

# Graph Application in Major Chord Progression

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**Abstract**—Musical notes are the basic foundation of a song notes combine into chords, and a collection of chords makes a complete song. This paper will explain how each chord interacts with each other in a song with a graphic analysis.

**Index Terms**—graph, chord, music, art.

## I. INTRODUCTION

Music has been a part of human culture since ancient era. It became a fundamental art in most cultures, and an identity to other cultures. Music changes as civilization changes. As of now, music is still adapting to cultural evolutions.

Even with all that change, music still share the same foundation: notes. A good arrangement of notes makes a good music. Some notes also blend in a harmony and become chords. Combine those two, and we get a complete song.

Problems arise when people learns music for the first time. Not all notes can be tied together to make a chord, and there are rules in arranging chords to a sequence of chords. These sequences of chord are what we call chord progression.

## II. BASIC THEORY

### A. Note

In music, the term note has a meaning of a sign used in musical notation to represent the relative duration and pitch of a sound.

In traditional music theory within the English-speaking and Dutch-speaking world, pitch classes are typically represented by the first seven letters of the Latin alphabet (A, B, C, D, E, F and G). We will use this representation in this paper.

### B. Chord

A chord in music is any harmonic set of two or more notes that is heard as if sounding simultaneously.

### C. Chord Progression

A chord progression is a series of musical chords, or chord changes that "aims for a definite goal" of

establishing (or contradicting) a tonality founded on a key.

### D. Key

Key refers to the tonic note and chord, which gives a subjective sense of arrival and rest. Other notes and chords in the piece create varying degrees of tension, resolved when the tonic note and/or chord returns. The key may be major or minor.

In this paper, we are going to use major chord progression in C key, which is widely used to teach basics of music.

## III. CHORD PROGRESSION

In C major key, there are seven chords: C major, D minor, E minor, F major, G major, A minor, and B diminished. For simplicity, we will use the first letters only (i.e., C, D, E, F, G, A, B).

In major key, a song always starts and ends with the key chord. In our case, it is the C chord. From C, we can go to any chord we want. When we want to end a song or a part of the song, we use the C chord. The following table shows what chord may be used after another chord.

	C	D	E	F	G	A	B
C		1	1	1	1	1	1
D	1		0	0	1	0	1
E	1	0		1	0	1	0
F	1	1	0		1	0	1
G	1	0	0	0		1	0
A	1	1	1	1	1		0
B	1	0	0	0	0	0	

Table 3.1 Tabular Graph Representation

From table 3.1, we can make the graph representation.

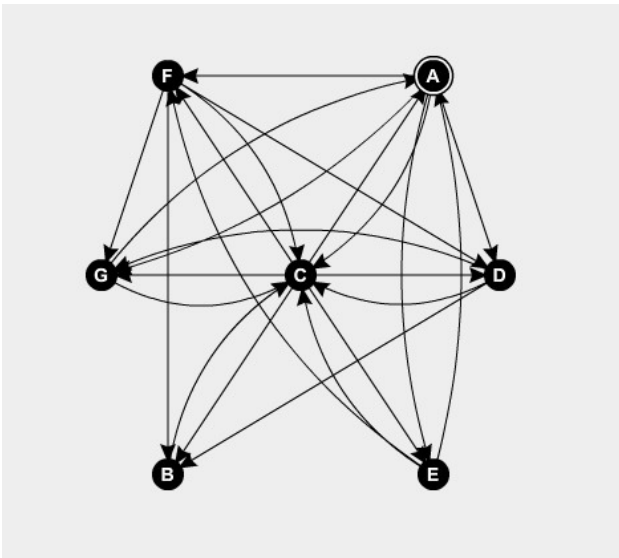


Figure 3.1 Directed Graph representation

From the graph, we can make simple chord progressions, such as:

- C-F-G-C
- C-A-F-G-C
- C-G-A-G-F-C-G-C
- C-A-D-G-C
- C-D-B-C

And many more sequences combination. This progression makes writing a song easier. This also helps musicians trying to decipher chords in a song ( e.g., after the F chord, it is unlikely that A chord is what follows).

#### IV. EXAMPLES

In this section, the writer would like to present some songs which are written in C major key. All of these starts with an intro of C chord and ends with an outro of C chord too. Here we are going to examine chords used in each song.

My Chemical Romance – I Don’t Love You

Verse : C-A-G-C

Chorus : F-G-A-E-D-F-G-C

Ungu – Demi Waktu

Verse : C-A-F-G

Chorus : C-A-F-G

Kuburan – Lupa Lupa Ingat

Verse : C-G

Chorus : C-A-D-G

Five for Fighting – Superman

Verse : C-G-A-F

Chorus : C-G-A-F-C-G-F-C

Interlude: A-G-F-A-D-A-D-F-G

Slank – Ku Tak Bisa

Verse : C-E-F-C-G

Chorus : D-F-C-G

We see that in “I Don’t Love You”, “Superman”, and “Ku Tak Bisa”, there are D-F chord sequences. This is

normal. Chord progression is only a guideline, not a rule. Advanced musicians may use irregular chord sequences, but as long as it subjectively sounds good, it is acceptable.

#### V. CONCLUSION

The directed graph representation significantly helps us in understanding chord progression and how it works. There are many combination of chord sequences just from one chord progression, and we do not always need to use all chords from the chord progression for just one song.

However, as shown by the examples, the chord progression is more of a guideline rather than rule. It is okay for musicians and composer to be creative and try chord sequences outside the progression.

#### REFERENCES

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#### PERNYATAAN

Dengan ini saya menyatakan bahwa makalah yang saya tulis ini adalah tulisan saya sendiri, bukan saduran, atau terjemahan dari makalah orang lain, dan bukan plagiasi.

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