



8 Bits CPU Simulation Documentation

Computer Organization and Architecture

Software Engineering Program,

Department of Computer Engineering,

School of Engineering, KMITL

67011093 Chavit Sarutdeechaikul

67011352 Theepakorn Phayonrat

Preface

Hello, World!

Abstract

This project, titled QtGroove, presents the design and implementation of a music player application developed in the C++ programming language with Qt GUI framework. As part of the Object Oriented Programming course in Software Engineering at KMITL, QtGroove was created to develop a user-friendly multi-platform music player in C++ programming language that provide users with typical features found in general music player.

Contents

1	Introduction	4
1.1	Project Overview	4
1.2	Background	4
1.3	Objective	4
2	Project Overview	5
2.1	Design	5
2.1.1	Program Overview	5
2.2	Database	7
2.2.1	playlist.db	7
3	Installation and Execution Guide	8
3.1	Git Clone from the Remote Repository	8
3.2	Alternative way for Windows users	8
4	Summary	9
4.1	Learning Outcomes	9
4.2	Accomplishment	9
5	References	10
6	Appendix	11
6.1	Github Repository	11

Chapter 1

Introduction

1.1 Project Overview

QtGroove is a graphic-based music player written in C++ using the Qt framework. The project aims to be a lightweight music player with a friendly user interface.

QtGroove will have the functions of a typical music player like a file browser, the ability to make playlists, showing music file info, and having a bit of extra functions like speed up playback or player customization.

1.2 Background

We wanted to create our own multi-platform GUI music player, which is efficient to navigate through the UI with low learning curve.

1.3 Objective

This project aims to create a lightweight and multi-platform music player as an alternative to other music players. The app can be great for listening to local music files. The making of this app also serves as an experience for us to learn C++ and work with the Qt framework.

Since this is a duo project, it is a great opportunity to learn teamwork and strive to make the best products.

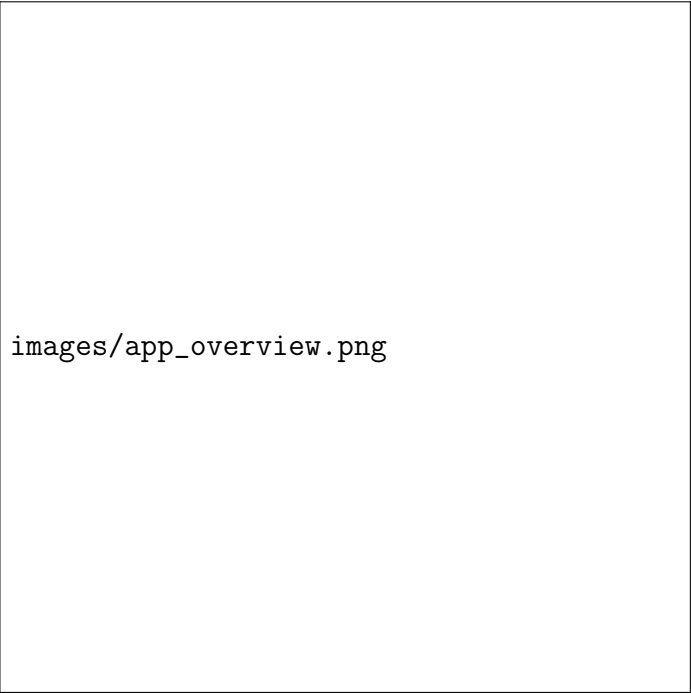
Chapter 2

Project Overview

2.1 Design

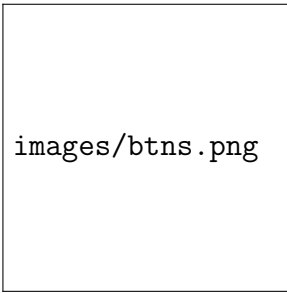
2.1.1 Program Overview

We have 3 main sections in our application.



`images/app_overview.png`

And here are our buttons.



2.2 Database

We use SQLite for our database.

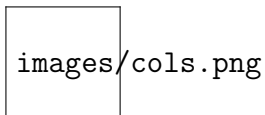
2.2.1 playlist.db

We created playlist.db in the 'db' directory and that file will be our main database file.

Our 'playlist.db' has default table named 'playlists' to keep track about our playlists' existences



And in each playlists has their own columns which store the data.



Chapter 3

Installation and Execution Guide

3.1 Git Clone from the Remote Repository

```
git clone https://github.com/Pottarr/QtGroove.git
```

After that open project in Qt Creator, and run the program.

3.2 Alternative way for Windows users

You can download pre-release version (v0.1) from GitHub too. (Link in Appendix)

Chapter 4

Summary

4.1 Learning Outcomes

- We have learnt fundamental of concepts of creating good UX and UI.
- We have learnt how to develop multi-platform application using C++ Qt.
- We have learnt the workflow of project developing.
- We have learnt how to use Version Control to help developing application.

4.2 Accomplishment

We have created a user friendly multi-platform music player application.

Chapter 5

References

- Qt Group. (2025). *Qt Documentation*. Retrieved from <https://doc.qt.io/>

Chapter 6

Appendix

6.1 Github Repository

<https://github.com/Pottarr/QtGroove>