DELHI TECHNOLOGICAL UNIVERSITY

DISCRETE MATHEMATICS
[IT-205]

Project Report

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CANDIDATE'S DECLARATION

We, Dhruv Gupta (2K19/IT/045) and Harsh Bhardwaj (2K19/IT/055), students of B.Tech(INFORMATION TECHNOLOGY), hereby declare that the project titled, "Discord Bot" which is submitted by us to the Department of INFORMATION TEACHNOLOGY, Delhi Technological University, Delhi in partial fulfilment of the requirement for the award of the degree of the Bachelor of Technology, is original and not copied from any source without proper citation. This work has not been performed previously for the award of any degree, Diploma Associateship, fellowship, or similar title or recognition.

Place: Delhi
Date: 01/12/2020

Dhruv Gupta
Harsh Bhardwaj

CERTIFICATE

I hereby certify that the project titled “Discord Bot” which is completed by Dhruv Gupta (2K19/IT/045) and Harsh Bhardwaj (2K19/IT/055), INFORMATION TECHNOLOGY, Delhi Technological University, partial fulfilment of the requirement for the award of the degree of the Bachelor of Technology, is a record of the project work carried out under my supervision. To the best of my knowledge, this work has not been submitted in part or full for any Degree or Diploma to this University or elsewhere.

Place: Delhi
Date: 01/12/2020

Swati Sharda
(Supervisor)

ACKNOWLEDGEMENT

I would like to convey our heartfelt thanks to our supervisor, Mrs. Swati Sharda for her ingenious ideas, tremendous help and cooperation.

I am extremely grateful to my friends who gave valuable suggestions and guidance for completion of my project. The cooperation and healthy criticism came handy and useful with them.

Finally, I would like to thank all the above-mentioned people once again.

INTRODUCTION

Today is the era of intelligence in machines. One instance of this is called chat bots, which are computer programs capable to carry out conversations with people.

- Chatbots are important because they are one of the most prolific examples of Human Computer Interaction (HCI).
- These programs are mainly serving as personal assistants these days.

Discord is an American VoIP, instant messaging and digital distribution platform designed for creating communities. Users communicate with voice calls, video calls, text messaging, media and files in private chats or as part of communities called "servers." Servers are a collection of persistent chat rooms and voice chat channels. Discord runs on Windows, macOS, Android, iOS, Linux, and in web browsers. As of July 21, 2019, there are over 250 million users of the software.

FEATURES:

1. SERVERS: Discord communities are organized into discrete collections of channels called servers. A user can create servers for free, manage their public visibility and create one or more channels within that server.
2. CHANNELS: Channels may be either used for voice chat and streaming or for instant messaging and file sharing. The visibility and access to channels can be customized to limit access from certain users.
3. USER PROFILES: Users register for Discord with an email address and must create a username. To allow multiple users use of the same username, they are assigned a four-digit number called a "discriminator", prefixed with "#", which is added to the end of their username.
4. VIDEO CALLS AND STREAMING: Video calling and screen sharing were added in October 2017, allowing users to create private video calls with up to 10 users, later increased to 40 due to the COVID-19 pandemic.

In this project, we have created a simple discord bot.

- We have used some python programming for implementing some functions and executing it.
- This project uses concepts of “Queues” which is a part of Data Structures.

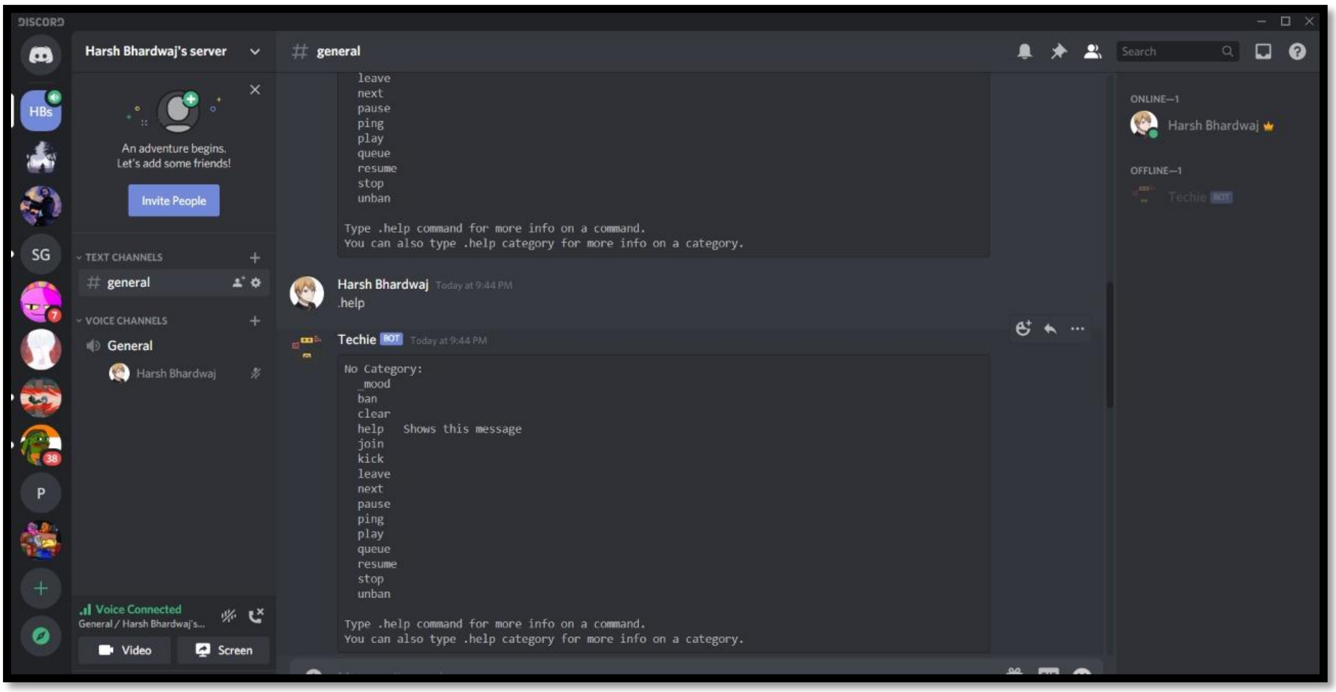
Our bot contains the following commands:

- Mood: We can ask a question from our bot and it will return a simple answer.
- Ban: This command will ban a user from the server. After banning he won’t be able to join the server the administrator of that server unbans him or her.
- Unban: This command will unban a banned user. The user can now join that server.
- Kick: This command will kick the user out of the server. But he can join that server again with the help of the server link.
- Leave: This command will make the discord bot leave from the server.
- Join: This command will make our bot join the general server, for additional features.

- Ping: This command will show the latency of the bot.
- Play: This command will enable the bot to play audio. Just write .play ‘YOUTUBE LINK’ and it will play the audio for you.
- Pause, Stop: these commands will respectively pause and stop the audio.

- Queue: This command will make the audio clips in queue and also it will be shown in the folder.
- Next: This command will play the next audio file.

CODE SNIPPETS + RESULTS

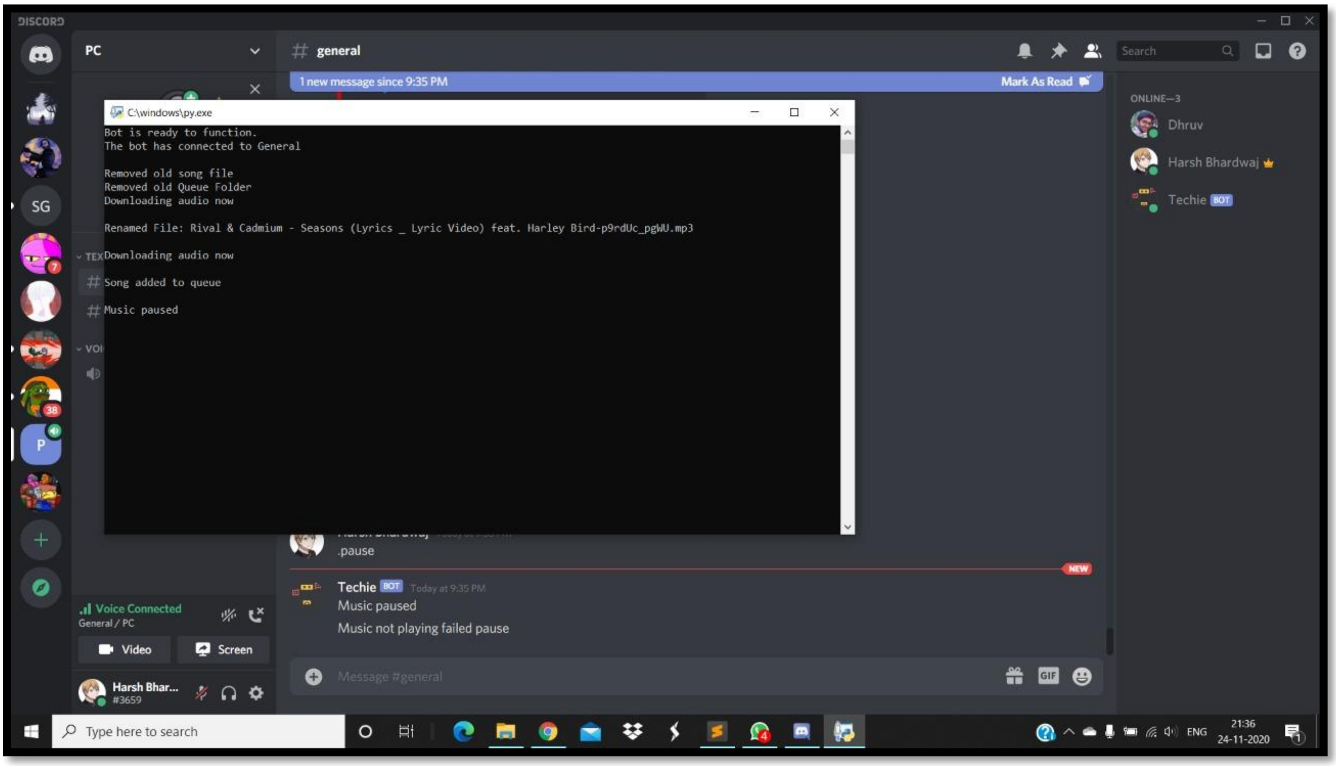


```
  leave
  next
  pause
  ping
  play
  queue
  resume
  stop
  unban

Type .help command for more info on a command.
You can also type .help category for more info on a category.
```

Harsh Bhardwaj Today at 9:44 PM
.help

Techie BOT Today at 9:44 PM

```
No Category:
  _mood
  ban
  clear
  help   Shows this message
  join
  kick
  leave
  next
  pause
  ping
  play
  queue
  resume
  stop
  unban

Type .help command for more info on a command.
You can also type .help category for more info on a category.
```

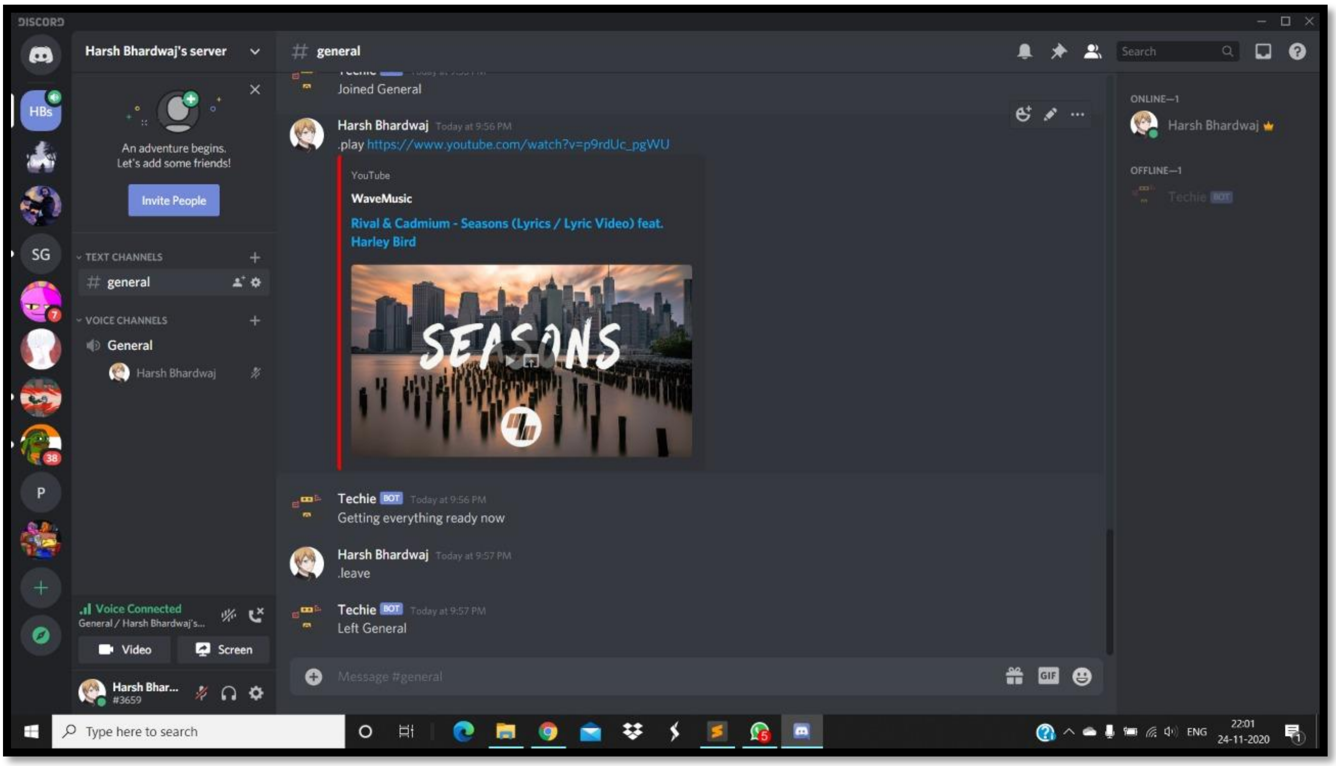


C:\windows\py.exe

```
Bot is ready to function.
The bot has connected to General

Removed old song file
Removed old Queue Folder
Downloading audio now

Renamed File: Rival & Cadmium - Seasons (Lyrics _ Lyric Video) feat. Harley Bird-p9rdUc_pgWU.mp3

Downloading audio now

Song added to queue

Music paused
```

.pause

Techie BOT Today at 9:35 PM
Music paused
Music not playing failed pause



Techie BOT

Joined General

Harsh Bhardwaj Today at 9:56 PM

.play https://www.youtube.com/watch?v=p9rdUc_pgWU

YouTube

WaveMusic

Rival & Cadmium - Seasons (Lyrics / Lyric Video) feat. Harley Bird

Techie BOT Today at 9:56 PM

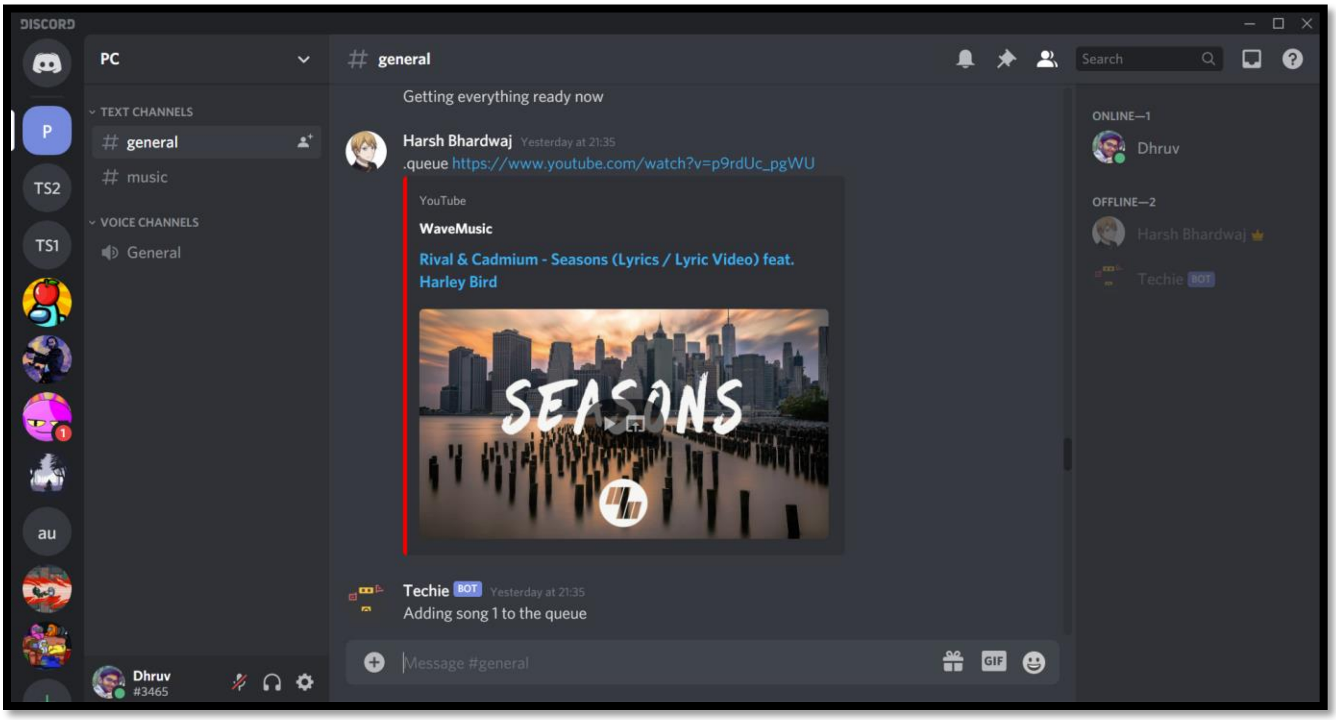
Getting everything ready now

Harsh Bhardwaj Today at 9:57 PM

.leave

Techie BOT Today at 9:57 PM

Left General



Getting everything ready now

Harsh Bhardwaj Yesterday at 21:35

.queue https://www.youtube.com/watch?v=p9rdUc_pgWU

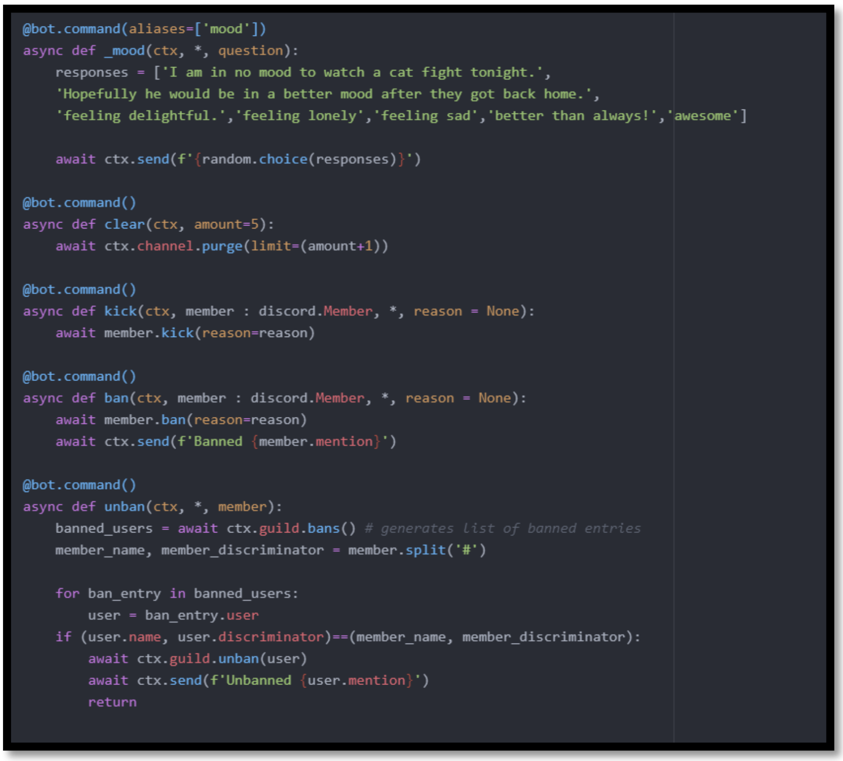
YouTube

WaveMusic

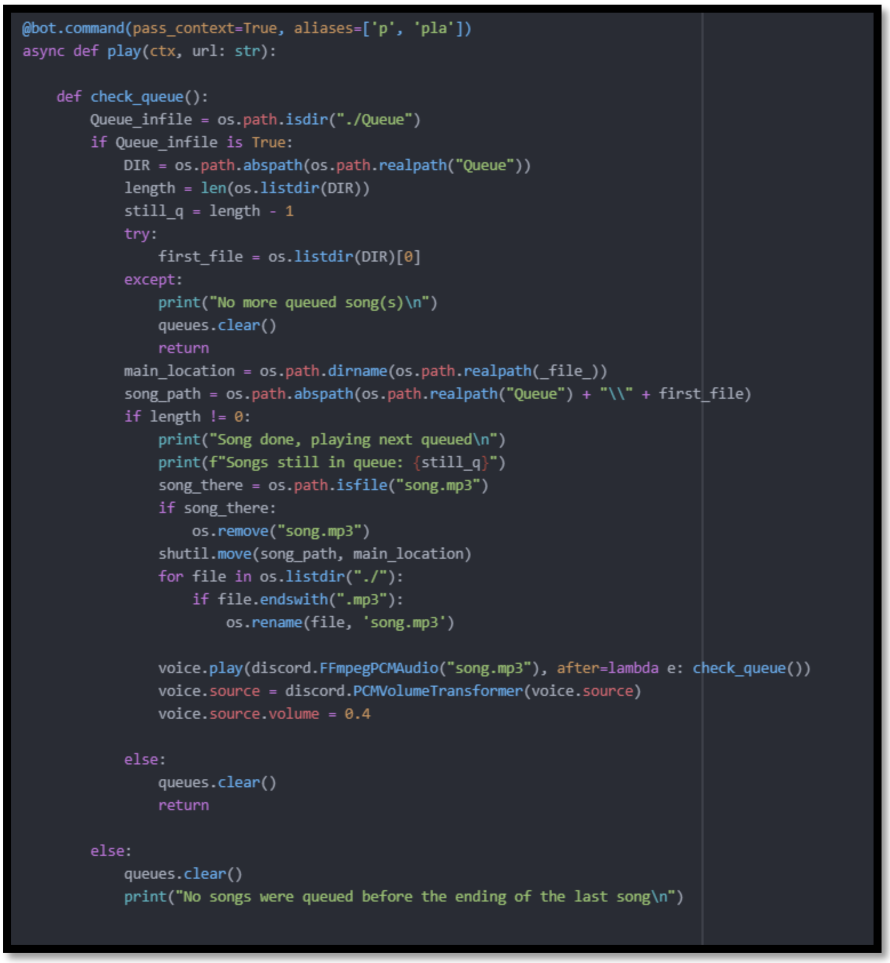
Rival & Cadmium - Seasons (Lyrics / Lyric Video) feat. Harley Bird

Techie BOT Yesterday at 21:35

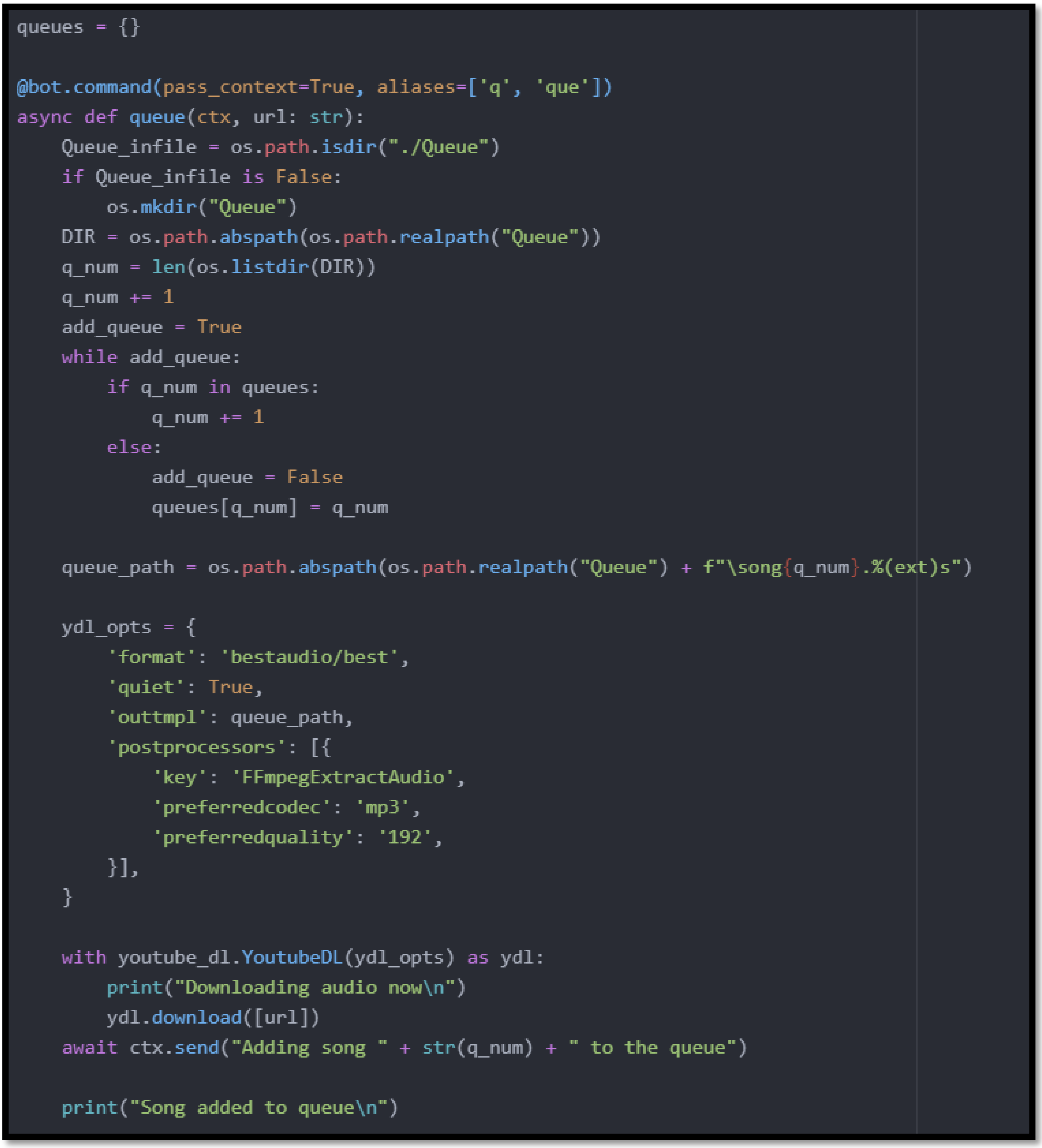
Adding song 1 to the queue



```python
@bot.command(aliases=['mood'])
async def _mood(ctx, *, question):
    responses = ['I am in no mood to watch a cat fight tonight.',
    'Hopefully he would be in a better mood after they got back home.',
    'feeling delightful.','feeling lonely','feeling sad','better than always!','awesome']

    await ctx.send(f'{random.choice(responses)}')

@bot.command()
async def clear(ctx, amount=5):
    await ctx.channel.purge(limit=(amount+1))

@bot.command()
async def kick(ctx, member : discord.Member, *, reason = None):
    await member.kick(reason=reason)

@bot.command()
async def ban(ctx, member : discord.Member, *, reason = None):
    await member.ban(reason=reason)
    await ctx.send(f'Banned {member.mention}')

@bot.command()
async def unban(ctx, *, member):
    banned_users = await ctx.guild.bans() # generates list of banned entries
    member_name, member_discriminator = member.split('#')

    for ban_entry in banned_users:
        user = ban_entry.user
    if (user.name, user.discriminator)==(member_name, member_discriminator):
        await ctx.guild.unban(user)
        await ctx.send(f'Unbanned {user.mention}')
        return
```



```python
@bot.command(pass_context=True, aliases=['p', 'pla'])
async def play(ctx, url: str):

    def check_queue():
        Queue_infile = os.path.isdir("./Queue")
        if Queue_infile is True:
            DIR = os.path.abspath(os.path.realpath("Queue"))
            length = len(os.listdir(DIR))
            still_q = length - 1
            try:
                first_file = os.listdir(DIR)[0]
            except:
                print("No more queued song(s)\n")
                queues.clear()
                return
            main_location = os.path.dirname(os.path.realpath(_file_))
            song_path = os.path.abspath(os.path.realpath("Queue") + "\\" + first_file)
            if length != 0:
                print("Song done, playing next queued\n")
                print(f"Songs still in queue: {still_q}")
                song_there = os.path.isfile("song.mp3")
                if song_there:
                    os.remove("song.mp3")
                shutil.move(song_path, main_location)
                for file in os.listdir("./"):
                    if file.endswith(".mp3"):
                        os.rename(file, 'song.mp3')

                voice.play(discord.FFmpegPCMAudio("song.mp3"), after=lambda e: check_queue())
                voice.source = discord.PCMVolumeTransformer(voice.source)
                voice.source.volume = 0.4

            else:
                queues.clear()
                return

        else:
            queues.clear()
            print("No songs were queued before the ending of the last song\n")
```



```
queues = {}

@bot.command(pass_context=True, aliases=['q', 'que'])
async def queue(ctx, url: str):
    Queue_infile = os.path.isdir("./Queue")
    if Queue_infile is False:
        os.mkdir("Queue")
    DIR = os.path.abspath(os.path.realpath("Queue"))
    q_num = len(os.listdir(DIR))
    q_num += 1
    add_queue = True
    while add_queue:
        if q_num in queues:
            q_num += 1
        else:
            add_queue = False
            queues[q_num] = q_num

    queue_path = os.path.abspath(os.path.realpath("Queue") + f"\song{q_num}.%(ext)s")

    ydl_opts = {
        'format': 'bestaudio/best',
        'quiet': True,
        'outtmpl': queue_path,
        'postprocessors': [{
            'key': 'FFmpegExtractAudio',
            'preferredcodec': 'mp3',
            'preferredquality': '192',
        }],
    }

    with youtube_dl.YoutubeDL(ydl_opts) as ydl:
        print("Downloading audio now\n")
        ydl.download([url])
    await ctx.send("Adding song " + str(q_num) + " to the queue")

    print("Song added to queue\n")
```