Templates

The easiest way to create a new server is to use a template. If you have administrator access to an existing Discord server you can generate a template based on that server which allows you to effectively copy the set-up of a server including channels, roles, permissions to a new one. Here is a template for a server matching the "base" server described above:

https://discord.new/QhmTN8fWryWh


Create a Server

based on

Base server template

This is the base channel set up with permissions for students and for teachers.

Be the first to use this template by **alexstek**!

Set up Your Server

SERVER NAME

Your Module Name Here

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

TEMPLATE CHANNELS

GENERAL

welcome

announcements

Figure 6 Creating a server based on a template

By clicking on the link you will be prompted to created a new server. This server will have permissions already set up so that anyone who joins can only see the "welcome" and "announcements" channels. You'll probably want to change the permissions depending on your use case, see "Setting up channel permissions". After adding the bot, as described in "Using the Ptah Discord bot" you can use the bot commands to quickly create more channels.

One of the first you'll want to do after creating the server is to convert it to a community server. This is needed to be able to create an invite link that does not expire. To do this go to the server settings, where you'll find "Enable Community". After clicking "Get Started" go through the steps and set the rules or guidelines channel to "welcome" and the community updates channel to "server-management". We will not need any other features of the community server system.

Once you're done setting up your server you'll want to create an invite link, hover over the welcome channel in the channel list and click the "Create Invite" button. Click the "Edit invite link" button at the bottom of the window that appears. Set the invitation to never expire and to not have a usage limit. After generating the new link you can share it with whoever needs to join the server. Before doing so you'll want to finish setting up the server by "Setting up channel permissions" and adding the Discord bot.

Setting up channel permissions

Discord allows you to restrict the visibility of channels (among other permissions) to people with certain roles. Roles can be created in the server settings. There is a special role called "@everyone" which all members of the server have. All other roles inherit the permissions granted to "@everyone", therefore make sure you do not give this role too many permissions. There are a few permissions that are turned on by default which you may want to disable:

- "Create Invite": It's probably best if you use a single invite link that you can disable when necessary and not let students create their own additional links.
- "Use External Emojis" and "Use External Stickers": Students that pay for Discord Nitro are able to use emojis and stickers that were added by other Discord servers. Some of those may be inappropriate for use in a university environment. Generally we change the settings of the "offtopic-chill-chat" so that these *are* allowed in that channel only.
- "Use Soundboard": The soundboard allows students to play (annoying) sounds while in a voice channel
- Depending on how you set up the server (namely if you selected the option "for my friends and me" during server creation) there might be some additional permissions that are turned on here such as "Mention @everyone, @here, and all roles". You may want to check if there additional permissions you want to turn off

USING THE PTAH DISCORD BOT

We developed a Discord Bot named Ptah to assist in managing a discord server and provide additional benefits, such as relaying canvas announcements. Please contact us to add Ptah to your discord server, because we need to setup the bot to work with each discord.

To set up the discord bot for the server we need to gather the following information:

- The server's ID
- The "botcommands" channel ID

To find this information you first need to open the user settings in Discord. On the advanced page turn on "Developer Mode", this will give you extra options when right-clicking elements in the Discord interface. After turning on the "Developer Mode" you can now right-click the server in the server list on the left and click "Copy Server ID" to copy the server's ID to your clipboard. Similarly, you can right-click the "botcommands" channel and click "Copy Channel ID" to copy the channel's ID to your clipboard.

Depending on the set-up you'd like for your server you might want to enable additional bot features:

Announcements
The bot can relay announcements from canvas to a channel in the Discord server. To set this up you'll need to get the ID of the "announcements" channel in your Discord server. Additionally, you need the RSS feed link where Canvas publishes announcements. On the announcements page in your Canvas course there is a link to the "External feeds" on the top-right which reveals a window with link taking you to the RSS feed. Note down the URL of the RSS feed, it should end in ".atom".

Note: the announcements RSS feed can be added later, you do not need to wait until this is ready to proceed.

Event registration

The bot incorporates a simple event registration system which allows you to create events which are posted to a Discord channel. Students can then register for the event by clicking a button on the message until a certain deadline has passed after which the registration status can no longer be changed. Additionally, you can set a maximum number of spots that are available. All that is needed to get this feature set up is the ID of the channel where the events should be posted.

Procedure

To add Ptah to a discord server, somebody in the Ptah admin team needs to be added to the server. They can then setup the bot for you. Please contact us when you want to add Ptah to your server, ideally with an invite to your server, so we can help you set itup.

List of commands

List of commands

There are two commands that are available in every channel (that the bot has permission to access)

`/latex <equation>`

Renders a LaTeX equation to an image and shows it in the channel

`/status`

Shows the status of the game server (Software Systems only)

There are also commands that are only available in the "botcommands" channel

`!status`

Shows the status of the bot and recent log messages

`!countonline [@role]+`

Shows how many people are online with the given role (only an indication since people can mark their status as invisible)

`!done`

If you are in a voice channel this command moves you (back) to the "Muted VC"

`!restart`

Requires server administrator privileges Restarts the bot in its entirety

`!setnick <@user> <nickname>`

Requires the manage nicknames permission Sets the nickname of the mentioned user, can be spread across multiple lines to modify nicknames in bulk

`!giveroles <@user> <@role>+`

Requires the manage roles permission Gives the mentioned user the mentioned roles, can be spread across multiple lines to modify nicknames in bulk

`!processintake <start row> <end row (exclusive)> <@role>+`

DEPRECATED? Requires the manage nicknames and manage roles permissions Upload a csv with the columns Date, Nickname, Student Number, Discord Username. All mentioned users will be given their respective nickname and all the mentioned roles.

`!archive [#channel]+`

Requires the bot to have administrator permissions Archives all messages and attachments in all channels or the mentioned channels if at least one was mentioned. (Currently requires file access to the server running the bot)

`!makechannels <"category name"> <begin> <end>`

Requires the administrator permission Make a category with the specified name containing voice channels numbered between <begin> and <end> inclusive.

`!makegroupchannels <"category name"> <begin> <end>`

Requires the administrator permission Make a category with the specified name containing voice channels numbered between <begin> and <end>. Also creates roles named `Category Name<index>` for each voice channel and makes these voice channels only visible for those roles.

`!makem4channels <"Group prefix"> <count>`

Requires the administrator permission Make a category and a role with the group prefix name. The category contains the text channels “general”, “announcements”, and “files” and the voice channel “General”. These channels and the category are only visible for the aforementioned role. There are also channels and roles for each specific team. The roles will be called `Group Prefix <index>`, and the channels will be called `team-<index> and Team <index> for` text and voice channels respectively. All these team specific channels are only visible for that team’s role

`!cleanup`

Requires the administrator permission Deletes all channels that are not in a category. This is useful because deleting a category does not delete the channel’s inside it.

`!getroles`

Gets a list of roles in this Discord server with all their IDs. This is useful for creating a spreadsheet matching group names to role IDs. Such a spreadsheet can be used to make a list of `!giveroles` commands

Finally, it is possible to find the voice channel where a student can be found by entering their name (usually done by copy-paste) as a command. You must be in a voice channel for this to work because you will be moved to the student’s channel automatically after entering the command. Note that for unknown reasons some students are invisible to the bot and must be searched out manually.

FREQUENTLY ASKED QUESTIONS

How does Discord make money?

Discord makes money by selling subscriptions which allow users to use animated emoji’s, share their screen at a higher quality, upload larger files and customise their profiles. Additionally, Discord servers can be boosted to enable similar benefits for an entire server, however, we have as of yet not found any use for this for university courses.