Introduction

ZiqueDB is a desktop application intended initially to manage my own collection of Irish tunes (Those I play or I want to learn). The main features are :

- Search engine
- Score display
- Tune annotation: (How you like it, how you play it, free comment...)
- Midi playing
- MP3 playing with speed and pitch adjustment
- Tune editing (using MuseScore as an companion application)
- Tune import in ABC format (typically from “thesession.org”)
- sets, lists creation
- ...

Important: As of now, ZiqueDB only runs on a Linux desktop. A Windows version could be considered if there is a demand for it but some help would be needed.

Note that MP3 playing depends on your own collection MP3 files.

Technical details:

- Go application using GTK3
- sqlite database with gorm (ORM)
- depends on an external midi synthesizer such as fluidsynth
- Intensive use of MuseScore4 is used for tune editing and format conversion (=>musicxml, svg)
- Use of abc2xml (and therefore on python3) for ABC import
- Use of rubberband library for speed and pitch adjustment when playing mp3
- Tunes are stored in musescore format (.mscz) and derived files are created for different purposes (play midi and display)

Prerequisites

- on linux systems:

- GTK3
- Fluidsynth
- Rubberband library
- Some sound system (ie : pipewire)
- python3 (for ABC files import)
- sqlite3 library
- Musescore4 (that can be downloaded as a portable app from https://musescore.org/)

Debian packages: libgtk-3-common, pipewire, rubberband-cli, libsqlite3-0

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In addition, in order to build the application:
- the go development system that can be downloaded from https://go.dev/ (version >= 1.23.4) with CGO enabled
- gcc
- development libraries (Debian packages : libgtk-3-dev librubberband-dev libasound2-dev libsqlite3-dev)

As Musescore4 is distributed as a portable app, it should be “installed” and made accessible from the path with the name MuseScore4. For example, after download:

```
chmod +x MuseScore-Studio-4.5.2.251141401-x86_64.AppImage
MuseScore-Studio-4.5.2.251141401-x86_64.AppImage install
ln -s ~/.local/bin/MuseScore-Studio-4.5.2.251141401-x86_64.AppImage \
 ~/bin/MuseScore4
```

Application installation

Binary install:

Get the binary from https://github.com/py60800/ZiqueDB/bin and make it available from the path (ie. install it in ~/bin folder)

Source install:

using go version > 1.23.5
and development libraries (Debian packages : libgtk-3-dev librubberband-dev libasound2-dev libsqlite3-dev)

from an empty directory :

git clone https://github.com/py60800/ZiqueDB
go build

or

go install github.com/py60800/ZiqueDB@latest”

- get the binary from bin folder
or build it from the source
something like “go install github.com/py60800/ZiqueDB@latest” should do the job

Prepare your environment

locate your MP3 files:
By default, ZiqueDB will search for all MP3s in the folder ~/Music/mp3 (including subfolders). Additional local repositories can be added using the Config menu.

Note that usual MP3 tags are used to index MP3 files (Artist, Album, Title). Sample rates other than 48000 or 44100 Hz may not work.

Create a directory to collect the tunes :
The recommended structure looks like :
~/Music/MuseScore/<TuneKind>/
with a subdirectory per tune kind.
A sample file is provided (https://github.com/py60800/ZiqueDB/samples) for new users:

```
mkdir ~/Music/MuseScore
cd ~/Music/MuseScore
unzip sample.zip
```

On the first run ZiqueDB will expect this environment but it can be changed later from the “Config” menu.

Launching the application

A MIDI synthesizer must be available before the start of ZiqueDB, it can be launched manually but it's better to use a script. Here is an example that checks if the synthesizer is active and launch it if not:

```
#!/bin/sh
aplaymidi -l | grep -i synth
if [ $? -ne 0 ] ; then
fluidsynth -a pulseaudio -q -si \
/usr/share/sounds/sf2/FluidR3_GM.sf2 &
   sleep 1
fi
~/bin/ZiqueDB -d ~/Music/ZiqueDB &
```

On the first run, ZiqueDB will create a working directory to hold the database and some configurations files (that can be adapted to your needs).