# Toy7

#### **About:**

Toy7 is a text-based music generator that is integrated with a multi-threaded chatroom. It has been formally structured into a musical work that combines elements of 'scored' and improvised sections. The 'scored' sections are merely proscribed texts that develop a humorous narrative predicated on late-nineties cyberculture. Indeed, on the internet, and in the cultural closure of space and time therewith, everything there is here; everything is mediated; everything is now; and everything is a throwback.

## **Setup:**

List of required materials and staging:

- Six laptops that are WIFI-enabled and have python 3.7 installed on them, one laptop acts as the chat-server, and music generator, and the five others act as chat-clients.
- Appropriate audio output cables to connect the server laptop to the performance space's sound system.
- A sound system with at least two speakers arranged in stereo at the front of the hall.
   Performers can choose to set up a larger array of speakers in front, just know that the program as it stands currently is not designed to do anything further with surround sound or ambisonics.
- A projector and a projector screen to display the chat from the server laptop.
- Highly recommended: your own WIFI router so that TCP/IP routing 'locally' is very simple.

#### Setting Up:

- The server laptop must install pyo (http://ajaxsoundstudio.com/software/pyo/) on their laptop. There are multiple ways to install pyo, either through compiling from the source code, using their installer, git, or brew. It is highly recommended that the server client laptop installs their Python 3.7 and pyo packages to operate in a virtual environment, especially on Mac, otherwise pyo will compile to the native installation of python that comes with OSX (Python 2.7). This will break the main chat\_serv.py and Music\_Handler.py scripts. Further, altering the native installation of Python on your Mac will break some of your programs, or break installations and updates of programs! Email the composer with any questions or concerns (ec.lemmon@gmail.com).
- The server laptop will also need to download both the chat\_serv.py and Music\_Handler.py scripts from <a href="https://github.com/eclemmon/Toy7">https://github.com/eclemmon/Toy7</a>. If they would also like to chat, the server laptop may also do so from a separate shell window. In this case, also download chat clnt.py.

• The chat client laptops must install Python 3.7 and download the chat\_clnt.py script from <a href="https://github.com/eclemmon/Toy7">https://github.com/eclemmon/Toy7</a>.

Once python and pyo have been downloaded and installed, booting the software should be fairly simple. To start:

1. Open the chat\_serv.py file in your favorite IDE, and find the HOST variable. In between the quotation marks, change the string to the IP address that your computer has been assigned. On Mac you can find this information in the System Preferences app under 'Network'. Future versions (after 3/1/19) will not require you to edit the code in line, but will request it from the console.

```
""" Set only HOST and PORT according to your wifi/lan + Client settings"""
HOST = '127.0.0.1'
PORT = 33000
BUFSIZ = 1024
ADDR = (HOST, PORT)
SERVER = socket(AF_INET, SOCK_STREAM)
SERVER.bind(ADDR)
if __name__ == "__main__":
    SERVER.listen(5)
    print("Waiting for connection...")
    #Start formal structure here
    TOY7_STRUCTURE = structure_handler(BOUNDARY1, BOUNDARY2)
    ACCEPT_THREAD = Thread(target=accept_incoming_connections)
    ACCEPT_THREAD.start()
    ACCEPT_THREAD.join()
    SERVER.close()
 QSearch
                                        Network
                      Location: Automatic
   • Wi-Fi
                                        Status: Connected
                                                                 Turn Wi-Fi Off
     Connected
                                              Wi-Fi is connected to NETGEAR50 and has the
   Bluetooth PAN
                                              IP address 192.168.1.6
     Not Connected
   Thunde...lt Bridge
                                 Network Name: NETGEAR50
                                              Automatically join this network
                                                Ask to join new networks
                                                Known networks will be joined automatically. If
```

2. Open terminal and change your directory to the location of your virtual environment and the scripts.

no known networks are available, you will have to manually select a network.

3. Type in source virtualenv\_directory/bin/activate to activate your virtual environment.

```
Toy7 — -bash — 80×24

Last login: Thu Feb 21 13:34:06 on ttys003

[Erics-MacBook-Pro:~ ericlemmon$ cd /Users/ericlemmon/Google\ Drive/My\ Projects/Imacs Projects/Toy7

[Erics-MacBook-Pro:Toy7 ericlemmon$ source Toy7/bin/activate (Toy7) Erics-MacBook-Pro:Toy7 ericlemmon$
```

4. Type in python3 user/path/chat\_serv.py. This can be achieved by following the call to book python with dragging the file into your terminal window on Mac.

```
Last login: Thu Feb 21 13:34:06 on ttys003
[Erics-MacBook-Pro:~ ericlemmon$ cd /Users/ericlemmon/Google\ Drive/My\ Projects/]
Music\ Projects/Toy7
[Erics-MacBook-Pro:Toy7 ericlemmon$ source Toy7/bin/activate
[(Toy7) Erics-MacBook-Pro:Toy7 ericlemmon$ python3 /Users/ericlemmon/Google\ Driv]
e/My\ Projects/Music\ Projects/Toy7/Toy7-Scripts/chat_serv.py
WxPython is not found for the current python version.
Pyo will use a minimal GUI toolkit written with Tkinter (if available).
This toolkit has limited functionnalities and is no more
maintained or updated. If you want to use all of pyo's
GUI features, you should install WxPython, available here:
http://www.wxpython.org/
Pyo warning: Portaudio output device `MacBook Pro Speakers` has fewer channels (
2) than requested (8).
Pyo warning: Portaudio input device `MacBook Pro Microphone` has fewer channels
(1) than requested (8).
Pyo warning: Portmidi warning: no midi device found!
Portmidi closed.
Waiting for connection...
Starting formal structure...
```

5. The server is now booted and ready to accept chat clients.

### Instructions for chat clients:

1. Chatters have it easy. Simply open your terminal or UNIX shell and type in: python3 user/path/chat\_clnt.py.

```
ericlemmon — -bash — 80×24

Last login: Fri Feb 22 10:46:46 on ttys000

Erics-MacBook-Pro:~ ericlemmon$ python3 /Users/ericlemmon/Google\ Drive/My\ Projects/Music\ Projects/Toy7/Toy7-Scripts/chat_clnt.py
```

2. Once you run it (by hitting enter) a chat window will pop up, but it does not work yet. Staying in your terminal you must enter the host's IP Address, which the server laptop

operator will read off to you from their computer's system preferences. They will also tell you the port number to enter, which is set to 33000 by default.

```
ericlemmon — chat_clnt.py — 80×24

Last login: Fri Feb 22 10:46:46 on ttys000

[Erics-MacBook-Pro:~ ericlemmon$ python3 /Users/ericlemmon/Google\ Drive/My\ Proj]
ects/Music\ Projects/Toy7/Toy7-Scripts/chat_clnt.py
Enter host: 127.0.0.1
Enter port: 33000
```

3. Your chat window is now operational, but you must enter a user name before you can begin chatting. If all goes according to plan, once you enter a user name, you will hear the old AIM 'door open' sound.



4. You may now chat away and it will create sounds!