

# **Project 1**

Cloud music player

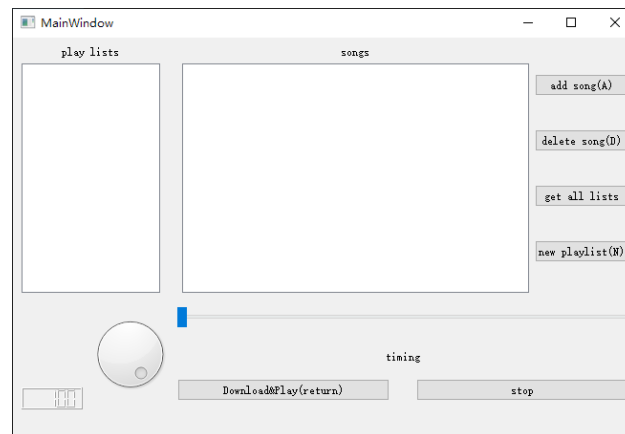
**CSE205(17/18)**

**Introduction to Networking**

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## Features



This program is based on socket programming and PyQt5

Most data are stored at server, the clients only have binary data of mp3 files named by md5 ID.

The list of playlists (allList.txt) will update every time when client click get all lists, it will scan all the txt files in serverData folder. Therefore, the client can not only add new list by clicking newlist button in GUI, but also by putting txt file into serverData folder.

The songs in server are all from clients, which means that if the server end does not have any songs, the clients must upload files to server firstly (before doing this, clients need to create a playlist). Therefore, if client has a playlist while server do not have mp3 files from the list, the client cannot play them, because every time clients click play button, the client program will download the song from the server. However, the situation above will not happen if the server does not delete the songs without operation from client. So please make sure that clients operate within GUI, and nobody touches the folder (serverData) in server end.

## Implemented functions

### All the required functions are implemented

1. Upload mp3 files to server.
2. Allow clients to create playlists and upload to server.
3. Get the list of available playlists.
4. Download a playlist chosen by client.
5. Download a song by songID (MD5).
6. Add and remove songs not only from a playlist, but also delete them in server end and client end.
7. A client player with graphical user interface based on PyQt5.
8. One issue: the assignment does not ask to implement the function of deleting a list from server. Therefore, this function, which is supposed to be quite important, is not designed.

## Instructions

### Test environment and required library:

- Windows 10
- Python 3.6.3
- PyQt5 (5.9.1)
  - Input 'pip3 install PyQt5' within cmd.exe, PyQt5 and sip will be installed automatically
- sip (4.19.5)

## Run:

Python mainwindow.py

Python server.py

## Known bugs

1. [Errno 10053] An established connection was aborted by the software in your host machine
2. [Errno 10054] An existing connection was forcibly closed by the remote host

3. When player play some of mp3 files, it may occur this error

DirectShowPlayerService::doRender: Unresolved error code 0x80040266  
(IDispatch error #102)

This bug is caused by Microsoft DirectShow. More details in

<https://bugreports.qt.io/browse/QTBUG-51692>

After doing some researches on the Internet, I found these bugs above are hard to fix. Fortunately, occurrence frequency of these bugs is acceptable.

Another bug is that after users creating one playlist and adding a song to the list, if users want to create one more playlist, the former list could not save. The frequency of this bug is higher than those 3 bugs above and also hard to fix.

## Internet sources

Qt Documentation: <http://doc.qt.io/qt-5/>

Python socket: <https://docs.python.org/3.6/library/socket.html>