DATA 133 - Introduction to Data Science I

Instructor: Renzhi Cao
Computer Science Department
Pacific Lutheran University

Announcements

Extra credit for course evaluation!

>60 %   -   10 bonus homework points

>70 %   -   15 bonus homework points

>80 %   -   20 bonus homework points

>90 %   -   5 bonus points on final exam

>95 %   -   7 bonus points on final exam

100 %   -   10 bonus points on final exam!!!

Video links

- Part 1 discord bot setting: https://youtu.be/8CQcn0docaE

- Part 2 discord bot implementation: https://youtu.be/hF8iovr95po

- Part 3 discord bot on Google Cloud: https://youtu.be/remzWgFsHI4
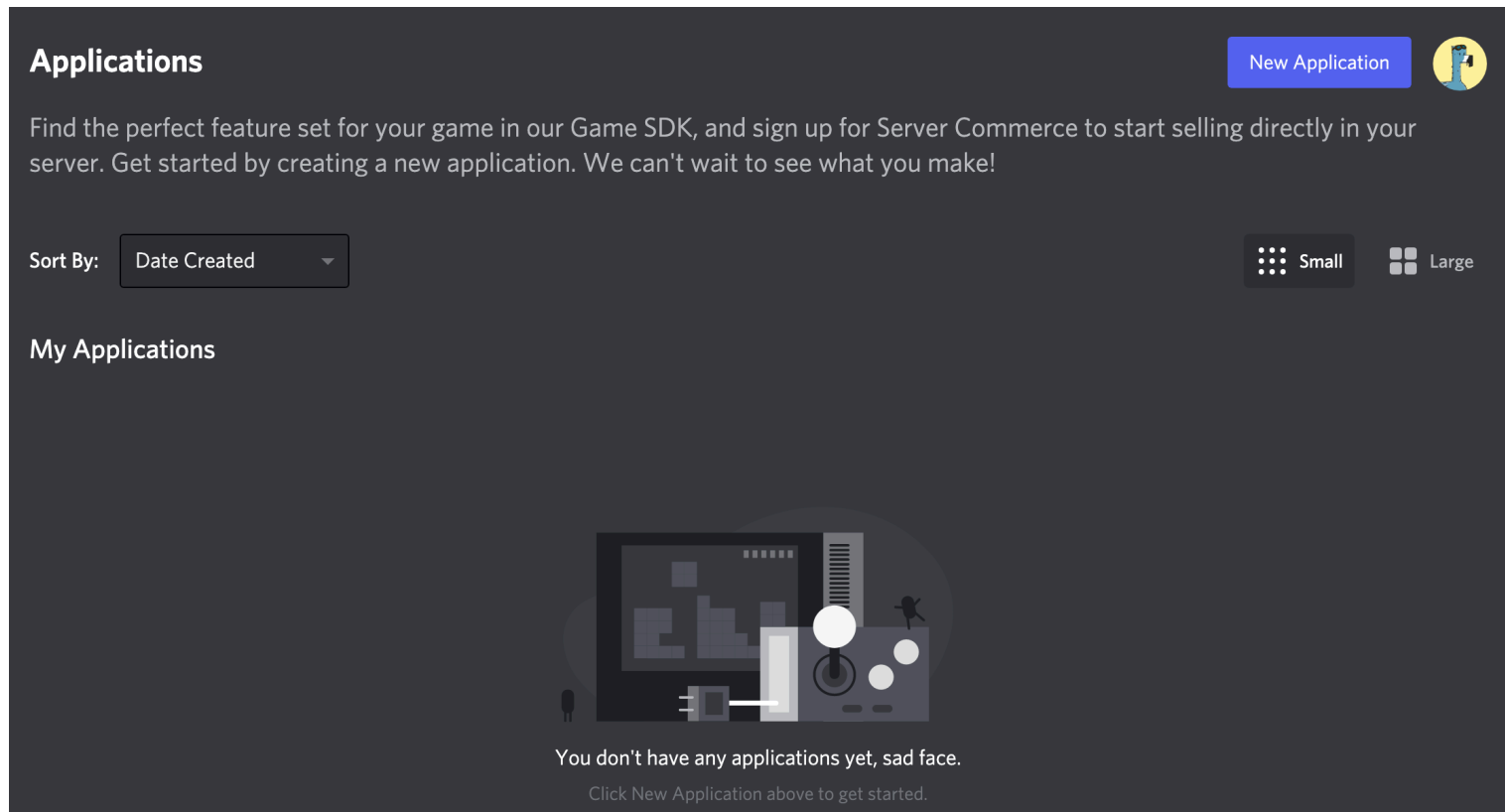
Announcements

- Let's explore the discord bot together. We need the following:

1. An discord account
2. An application
3. A bot
4. A guild

Creating an application

An **application** allows you to interact with Discord's APIs by providing authentication tokens

https://discord.com/developers/applications

Creating a bot

Now we can create a bot by clicking the "Add Bot" button
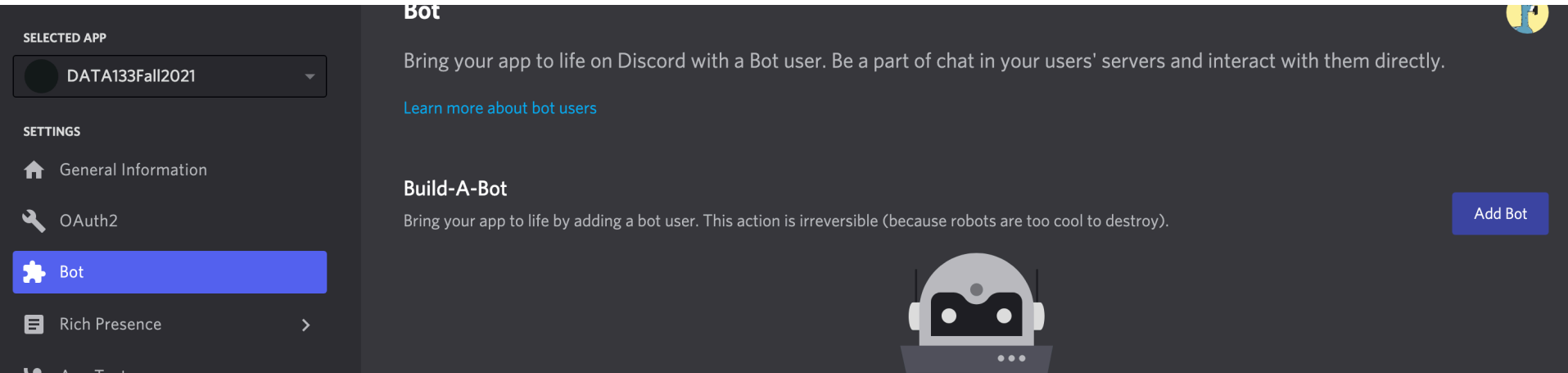
You can rename your bot to any name, like data133bot?
Make sure you save the changes!

Creating a bot

You can change the bot name to something like: data133Bot?

You should also set up the permission for this bot. From OAuth2.

Creating a bot

Now you should Copy the link generated, and we will need it later on

Creating a server

Now you need to create guild / server so that your bot can interact with.

Adding bot to a server

Paste the URL you have copied to the browser. Make sure you have permission to add bot to the channel.

Authorized
You may now close this window or tab.

→ Everyone welcome **DATA133Bot**! Today at 11:29 AM
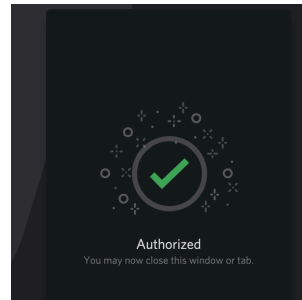
← Back to Applications

SELECTED APP

DATA133Fall2021

SETTINGS

🏠 General Information

🔧 OAuth2

🧩 Bot

📋 Rich Presence ›

👥 App Testers

DEVELOPER LICENSE
• Create store pages in your server
• Run Alpha and Beta tests for your game

SCOPES

- [ ] identify
- [ ] email
- [ ] connections
- [ ] guilds
- [ ] guilds.join
- [ ] guilds.members.read
- [ ] gdm.join
- [ ] rpc

- [ ] rpc.notifications.read
- [ ] rpc.voice.read
- [ ] rpc.voice.write
- [ ] rpc.activities.write
- [x] bot
- [ ] webhook.incoming
- [ ] messages.read
- [ ] applications.builds.upload

- [ ] applications.builds.read
- [ ] applications.commands
- [ ] applications.commands.permissions.update
- [ ] applications.store.update
- [ ] applications.entitlements
- [ ] activities.read
- [ ] activities.write
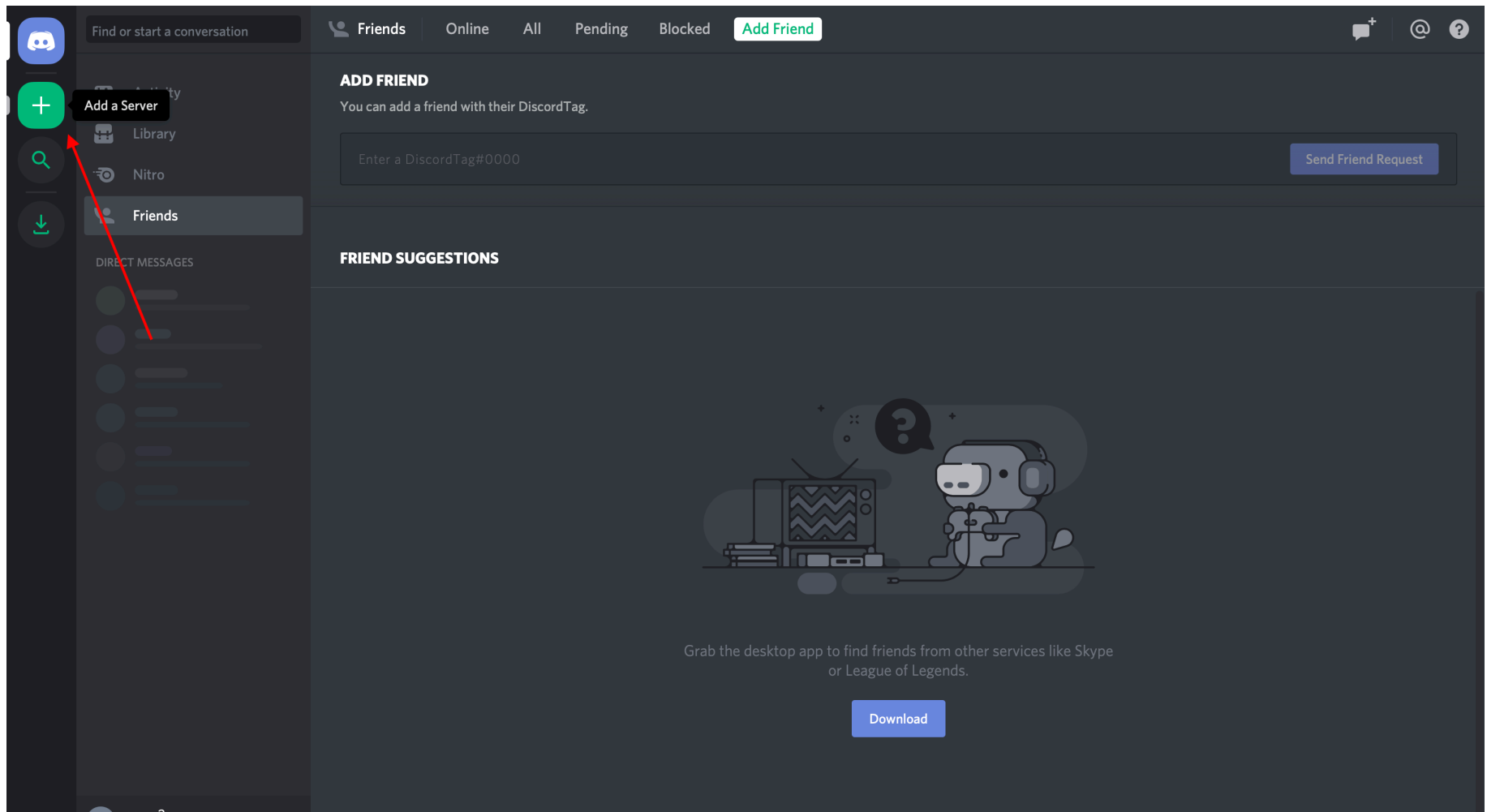- [ ] relationships.read

https://discord.com/api/oauth2/authorize?client_id=910252262134259763&permissions=534723950656&scope=bot   **Copy**

BOT PERMISSIONS

GENERAL PERMISSIONS

- [ ] Administrator
- [ ] View Audit Log
- [ ] View Server Insights
- [ ] Manage Server

TEXT PERMISSIONS

- [x] Send Messages
- [x] Public Threads
- [x] Private Threads
- [x] Send Messages in Threads

VOICE PERMISSIONS

- [ ] Connect
- [ ] Speak
- [ ] Video
- [ ] Mute Members

You are done!

Now you have created and added a bot to your server!!! Congratulations!

Let's implement the bot

Install the discord:

pip install -U discord.py

Let's implement the bot

Now, let's have a try, connect to discord!

Open jupyter-notebook and try:

First, install nest-asyncio, you can do that in the jupyter-notebook:

!pip install nest-asyncio

Second, let's connect to the discord:

```
import nest_asyncio
nest_asyncio.apply()

import discord
TOKEN = "OTExMzI0NTU5MTk2Njg4NDM0.YZfvIg.mdU8xUKGBS6mDVXQVkTErpxsoQk"    # you
should copy your token for your bot
client = discord.Client()

@client.event
async def on_ready():
    print(f'{client.user} has connected to Discord!')

client.run(TOKEN)
```

Let's check the guild

```
DISCORD_GUILD= "DATA 133"        #{your-guild-name}
TOKEN = "OTExMzI0NTU5MTk2Njg4NDM0.YZfvIg.mdU8xUKGBS6mDVXQVkTErpxsoQk"
# you should copy your token for your bot

@client.event
async def on_ready():
    for guild in client.guilds:
        if guild.name == GUILD:
            break

    print(
        f'{client.user} is connected to the following guild:\n'
        f'{guild.name}(id: {guild.id})'
    )

client.run(TOKEN)
```

Let's check the guild

Warning: you may need to restart the jupyter-notebook, since the event is infinite loop to keep the connection….

Let's check the guild

```python
import nest_asyncio
nest_asyncio.apply()
#__import__('IPython').embed()

import discord
DISCORD_GUILD= "DATA 133"        #{your-guild-name}
TOKEN = "OTExMzI0NTU5MTk2Njg4NDM0.YZfvIg.mdU8xUKGBS6mDVXQVkTErpxsoQk"
# you should copy your token for your bot
client = discord.Client()

@client.event
async def on_ready():
    for guild in client.guilds:
        if guild.name == DISCORD_GUILD:
            break

    print(
        f'{client.user} is connected to the following guild:\n'
        f'{guild.name}(id: {guild.id})'
    )

client.run(TOKEN)
```

DATA133Bot#0201 is connected to the following guild:
DATA 133(id: 881245919113277521)

Let's send message

```python
@client.event
async def on_member_join(member):
    await member.create_dm()
    await member.dm_channel.send(
        f'Hi {member.name}, welcome to my Discord server!'
    )
```

Let's send message

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

    bot_quotes = [
        'Hello, I am a bot, 💯 emoji.',
        'Bingo!',
        (
            'happy, cool, happy, cool, happy, cool '
            'no doubt no doubt no doubt no doubt.'
        ),
    ]

    if message.content == 'wow!':
        response = random.choice(bot_quotes)
        await message.channel.send(response)
```

DrCAO Today at 3:16 PM
you are? wow

DATA133Bot BOT Today at 3:16 PM
happy, cool, happy, cool, happy, cool no doubt no doubt no doubt no doubt.

DrCAO Today at 3:16 PM
interesting, hi my dear bot, wow that is cool

DATA133Bot BOT Today at 3:16 PM
Hello, I am a bot, 💯 emoji.

DrCAO Today at 3:17 PM
interesting, hi my dear bot, wow that is cool, can you talk to me?

DATA133Bot BOT Today at 3:17 PM
Bingo!

Google Cloud

All of you should already have the Google Cloud