Intro To Discord Bot

By Matthew Cheung

Prereqs:

–Very basic knowledge of python

–Ability to read (documentation)

Goals:

– Bot that responds to commands

– Understanding what you can do with the bot

– Happiness

Why Discord and Why Discord Bots?

WHY DISCORD?

- Has over 300 million registered users
- 6.7 million active servers
- A platform for many likeminded individuals to congregate
- Intuitive and easy to use Application

WHY DISCORD BOTS?

- Very thorough documentation available
- Pretty straightforward to code with python
- Easy for most people to use your bot afterwards

Key Points with Discord Bots

CLIENT EVENTS

No command prefix to call. Mainly used for "on_message" events, checks for specific words to execute.

COMMAND EVENTS

Subclass of Client. Uses command prefix. The one you're all familiar with. Strongly suggest going with this one!

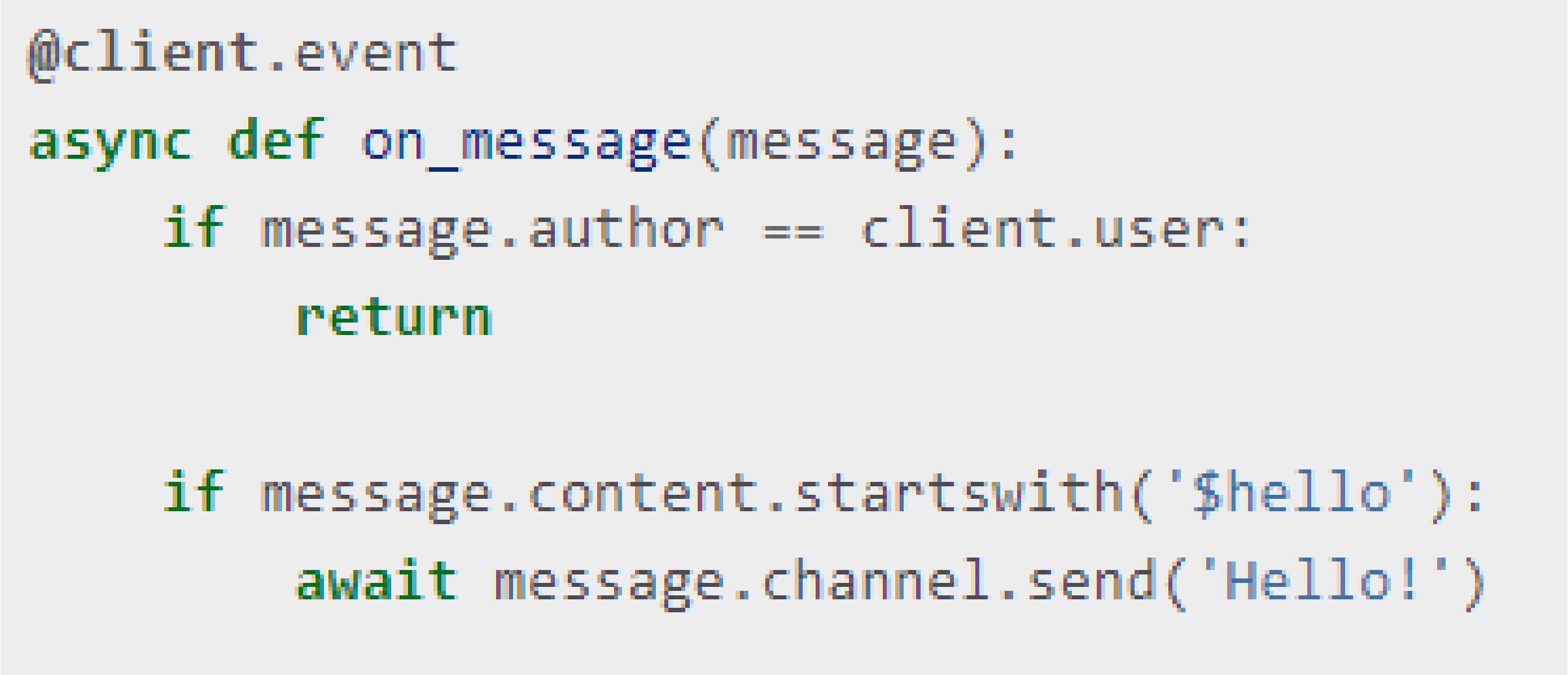
ASYNC FUNCTIONS

We will go over this soon but all command functions must be async in discord py!

DOCUMENTATION!

Discord.py has amazing documentation! Please utilize it!

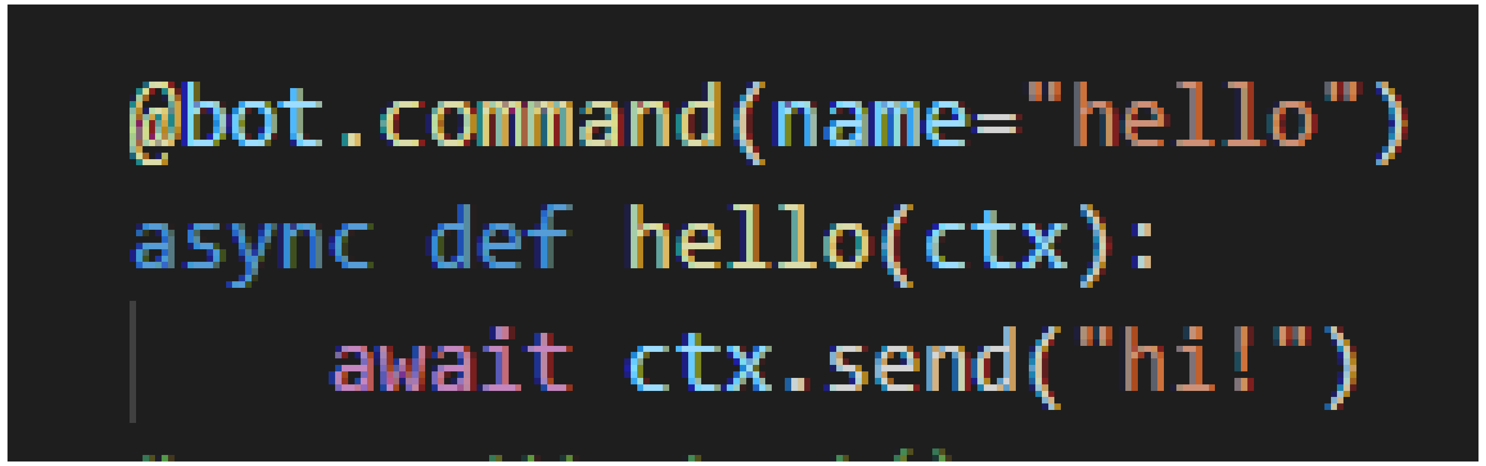
Client vs Bot



```python
@client.event
async def on_message(message):
    if message.author == client.user:
        return

    if message.content.startswith('$hello'):
        await message.channel.send('Hello!')
```

CHECKS FOR SPECIFIC MESSAGE

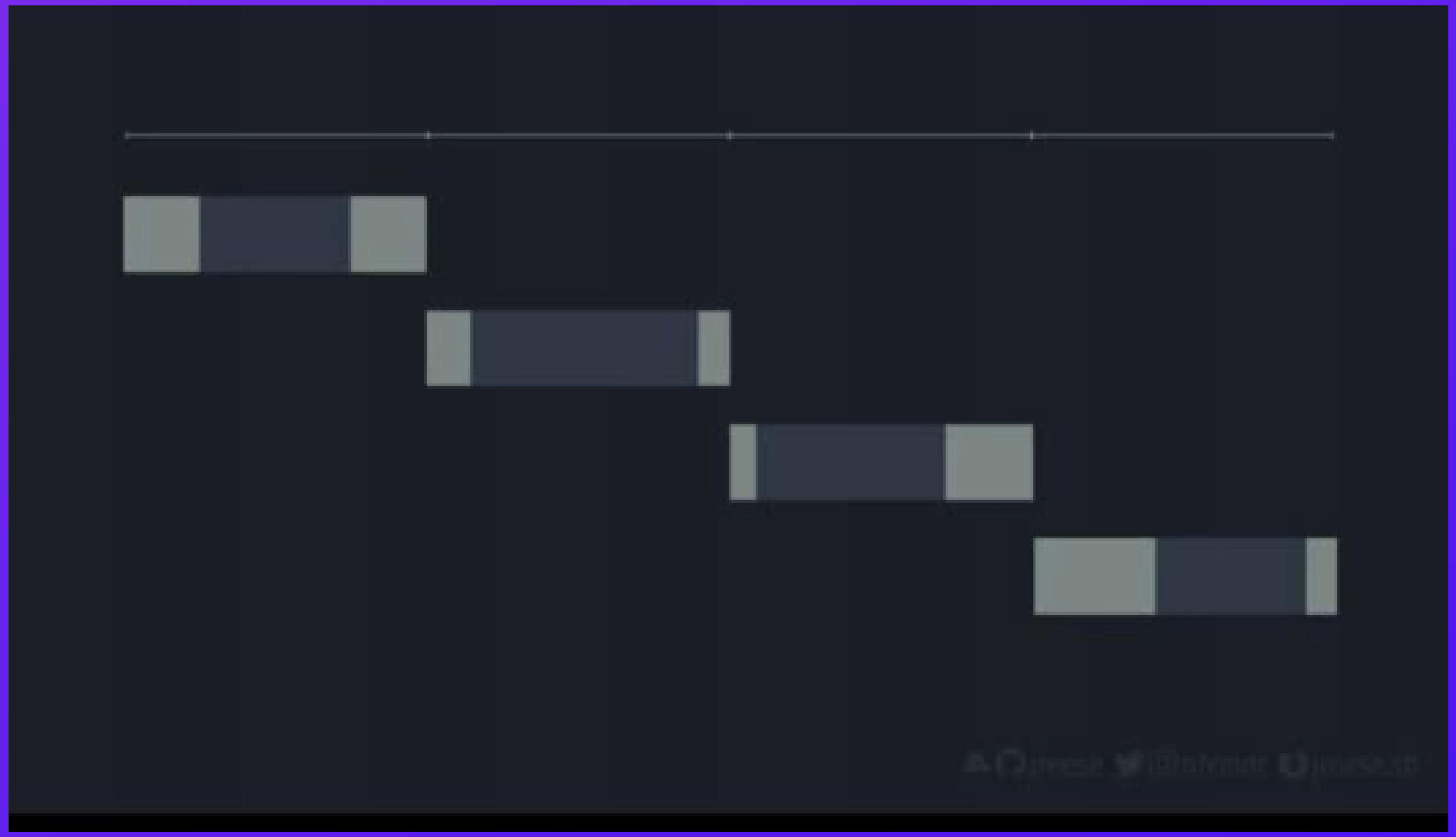


```python
@bot.command(name="hello")
async def hello(ctx):
    await ctx.send("hi!")
```

UTILIZES PREFIX AND NAME OF THE COMMAND

What is synchronous? Why do i care?

Synchronous code is something you're all used to. Runs function one after the other.



The next task/function will only be executed after the current one is finished.

A great example of this would be waiting in line to gain entry somewhere. You can't skip everyone else in front of you, so you have to wait your turn.

What is asynchronous and why do i care?

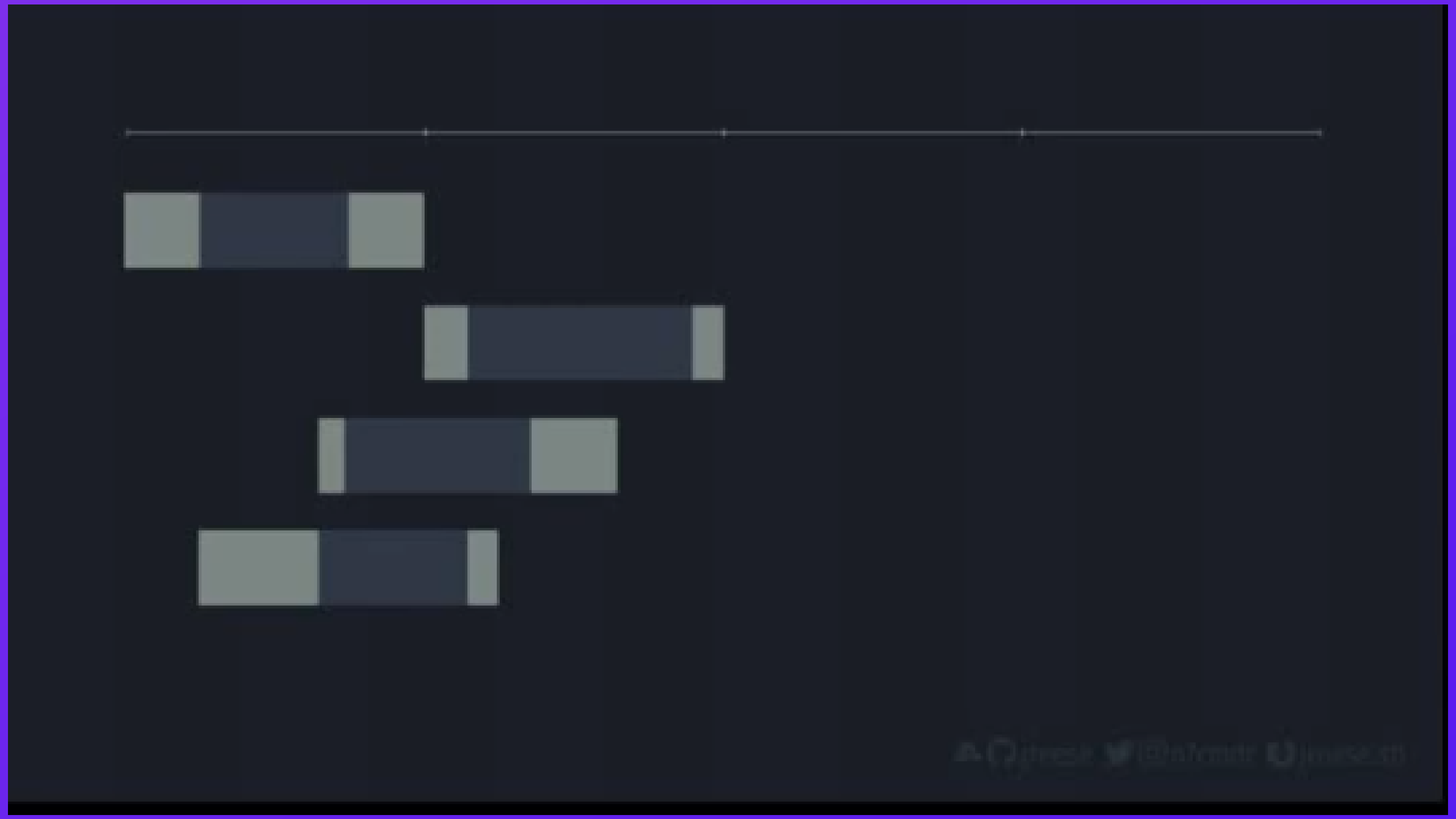
With asynchronous execution, you begin a routine, let it run, and start the next one.

Asynchronous code runs seemingly in parallel. One process, no threads.

If you write async functions, ensure you use await as well. Await tells the program, run the function in the background and when whatever being awaited is completed, pick it back up.

Coroutines are a way for different functions to run during the idle times of other functions.

An everyday example would be when you order food in a restaurant, others will also order food. They don't have to wait for your food to be cooked and served to you before they can order. The food will be served as soon as its cooked.

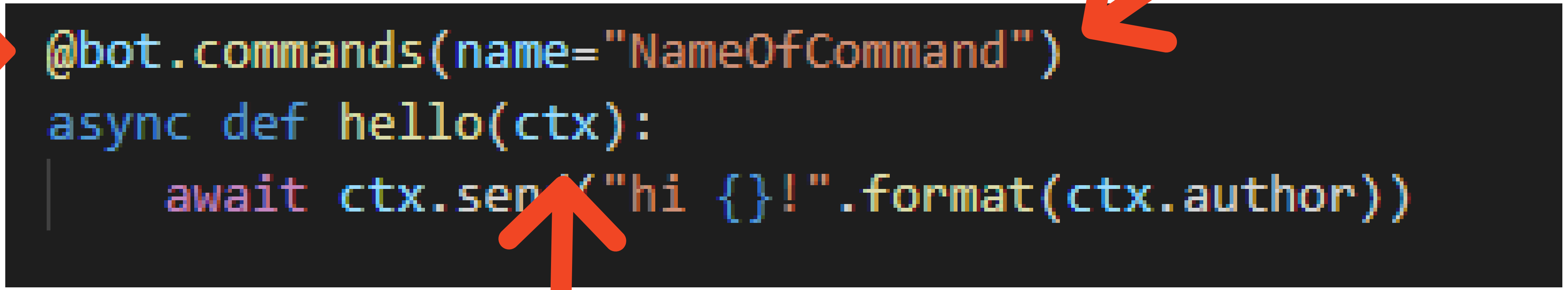


A Discord Example: Imagine if 10 people used a discord command at the same time. Sync code would make the 10th person wait a pretty looooooooooooong time.

Decomposing a command function

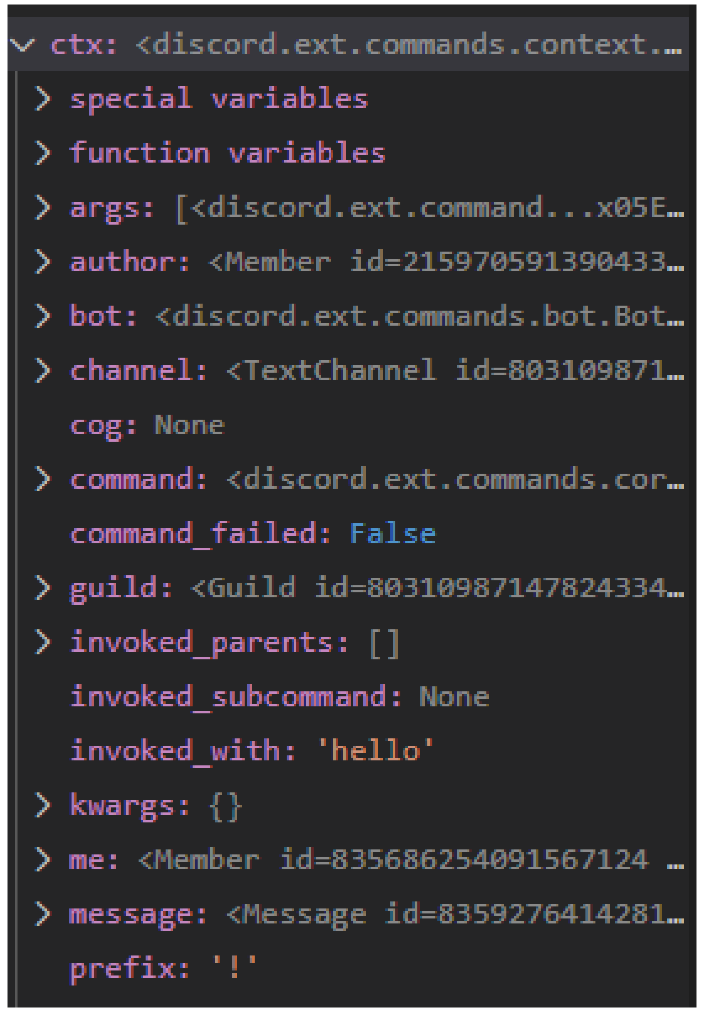
Decorator for the command. It says the function you define should be passed to bot.commands

Naming the command. "!hello"



```
@bot.commands(name="NameOfCommand")
async def hello(ctx):
    await ctx.send("hi {}!".format(ctx.author))
```

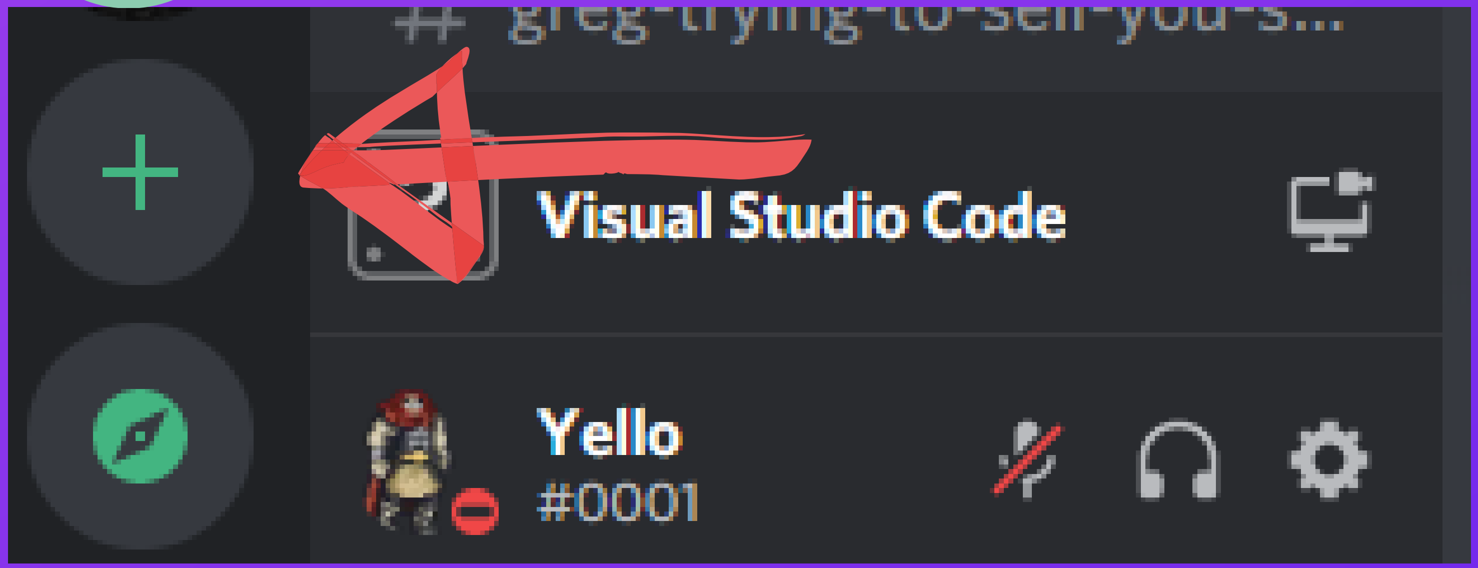
"ctx" means context. You can access a lot of information. From the author of the command to the server it was called, all roles available, emojis, etc...



```
⌄ ctx: <discord.ext.commands.context.…
  › special variables
  › function variables
  › args: [<discord.ext.command...x05E…
  › author: <Member id=215970591390433…
  › bot: <discord.ext.commands.bot.Bot…
  › channel: <TextChannel id=803109871…
    cog: None
  › command: <discord.ext.commands.cor…
    command_failed: False
  › guild: <Guild id=80310987147824334…
  › invoked_parents: []
    invoked_subcommand: None
    invoked_with: 'hello'
  › kwargs: {}
  › me: <Member id=835686254091567124 …
  › message: <Message id=8359276414281…
    prefix: '!'
```

Setup a server

1



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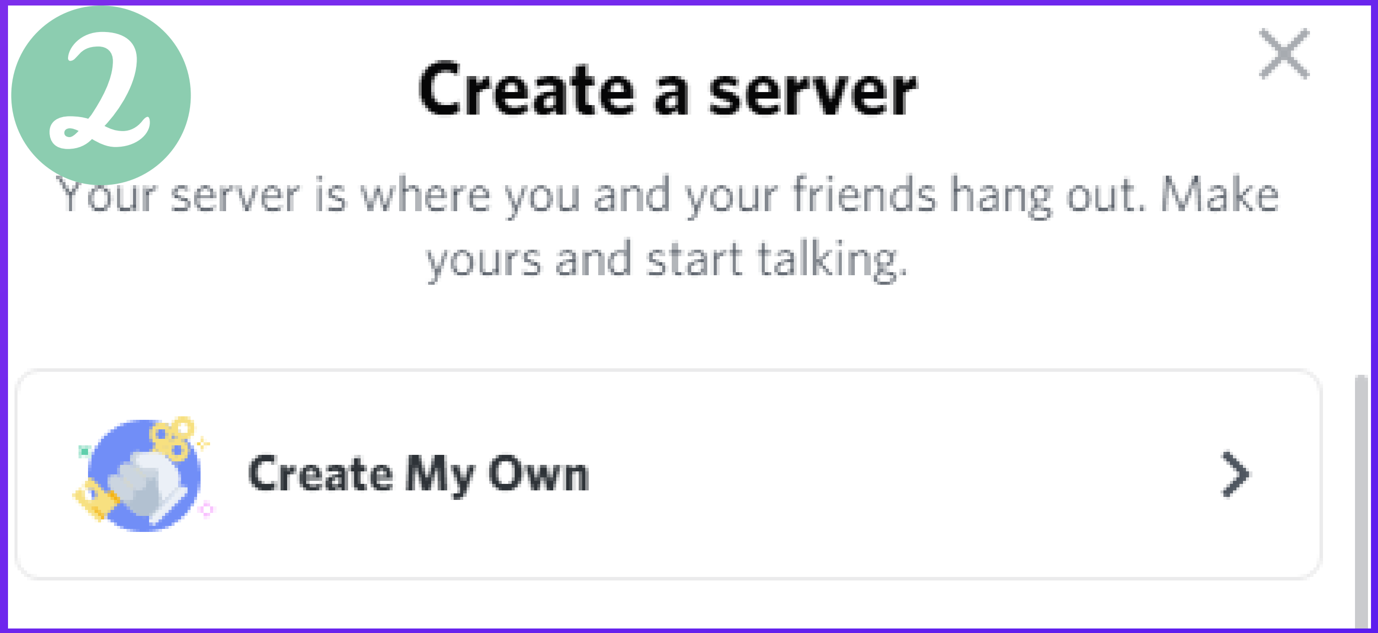
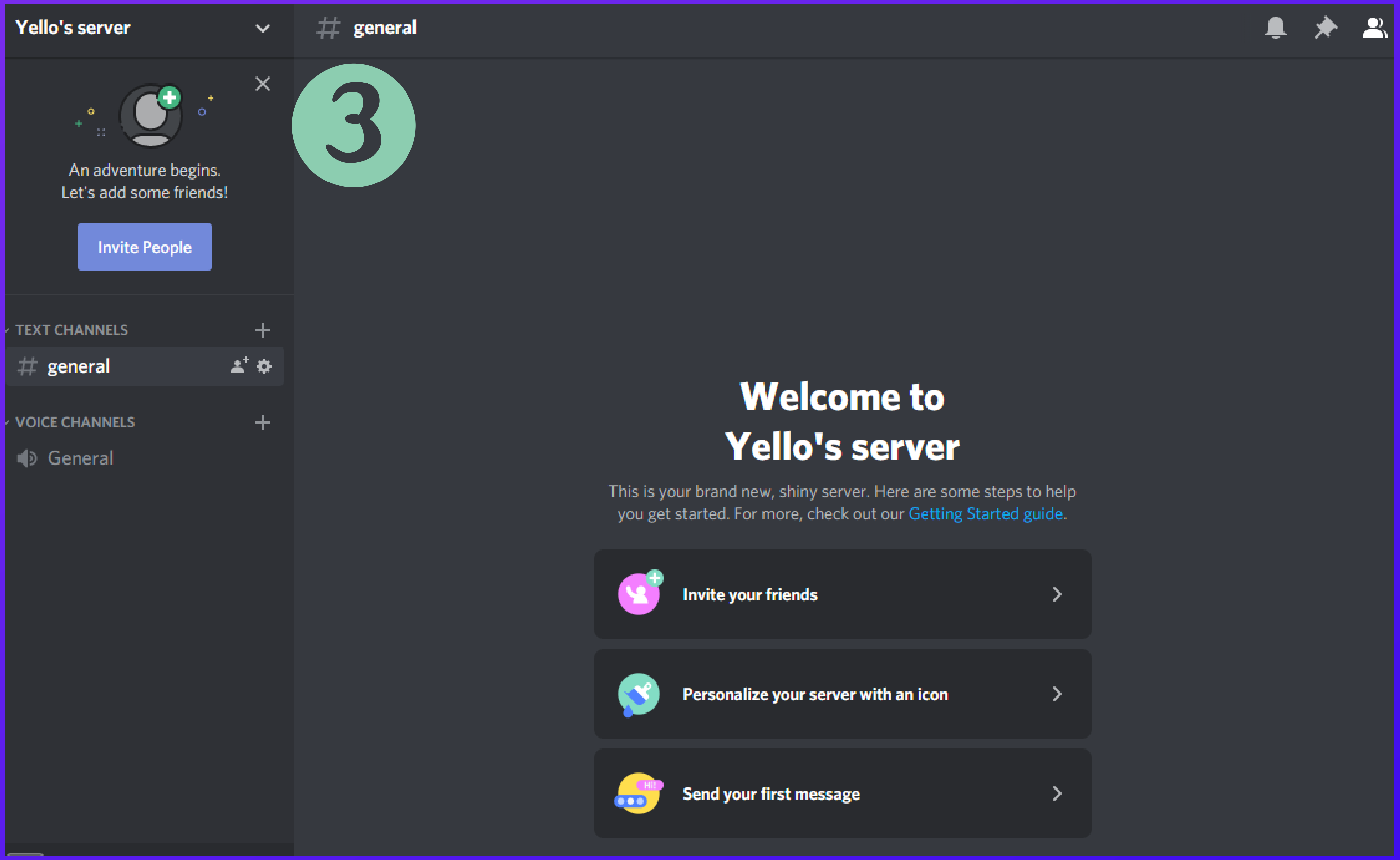


Create a server

Your server is where you and your friends hang out. Make yours and start talking.

Create My Own

3



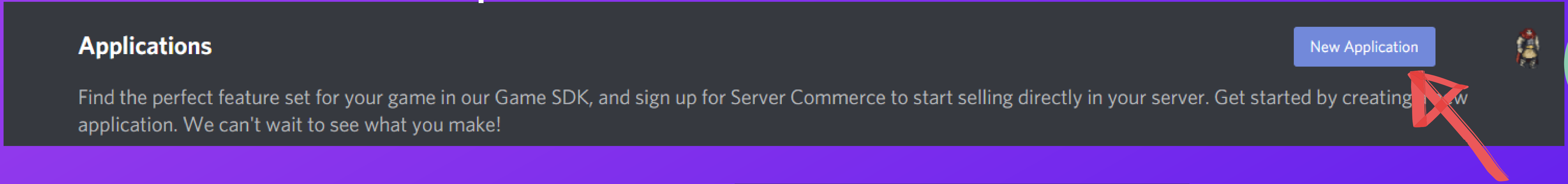
An adventure begins.
Let's add some friends!

Welcome to Yello's server

This is your brand new, shiny server. Here are some steps to help you get started. For more, check out our Getting Started guide.

- Invite your friends
- Personalize your server with an icon
- Send your first message

Setup on Discord's Website



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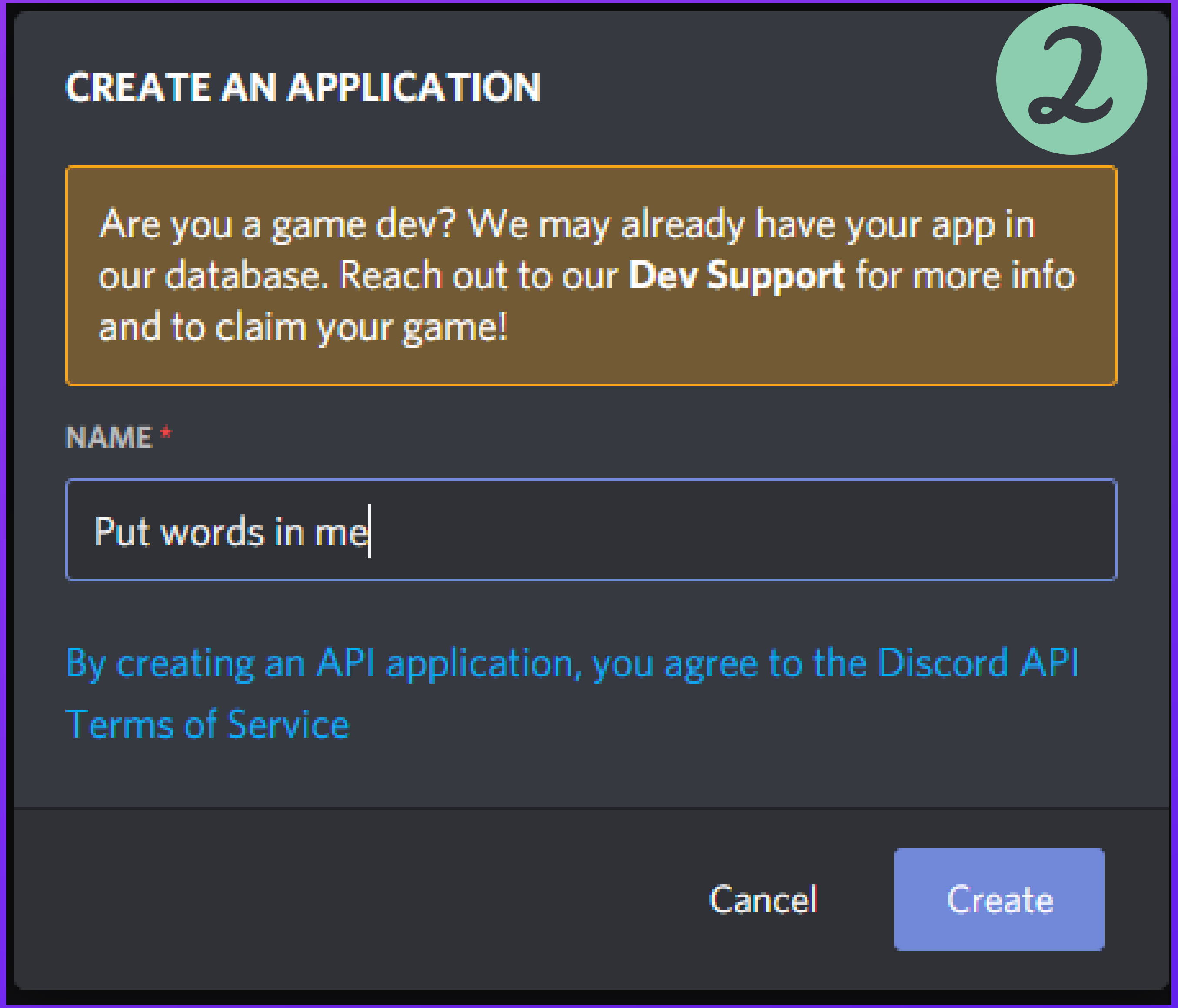
Applications

New Application

Find the perfect feature set for your game in our Game SDK, and sign up for Server Commerce to start selling directly in your server. Get started by creating w application. We can't wait to see what you make!



2

CREATE AN APPLICATION

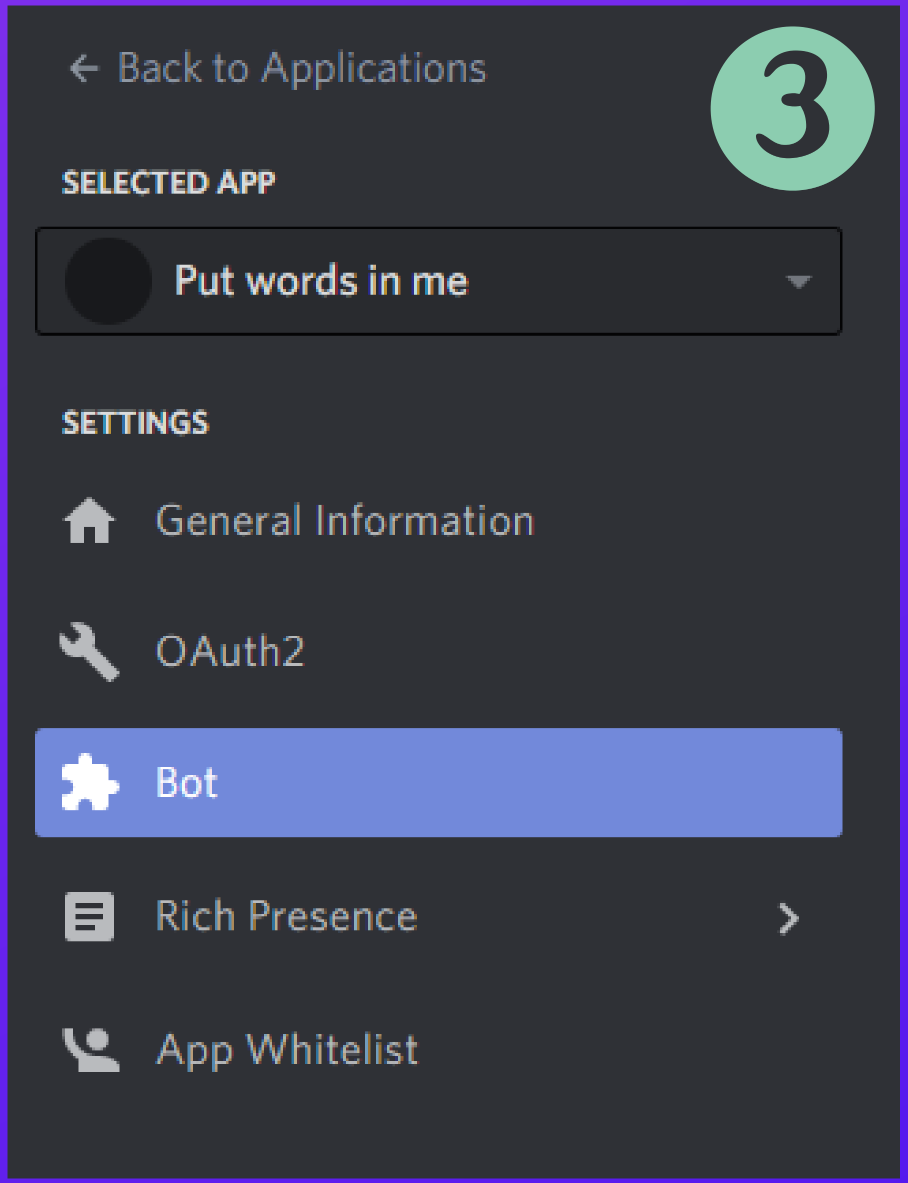
Are you a game dev? We may already have your app in our database. Reach out to our **Dev Support** for more info and to claim your game!

NAME *

Put words in me

By creating an API application, you agree to the Discord API Terms of Service

Cancel Create



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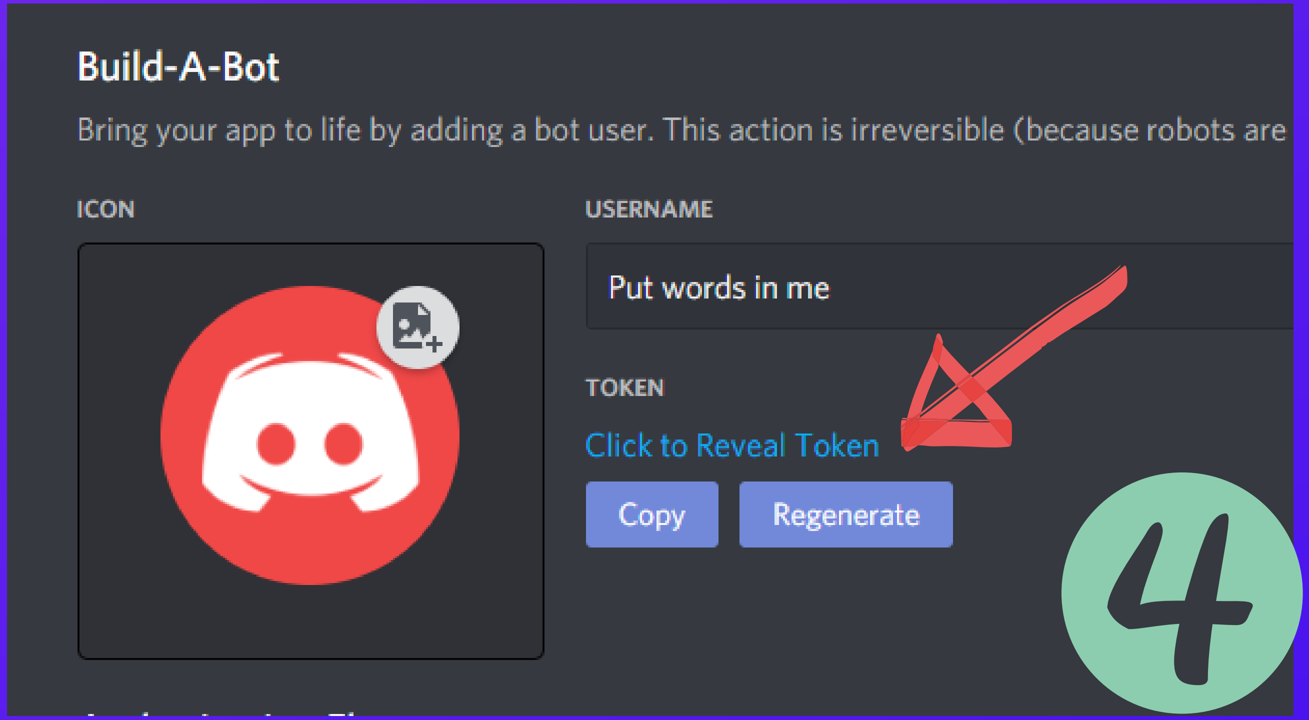
← Back to Applications

SELECTED APP

Put words in me

SETTINGS

- General Information
- OAuth2
- Bot
- Rich Presence >
- App Whitelist



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Build-A-Bot

Bring your app to life by adding a bot user. This action is irreversible (because robots are

ICON

USERNAME

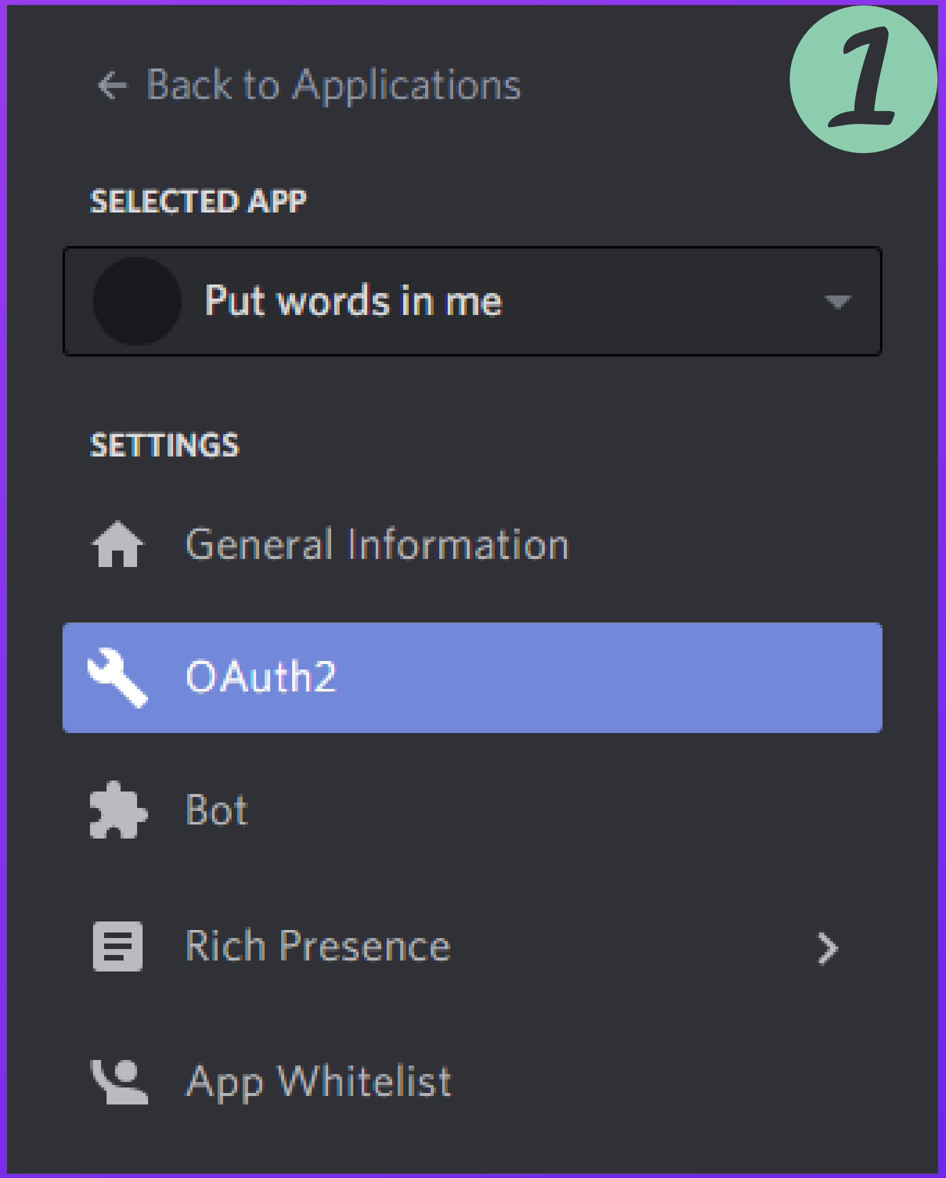
Put words in me

TOKEN

Click to Reveal Token

Copy Regenerate

Putting the bot in the server



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SELECTED APP

Put words in me

SETTINGS

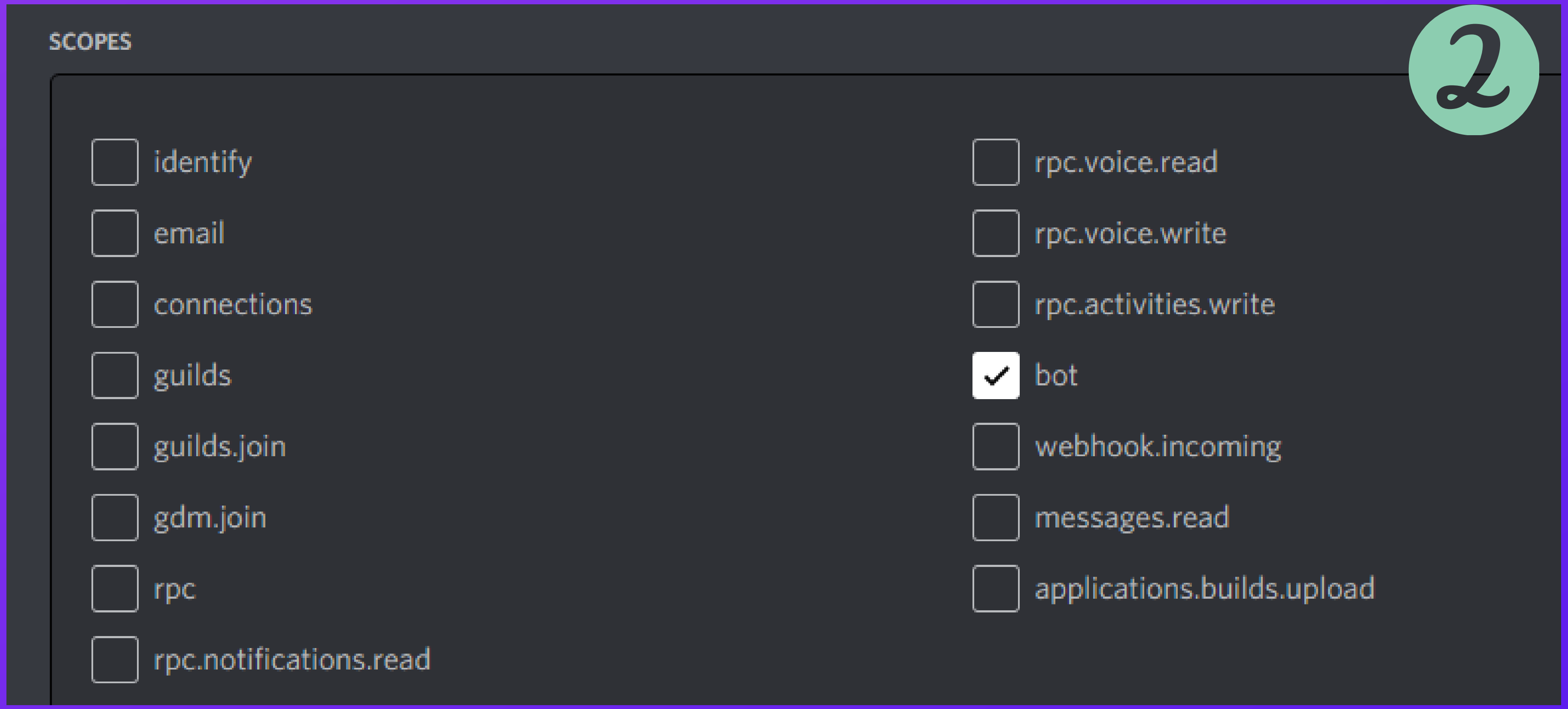
General Information

OAuth2

Bot

Rich Presence ›

App Whitelist



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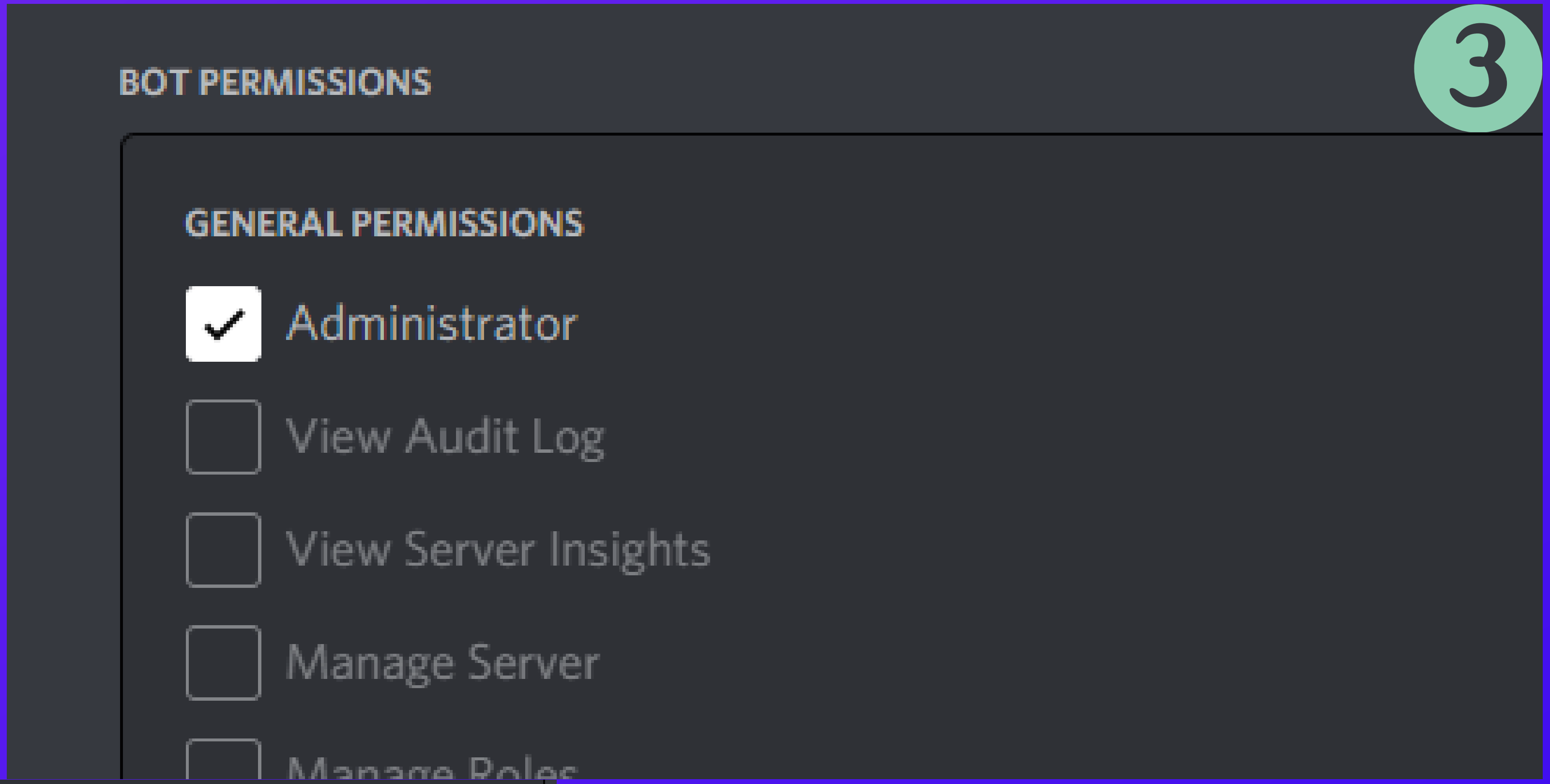
SCOPES

□ identify
□ email
□ connections
□ guilds
□ guilds.join
□ gdm.join
□ rpc
□ rpc.notifications.read
□ rpc.voice.read
□ rpc.voice.write
□ rpc.activities.write
☑ bot
□ webhook.incoming
□ messages.read
□ applications.builds.upload



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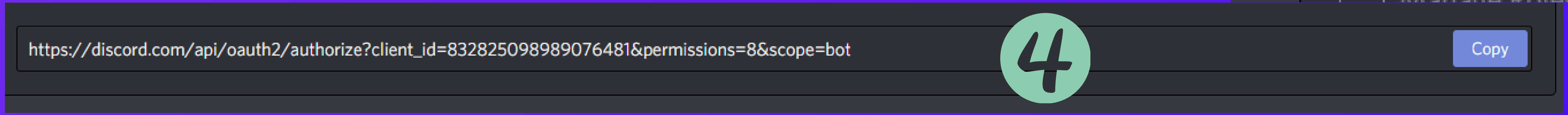
BOT PERMISSIONS

GENERAL PERMISSIONS

☑ Administrator
□ View Audit Log
□ View Server Insights
□ Manage Server
□ Manage Roles



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https://discord.com/api/oauth2/authorize?client_id=832825098989076481&permissions=8&scope=bot

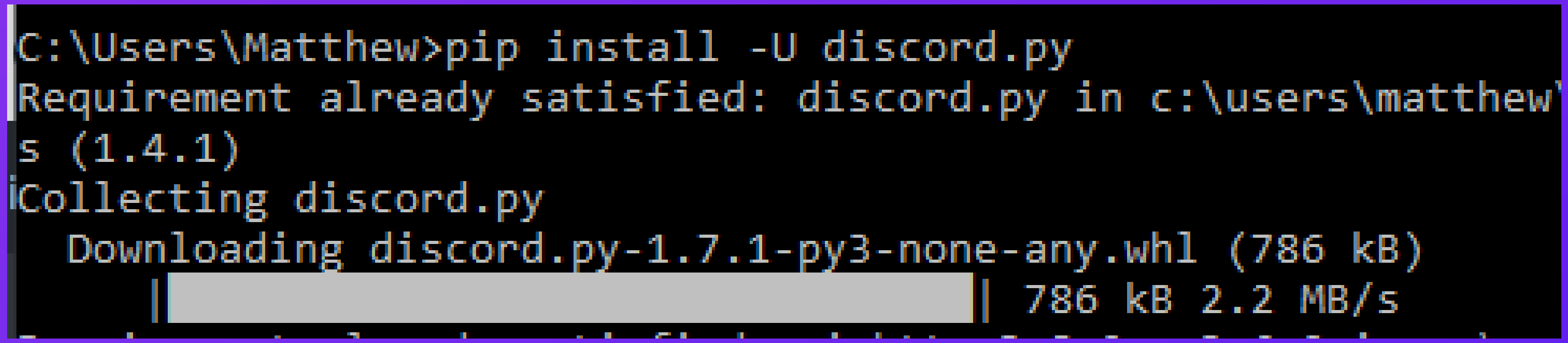
Time for code

Install discord.py through pip.
Pip comes installed with Python.

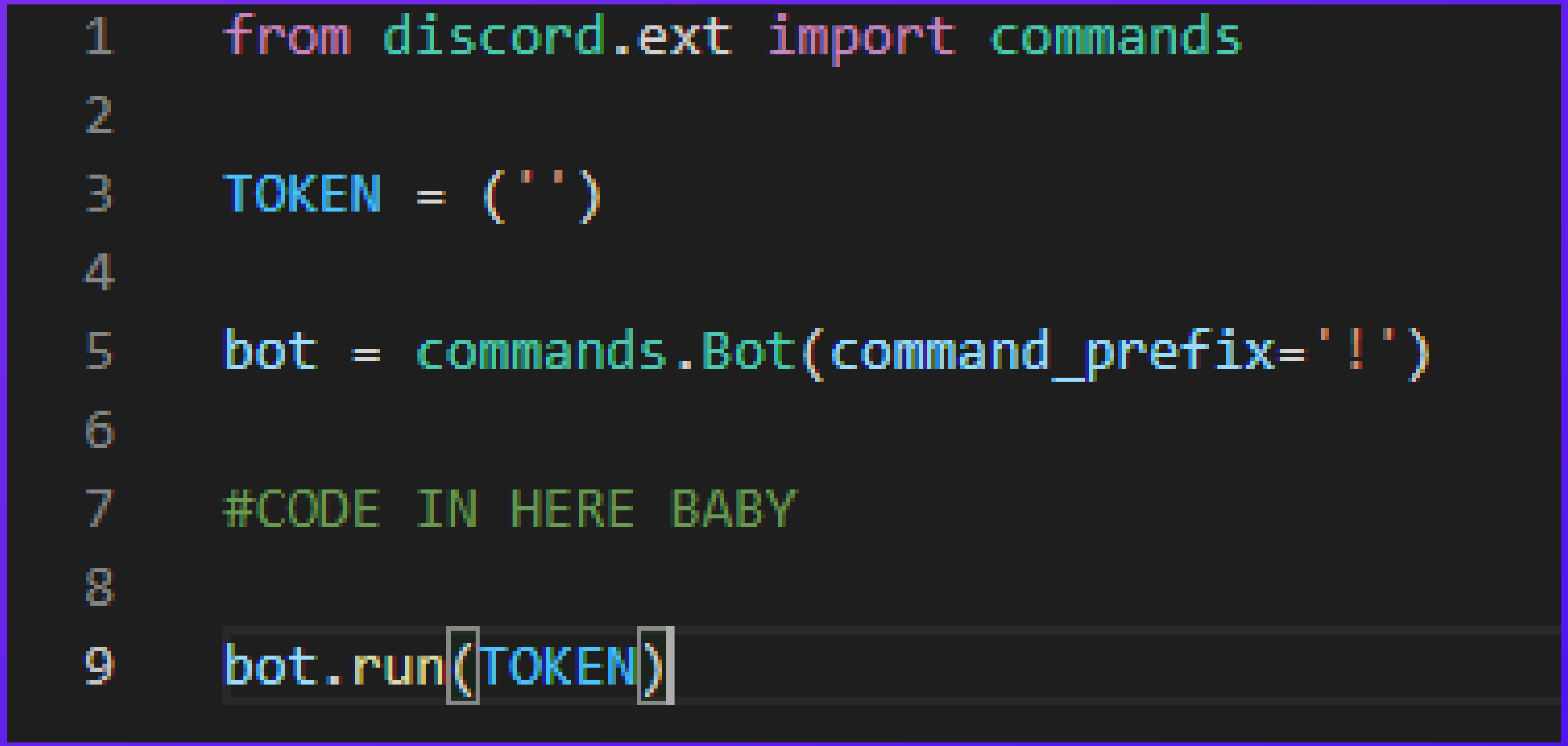
pip install -U discord.py

Skeleton to work with pretty much every time you create a bot. Token will be your unique token

DO NOT SHARE YOUR TOKEN!!



```
C:\Users\Matthew>pip install -U discord.py
Requirement already satisfied: discord.py in c:\users\matthew\
s (1.4.1)
Collecting discord.py
  Downloading discord.py-1.7.1-py3-none-any.whl (786 kB)
     |████████████████████████████████| 786 kB 2.2 MB/s
```



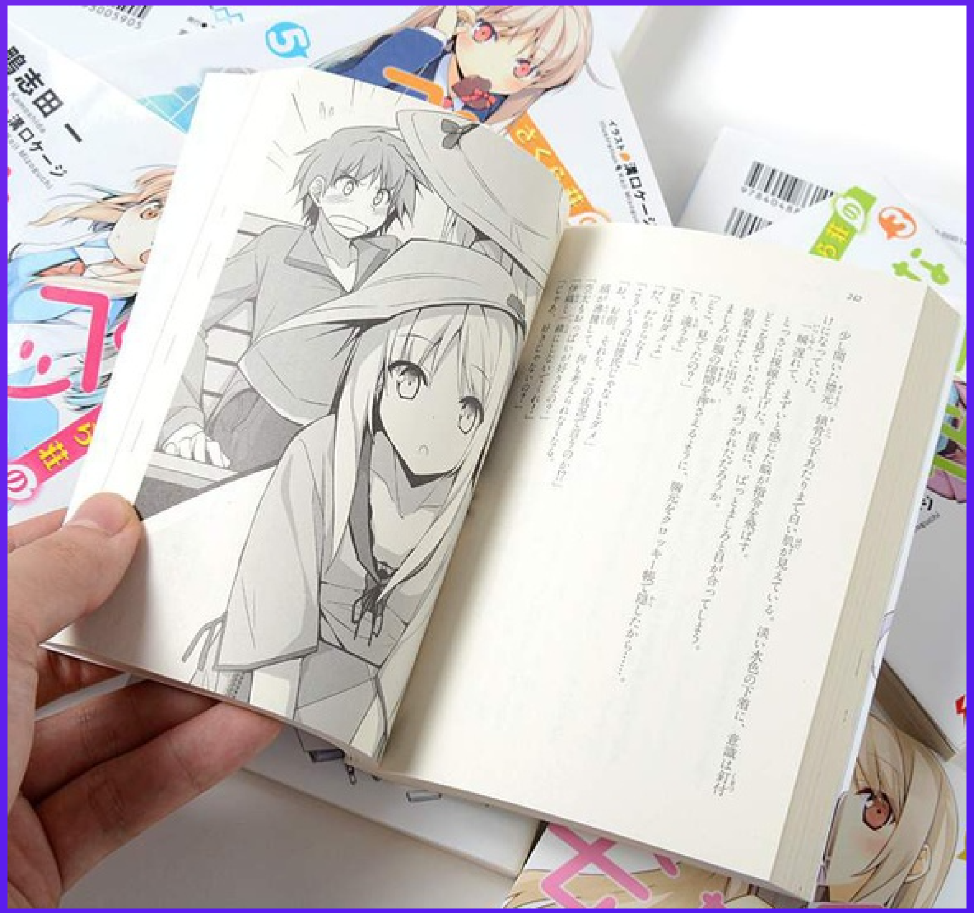
```python
from discord.ext import commands

TOKEN = ('')

bot = commands.Bot(command_prefix='!')

#CODE IN HERE BABY

bot.run(TOKEN)
```

Ok, my bot is online. Now what?

Anything. Literally anything. Sky's the limit.

Stock Market Bot?

RPG Bot?



LIGHT NOVEL BOT? 👀

Any questions?