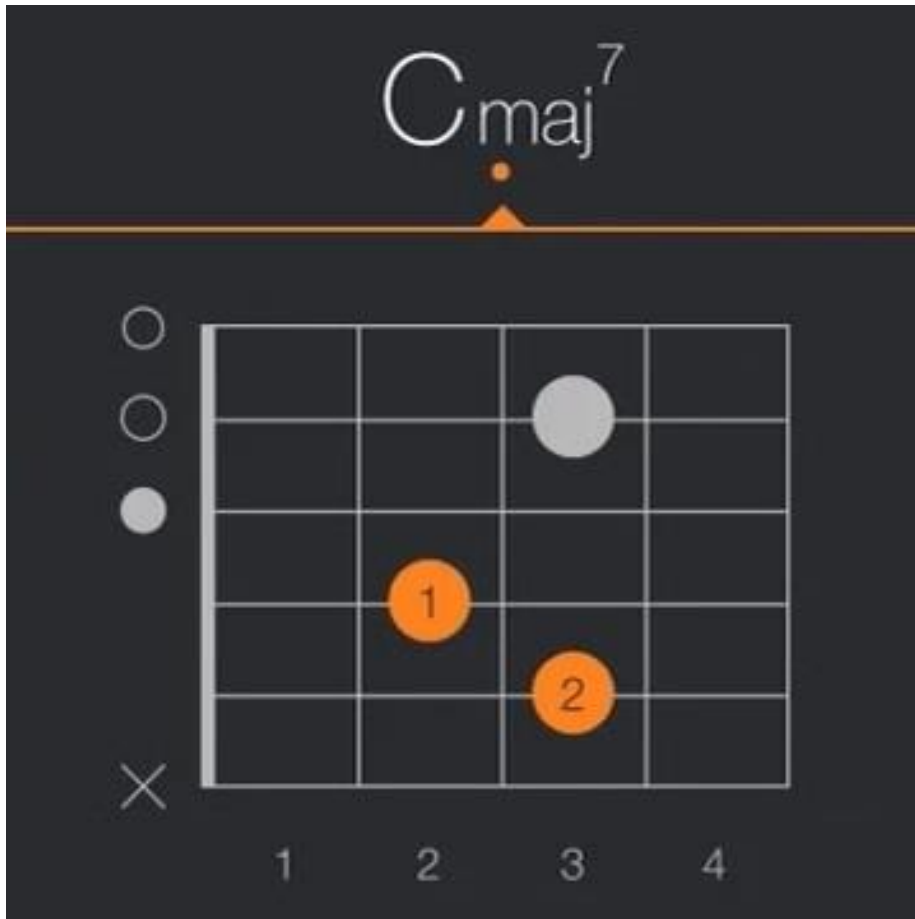


GUITAR CHORD PROGRESSION WEBSITE

Project Plan



Alan Colquhoun

TABLE OF CONTENTS

1.	PROJECT BACKGROUND	3
2.	STAKEHOLDERS	8
3	SCOPE	11
4	DELIVERABLES	13
5	CRITICAL ASSUMPTIONS	18
6	PROJECT ORGANIZATION	19
7	COMMUNICATION PLAN	20
9	PROJECT METHODOLOGY	24
10	PROJECT SCHEDULE	27
11	RISK MANAGEMENT PLAN	27
12	BUDGET	29
13	QUALITY PLAN	30
14	APPENDIX	32
	14.1 Song Timeline	32
	14.2 Lennon: Banjo Chords	35
	14.3 Circle of 5ths	36
	14.4 Use Of Cadences	36
	14.5 Use Of Roman Numerals	37
	14.6 Beatles Info & Progression Diagrams	37
	14.7 Content: User Interface etc.	38
	14.8 Scales and Chords	39
	14.9 Task Breakdown	40

PROJECT PLAN

1. PROJECT BACKGROUND

Reed Music Publishing is a company located in Vancouver, BC that publishes music for guitar classes in the education sector under the direction of Randy Reed. A professional guitarist since the 1960s, Randy decided it was time to create a music website based on his friend's research, that could interactively show the underlying music theory associated with well-known compositions like Honey Don't, That'll Be The Day and Long Tall Sally. Organized by [key](#), the listing in the [appendix](#) covers a period between April 1956 and May 1959 as seen in Beatles.xlsx. Like each of the Beatles, Robert Smith, is himself, a guitarist and has learnt music largely by ear.

At the start of 2019, Robert was put in contact with me by Randy. He learnt that I had developed music theory websites, including one that was of particular interest to him: [chord progressions](#). A qualified Web designer, as well as instructor, I recognized the value of Robert's ongoing research: showing the development of Beatles music. They didn't simply come out of nowhere. Songs such as [Where Have You Been All My Life](#) have lesson possibilities -- before and after its place within a larger timescale (Beatles.xlsx: Paul McCartney, 189). Part of this song's appeal is its vocal harmony. The arrangement is based on a [Hamburg recording](#) (December 1962).

Finding that we both had an interest in Beatles music, it was agreed that my project team would develop all content at 30% off.¹ Like my chord progressions site, the new music website would be for guitarists, who themselves *cannot read music written with 5-line music notation*. The approach, while taking music theory into account, is to focus on [instrumentation and vocals](#) as well, for music is not just theoretical. To help those appreciate what it took to deliver the music we all know about today, any teaching of music theory needs to be "framed" around the era in which it was created². As specified by Smith, the website needs to be delivered within four months and include:

- A website comparable to my [music theory sites](#)
- Include a guitar chord interface like that at [chordbook.com](#)
- An Interactive Circle of 5ths like that of [Rand Scullard](#)

¹ Randy has agreed to pay all employees 30% more for their work. The project is being delivered to a friend of his and he is charging Robert Smith 30% less than would normally be charged.

² Most of the Beatles' music falls between [1962 and 1970](#).

- Based on a selected key via the Circle of 5ths, the website should show possible diatonic chord changes ($vi \rightarrow V$, $V \rightarrow IV$, etc.) with percentages of them likely occurring.³
- As shown on p. 5, chord progressions are defined by [roman numerals](#). All musicians should be familiar with this concept, whether they can read music or not.

Roman numerals are used in the analysis of music, in particular the chord progressions used in sections of a song. Referring to its form, all Beatles music has been studied ad-nauseam, in particular by [Alan Pollack](#) (Notes On series). What distinguishes my own, as well as Robert's website, is new research about what is at the core of early Beatles' compositions: [diatonic chord progressions](#). This inevitably delves into music theory, something the Beatles would have taken for granted, for they had no concept of what a key signature was. They were more familiar with [Beatlemania](#) that emerged because of their music. Over time, their music changed, but underneath the mania is a foundation that reveals a lot about their music composition. Their songs were not written in isolation and involved 4 parts: lead, rhythm, bass, and drums.



At the heart of the Beatles' music are diatonic chords. As [Scott Freiman](#) points out, they often substituted major IV chords with minor iv chords. In order to allow students to discover underlying music theory, the use of roman numerals is central in any analysis. With [Penny Lane](#), one can hear what makes Paul McCartney one of the greatest composers to have emerged from the 1960s. But he did not learn how to write music overnight. By 1967, he learnt to use [7th and](#)

³ This is based on 1950s chord changes, as well as those used by the Beatles from 1956-1959. How often chord changes occurred in [music phrases](#) are to be stored in a MySQL database. Both PHP & MySQL are necessary to carry out the project.

sus chords. In the video, there is an analysis involving written 5-staves music. This would have to be translated for those who do not set out to study music theory involving 5-line staffed music. What is remarkable, is that by 1967, this came naturally to McCartney, for he had little knowledge of music theory. Having learnt to compose diatonic compositions like “She Loves You” and “I Want to Hold Your Hand,” their music obeys *relationships* based on the following charts -- and where the composer is taking us. The Beatles were the first composers to also perform their music, whether recorded with vocals or not.

I Tonic	⇒	Anything
V Dominant	⇒	I, IV, vi
IV Subdominant	⇒	I, V, vi
vi Submediant	⇒	V, IV, ii, (I)
ii Supertonic	⇒	V, IV
iii Mediant	⇒	vi, (I)

Cadences ³	
Authentic	V ⇒ I
Plagal	IV ⇒ I
Half	Anything ⇒ V
Deceptive	V ⇒ Anything but I
Cadencial ⁶ ₄	I ₄ ⇒ V ⇒ I

4

I am a composer and have an interest in jazz. For the most part, it is outside of the bounds of the website. Diatonic progressions are its foundation. Diatonic chord progressions are also used by [Bill Holman](#). With such a diverse interest in music, I am not the first person to have a strong interest in music. Both of my uncles played professionally in Canada and Japan. One of them even knelt before the Queen during the Queens Jubilee in May 1971 as he was the school's band leader (concert band and jazz band). When Randy formed Reed Music Publications in September 2011, he knew that he could rely on both his brother and nephew.⁵ Eventually, I introduced him to a site called [Hook Theory](#),⁶ which allows one to select a key and explore chord changes.

The audio portion of the website is being purposely delayed until after this project – as another project associated with the website will follow that **does include audio-based content with the use of virtual instruments**.

⁴ A 5-Staves reference to the Cadences diagram on the right is shown in the appendix. 5-Staves references like this will eventually enter the planned website, but is currently out of scope. ***This knowledge can be picked up by ear.***

⁵ This company does not actually exist. Neither does “ARC Music.”

⁶ Associated with Phase 1, users will see applicable chord changes, as well as possible vocal excerpts. This could possibly influence user interface design – and subsequent PHP & MySQL development.

Interested in the study of music, like that presented at [Walk That Bass](#), I wish to do the same for Beatles music (with the exception that no standard music notation will be used; notes and note durations are not applicable). Both jazz and Beatles music share two things: tension and resolution – that are all within musical phrases or [sentences](#) as discussed at *Open Music Theory*. A lot of Lennon and Harrison's choice of chords in his music phrases are illustrated by [Music Box Rox](#) (augmented chords, that were first likely learnt in Hamburg). One of Lennon's [compositions](#) has so many “yeahs” in it, it must have some connection to She Loves You. [It does](#). “It Won't Be Long” was written after it. In October, it was followed by another blockbuster: I Want To Hold Your Hand, which has been copied by various cover bands since. Ironically, they may have [rescued classical music](#) in the 1960s. McCartney learnt it's concepts and taught them to Lennon, who then also employed them.

I Want To Hold Your Hand's [vocals](#) may sound like they are simple, but there is a lot of experience under their belts by this point. The vocals and instrumental parts are put together in a specific manner. Later all of their chord progressions used in backing tracks will be stored in a database. There is a lot at play here in *4 different instruments*. When one removes the vocals, one can often discover things that one's ears may not have initially picked up. Even though the focus of the site is chord progressions used in musical phrases, Beatles' vocals usually behave in accordance with scales associated with chord choices. The [rhythms](#) used are a bonus aspect of their music. Compare the [lead part](#) and consider that neither can be played on one guitar.

Part of the website's focus is scales and chords associated with chord progressions. One can even show the lead and rhythm chords used that belong to the same type of chord (e.g. an open G-major: 320003 and a barred G-major chord: 355433), no matter how likely they would occur. Part of the goal of the website is to show fretboard positions used via guitar chord diagrams and guitar tabs. In this case, the use of music theory is a high possibility. None of the Beatles, however, knew any music theory, even though [McCartney](#) may have picked it up later. His interview about composition is quite revealing. He even talked about using [software](#). He actually has to physically listen to what he is creating.

Eventual Inclusion of My Own Compositions

Behind this website is a hidden motivation to sell my own compositions and I will eventually analyze *how they composed music over time* based on their influences. Musical form is important to any composition and creation of [motifs](#). Bach is one of the greatest composers that ever lived and his compositions are quite mathematical (use of [counterpoint](#)). It is also used in jazz ([Bill Holman](#) for example). One can learn a lot from another composer, even Paul McCartney. He is quite [humble](#) about his music and where it is going.

Robert Smith and Use of Outside Music Sources

During the project, Robert Smith plans to use GuitarInstructor.com and Chordify to generate chord progressions based on his 100-song listing as contained in appendix 14.1. He will give me the chords used by March 13th, assuming that the project starts on February 28. He would like to have a working prototype by May or June. Having gained an understanding of computer-based composition from me, music theory such as that at *Walk That Bass* bridges the gap between non-staff based compositions and 5-line staff compositions. McCartney has come full circle and began writing with [Lennon](#). In some cases, the covers that people create of their compositions are, as McCartney says, “all good stuff.” The one thing that is important to him is that *what he creates* is “different” than what came before (0:32: [Classical Music](#)) “Hopefully, then anything that I write is more original.” Back in the 1950s & 1960s, there was a lot of [musical influence](#) from various sources. They were lucky to [have succeeded](#) in the first place.

Music Theory: Graphic Design

The content of the website is associated with two image documents⁷, which contain images like those that will be created by Robert Anderson’s graphic designers. Applicable to music theory and Robert Smith’s research, the content contains various resources from my chord progressions site. It also contains Robert’s original research, which was expanded upon in Beatles.xlsx. Some of the content, however, is out of scope. *The website is designed for those who cannot read music that is written with 5-line staves*. Only certain aspects of music theory are covered. Intervals are not one of them. Most of the compositions stick to basic I, IV and V transitions

I = Root	\	
IV = Fourths	>	Roman numerals are associated with music theory ⁸
V = Fifths	/	

Education

Eventually, the music website will be introduced to music teachers and their students. In coordination with Janice Clark, an initial user group has been established to test the website in May, under the direction of Steven Powers, a music instructor. As well, a video promoter has expressed interest in doing promotion work for the website once it is ready in beta form. The development team uses agile and are led by Ken Starr and Susan Smith (scrum masters).

⁷ Music_Theory_1.pdf and Music_Theory_2.pdf (Resources folder, PDFs)

⁸ A lot of information can come from 5-line staff music equivalents. See the [appendix](#) for use of roman numerals re: music theory content areas.

2. Stakeholders

Many of the stakeholders are musicians and within the same family. Randy Reed, Rick Reed, and *Alan Colquhoun* are all related. Both Rick and Randy played professionally in B.C. and Japan (guitar, bass, clarinet, and trumpet. I followed in their footsteps and played alto saxophone in his junior & high school concert bands and jazz ensembles. This, in turn, spawned an interest in music composition. Having composed music since I was 16, I also have music skills (piano, alto saxophone, and guitar). Due to my technical back-ground, I also have experience with music software and composition.

Internal Stakeholders	Project Role	Responsibility
Randy Reed (CEO)	Project Sponsor	Provides requirements and guitar resources to his nephew Alan. Checks the website's content for accuracy. Professional musician and primary guitar instructor to students. Professional musician.
Alan Colquhoun	Project Manager Web Designer	Oversees all Web design and development for the project in association with Janice Clark (Music Education). Supervises development of the main user interface (front-end).
Rick Reed	Project Advisor Luthier	Provides advice regarding Web content. Is one of the project's subject matter experts. Provides information regarding guitar equipment and Hofner basses. Musician.

Janice Clark	Music Education	Responsible for all music instruction and content online & in publications. Is the primary contact for external publishers and music teachers.
Ken Starr	Systems & Analysis Agile Scrum Master	Responsible for all Systems Analysis and Design documents. Also acts as scrum master for Susan Smith's development team
John Smith	Database Administrator	Database Design and performance monitoring. Provides database table access to users. Controls database access, permissions, and privileges. Develops, manages and tests back-up & recovery.
Susan Smith	Web Development	In coordination with her assistant Alan, Susan handles all PHP and MySQL development. Handles all back-end development.
Robert Anderson	Design & Printing	Oversees all design work and printing. Works with Alan & Janice to create all required resources, except coding. Works with Janice regarding any multimedia requirements. Web designer.

Robert Smith	Product Owner End-User	Provides all chord progressions used based on his research (partly derived from MP3s). Receives all project documents and signs off all work. Leads website tests and suggests improvements.
Edith Clark	End-User	Provides proofreading and legal advice as needed. Has relevant music knowledge applicable to the website (classical guitar); checks all music theory.

External Stakeholder	Project Role	Stake in Project
Steven Powers	Music Instructor	Responsible for a small user group (music theory students). Provides feedback to Janice Clark.
Nancy Wallace	Video Promotion	In coordination with the Marketing department, handles all YouTube promotion of website (outsourced).
Keith Miller	Music Publisher	Handles third party music publication at times for Reed Music Publishing when they cannot handle client requirements.

3 Scope

Overview

Based on 4 measure chord progressions used in 100 compositions, as listed in [appendix 14.1](#), the website will access stored chord transitions that contain probabilities of occurrence, like that at Hook Theory ⁹. With respect to music theory, the [Circle of 5ths](#) as depicted in Figure 1, as well as derived [scales and chords](#) are currently within scope.¹⁰ *Limited by the selected month*, the website will show chord progressions used *collectively* by such artists like Elvis Presley, Little Richard, Chuck Berry, and Carl Perkins. These artists laid down the groundwork that influenced Lennon & McCartney's compositions.

In Scope

- Show chord progressions used in verses, choruses, and bridges
- Allow one to explore chord progressions – as used in music phrases
- Indicate how long a chord lasts in a progression
- See used lead and rhythm chords
- Display any chord extensions used (6ths, 7ths, and 11ths)
- Use of 6 major keys: F, C, G, D, A, and E
- Use of 2 minor keys: Em and Am
- Allow the user to change the applicable key
- See fretboard positions used
- Music theory related to chromatic scales
- Music theory related to the Ionian and Aeolian Greek modes
- Music theory related to the Mixolydian and Dorian Greek modes
- Music theory related to these major scales: F, C, G, D, A, and E
- Music theory related to these minor scales: Dm, Am, Em, Bm, F#m, and C#m
- Music theory related to these major triads: F, C, G, D, A, and E
- Music theory related to these minor triads: Dm, Am, Em, Bm, F#m, and C#m
- Moveable chord triad shapes and their inversions (major and minor)
- Minor analysis of phrases and the Sonata Music form
- Some reference to parts of common song forms
- Modes, pentatonic scales, and the blues scale
- User entry of scales & chords via the interface
- Saving of music data to a MySQL database
- Retrieving stored data from a MySQL database
- All guitar chords contained in the 100 compositions

⁹ <https://www.hooktheory.com/trends>

¹⁰ Some listed items that are “out of scope” may eventually become areas of focus later on and become “in scope.” Music is a large subject and needs to be handled step by step. Similarly, a website progresses gradually as well, all within a defined time limit. I have worked as a professional Web Designer from 2011-2015 as viewed online.

- Use of a circle of 5ths and guitar fretboard interface
- Some reference to Beatles Instrumentation (rhythm, lead, bass, and drums)
- Limited coverage related to vocals (source: [Galeazzo Frudua](#)).
- Secondary Beatles content in support of theory and chord progressions.
- Coverage of classical music, but no jazz as yet (out of scope).

Out of Scope

- No curriculum development (I am a former instructor)
- Use of videos like that on YouTube (a common method of delivery)
- No references to Beatles compositions after October 1963
- Entire songs or transcriptions of artists' works
- Song instruction associated with a particular artist
- No scores or tabs showing **entire** songs
- No team-based composition lessons for guitarists (future content)
- Beatles song analyses like that by Alan Pollack
- Instrument exercises or compositions for guitar (instrument mastery)
- No instrument methods or books for guitarists
- No instrument methods or books for band instruments
- Lessons for students, whether they play guitar or not
- Lesson plans or DACUM charts for teachers
- No ongoing site maintenance (Robert will manage the site himself)
- No user accounts and setting of privileges (database management)
- No database transactions or stored procedures
- No use of database triggers or indexes (yet)
- Standard 5-line notation (mainly used for concert band/jazz ensemble)
- Music theory related to the Lydian, Phrygian and Locrian Greek modes
- Analysis of any melodies in the 100 compositions
- Analysis of guitar rhythm patterns used in the 100 compositions
- No piano diagrams equivalent to guitar chords
- Content from other websites or music sites without authorization
- Generating audio files with virtual instruments

This project plan is based on Website_Original.pdf¹¹, which outlines some future developments within the education field. It, however, was too large in scope from the outset. It should also be noted that initially, there used to be 225 compositions as listed in Beatles.xlsx. The current listing only covers 107 of them (1956-1959). Over time, composers change – and this was certainly true of Lennon & McCartney. In the late 1950s, they composed with guitars ([Because I Know You Love Me So](#), song No. 61). As recorded songs can be altered in pitch, the question is whether the song is in the Key of D or Key of A. The Beatles, however, would not care about what key it is in.

¹¹ Resources folder, PDFs

4 Deliverables

In this project, both Lennon & McCartney's compositions will be referred to at times, in reference to both classical and jazz styles of music.¹² When used in determining used chord progressions, only early compositions written between 1956-1959 will be focused on; only data associated with covers recorded between 1957-1959, as well as Beatles compositions recorded between 1958-1959 are included. Part of the primary deliverables is **data** based on research, as stored within MySQL. It should be noted, however, that many deliverables are related to music content. For me, it is necessary to separate his involvement on four project areas (spanned over 2 projects):

1. Project Management
2. Website Design
3. User Interface Design
4. Music Education (ongoing)

As yet, the latter (#4) is not a task that is a major part of this project. The initial project areas are more important. In **this** project, the primary deliverables are as follows, with one occurring right from the outset on March 2.

Content: Music Phrases and Harmonic Chord Changes

One of the key deliverables involves identifying 4 measure phrases as outlined in [Open Music Theory](#). This is in relation to music content and it difficult at times to separate the music (audio) from its associated music, but as I have already stated, this is necessary as the use of virtual instruments will not occur until after the conclusion of this project. The main part of this project is associated with [chord progressions](#). Over the span of two projects, this is a complex area of music that must be simplified to some extent for [certain learners](#). The Beatles learnt music by ear and they are in a class by themselves (no use of 5 staff music). They did, however, use the names associated with their chords, like F#m and B7. Often they would use different forms of a chord. For example, John Lennon's version of F#m would be different from that of George Harrison. Delivery of these chord differences is important.

¹² This project first started out as an website but was switched to a website part way through. This means that domain registration, hosting and server installation comes into play (part of my background). As a Web Designer, I am familiar with that aspect of the project. I have also developed many music theory websites.

All My Loving (Paul McCartney)

Phrase	Chord	John Lennon	George Harrison
1	F#m	XX4222	244222
	B	XX4442	X24442
	E	XX6454	X76454
	C#m	XX6654	X46654
2	A	XX7655	577655
	F#m	XX4222	XX7675
	D	XX4323	X5777X
	B7	XX4242	797877

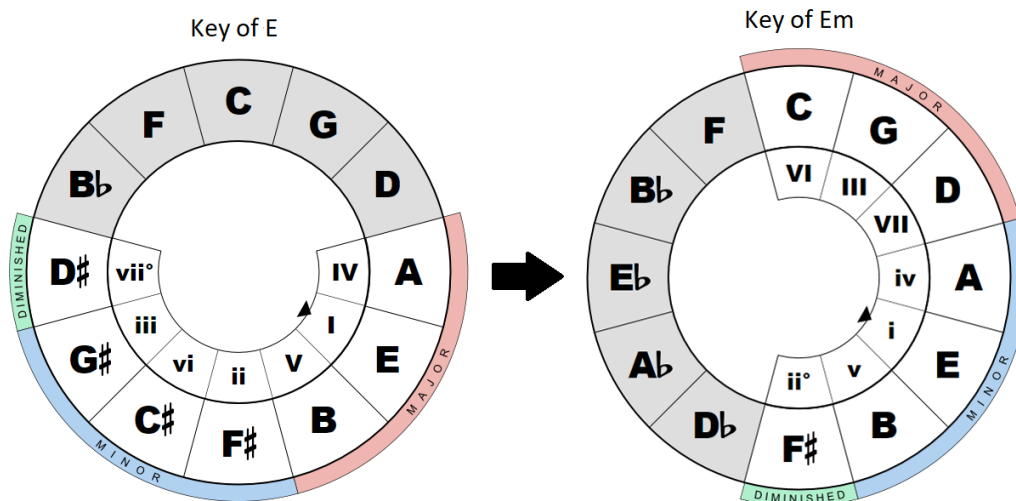
Phrase	Chord	John Lennon	George Harrison
3	F#m	XX4222	244222
	B	XX4442	X24442
	E	XX6454	X76454
	C#m	XX6654	X46654
4	A	XX7655	577655
	B	XX9877	799877
	E	XX6454	X7999X
	--	No chord	No chord

In “All My Loving”, in each verse, there are 4 phrases (4 measures per phrase):

- | | |
|-------------------------|---------------------------|
| 1. F#m → B → E → C#m | 1. ii → V → I → vi |
| 2. A → F#m → D → B7 | 2. IV → ii → flat-VII → V |
| 3. F#m → B → E → C#m | 3. li → V → I → VI |
| 4. A → B → E → No chord | 4. IV → V → I → No chord |

Each of these 4 measure phrases would be shown on the website – and in the underlying database, there would be an indication of what phrase is possible next. As a composer, McCartney knew that one could make a transition to a parallel minor chord (F#m → D) and then return to the **Key of E major** in the next measure. D is a major chord of the **Key of Em**.

On the diagram that follows, what is missing is the D chord has a root that is flat in relation to the D# that is part of the E major scale (E, F#, G#, A, B, C#, D#, and E). The chord is therefore shown as $\flat$ VII. None of the Beatles, of course, would know this, but those who can read music often do.



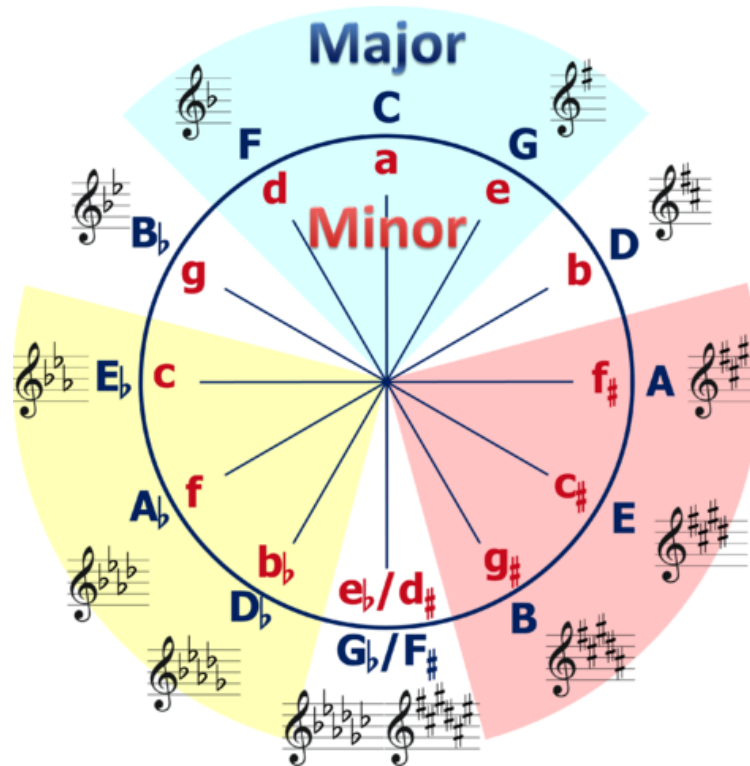
Momentarily, the song goes out of key in the second phrase (the flat-VII). As [Alan Pollack](#) points out, “The D-Major chord ... demonstrates an unusual application of the so-called ‘flat-VII’ chord. Here in ‘All My Loving’, this flat-VII behaves like a connecting chord between the ii and V chords.” As he points out, there is also a root movement in the bass, and an upward chromatic movement in the lead guitar part of C# -> D -> D# over the course of measures 6 - 8. This type of harmonic transition “is far from unprecedented, especially in the songs of the Beatles.” However, only the chord progressions in the guitars are part of any deliverable in the website.

The most important deliverable is to design an interactive front-end, which is comprised of the “Circle of 5ths, Chord Progression Diagrams¹³, guitar fretboard, and scale/chord references.” (images that are displayed based on user input). Many of the deliverables are related to the Circle of 5ths. Chord progressions are associated with it, whether major or minor (note the change in roman numerals). Major: E = I → Minor: E = i. A better view can be seen at [randscullard.com](#). In ‘All My Loving,’ the D is borrowed from E minor, as viewed on a Circle of 5ths. This deliverable is important. It should be noted that major keys share the same key signature with their relative minor.

The difference between a parallel minor key and a relative minor key is this: Relative minor keys have the same key signature with the given major key while parallel minor keys don't.

Since the 17th century, the Circle of Fifths has been a prominent tool utilized by professional musicians and composers throughout Western Culture. Those who learn by ear, tend to learn this without any reference to a key signature and just play the respective chord associated with the current key. This information is deliverable indirectly. What many students consider to be important is the chord itself. Music theory is often necessary one way or another. McCartney eventually learnt some music theory in 1991 when he started composing classical music.

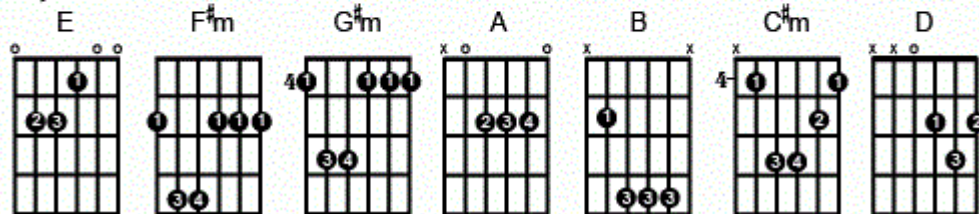
¹³ These chord progression diagrams are based on diagrams in my [chord progressions](#) website. Information about chord progressions used between 1956-59 is found in the *Songs Listing* folder (Resources/Song_Listings/Song_Listing_1). Associated with all this music information etc., is a chance for scope creep – **as enthusiasm for music can often increase content**. It is sometimes difficult to separate the composer from that of the project manager. Both are different aspects of this project. The project itself will eventually need a 2nd revision.



Major Scale Chords

I ii iii IV V vi (bVII)

Key of E



The first part of the project is waterfall-based and involves the delivery of images associated with the website. A more detailed table of deliverables is shown below and includes the Agile-based PHP & MySQL development that will take place in May. The target date for delivery of the website is May 22nd (based on Microsoft Project). This is different from the original projected date of June 26 as seen in Schedule_Original.pdf. Overall, the important thing that could make or break the project is Robert's song data (Chord Changes Milestone). The 100 songs in the appendix are the basis of this project. If the data is missing or delayed, it will impact the project.

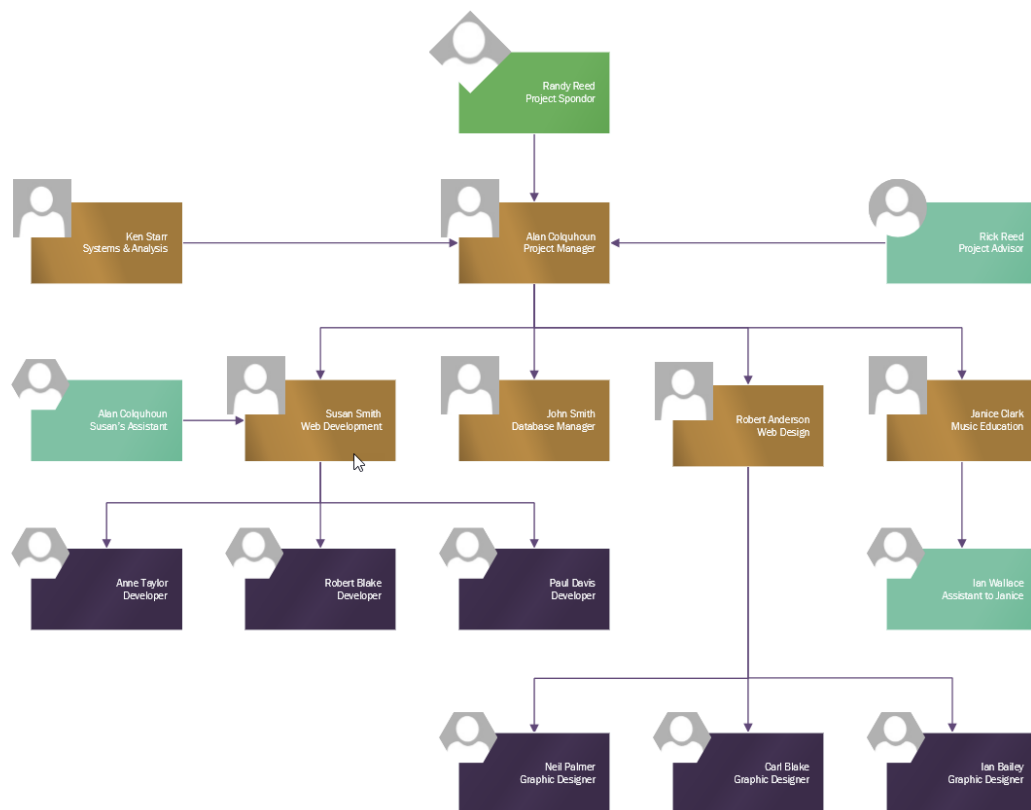
	MILESTONE	DATE	DETAILS
1	Start of Project	02-Mar	Domain Registration, Website Project Overview (PDF), Commencement Presentation, Team Meetings.
2	Secondary App Content	13-Mar	Music Theory, Vocals and Instrumentation.
3	Robert Smith: Chord Changes	13-Mar	Sheet Music Folder and resulting 4 phrase chord changes. Can be delayed no later than March 20.
4	Systems Analysis & Design	27-Mar	Data Flow Diagrams and Entity Relationship Diagrams. System Sequence and State Diagrams. Primitive Diagrams.
5	Database Design	27-Mar	Song Table, Phrase Table and Chord Transition Probability Tables. Design & Entry.
6	User Interface Design & Front-End Programming'	27-Mar	Guitar Fretboard, Scale/Chord references, Circle of 5ths, Chord Progression Diagrams, User Controls and User Interface Programming.
7	Graphic Design	31-Mar	Circle of 5ths, Scales, Triads and Guitar Chords. Misc Images.
8	Server Installation	31-Mar	Server Installation.
9	PHP & MySQL Development	28-Apr	Development Meeting, PHP & MySQL Development Sprints.
10	Website Testing	06-May	Website Testing Week.
11	Website Demo	07-May	Website Demonstration.
12	Website Revision	15-May	Make recommended changes to website.
13	Website Training	21-May	Website training to Steven Power's students, Evaluation of website prior to release.
14	End of Project	22-May	Delivery of website to Robert, Project End Celebration.

5 Critical Assumptions

- Resources
 - Project graphic designers will be available to create all the necessary images, when and as they are needed.
 - At least 40% percent of the project staff will be experienced with PHP & MySQL development to handle all back-end work.
- Delivery
 - With exception of the May 29 deliverable, deliverables that are submitted for website approval will be returned within three working days.
 - The May 29 deliverable will be delivered by 12 noon and processed during the next week.
- Budgetary
 - With exception of the May 29 deliverable, no outside consulting will be required as both Randy and myself have the knowledge to carry out all the tasks. Outside consulting will be limited to 3 days at a cost of \$500 unless approved by the client.
- Functionality
 - The scope of the project is limited to chord progressions and the music theory associated with it. The content of the website is outlined in the appendix. Delivered images are an important part of the website's functionality.

6 Project Organization

The project involves 14 people within the organization itself, 6 of which have direct roles & responsibilities (internal stakeholders). As stated in the Assumptions section, “the project is limited to chord progressions and the music theory associated with it.” Four of individuals listed below are musicians: Randy Reed, Rick Reed, Alan Colquhoun, and Janice Clark.



(Refer to Organizational_Chart.pdf for a larger view.)

7 Communication Plan

Stakeholder	Description	Delivery Format	Contact Person	Interval
Internal Stakeholders	Initial Meeting Project Plan (2-3 hours)	Formal Meeting PowerPoint Presentation	Project Manager	9 am Friday, February 28th
Graphic Design Team	Kick-off Meeting (1 - 1.5 hours)	Formal Meeting PDF Handout	Project Manager	1 pm Friday, February 28th
Systems Analysis (Ken Starr)	Kick-off Meeting (1- 1.5 hours)	Formal Meeting PDF Handout	Project Manager	3 pm Friday, February 28th
Programming Team	Kick-off Meeting (1 - 1.5 hours)	Formal Meeting PDF Handout	Project Manager	9 am Monday, March 2nd
Project Advisor Meeting	Advising for Project (1 hour)	Skype Meeting	Project Manager	11 am Friday, March 13th
Project Sponsor Meeting	Update on Project (1 hour)	Formal Meeting	Project Manager	1 pm Friday March 13th
Project Manager	Robert Smith (1 - 2 hours)	In-Person Email (MS Word)	Project Manager	As Necessary
Project Manager	Janice Clark (1 - 2 hours)	In-Person Email (MS Word)	Project Manager	As Necessary
Project Manager	Music Content Correspondence (4 - 5 hours)	Documents (MS Word) Email (MS Word) Phone	Janice Clark Project Advisor	Ongoing
Project Manager	Systems Analysis (2 -2.5 hours)	Documents (MS Word) Email (MS Word) Phone	Ken Starr	Ongoing
Project Manager	Technical Correspondence (2 -2.5 hours)	Documents (MS Word) Email (MS Word) In-Person	Robert Anderson John Smith Susan Smith	Ongoing
Project Members	Time Management (30 minutes)	Email (MS Word/PDF)	Project Manager Team Members	Weekly
Project Sponsor	Status Report (1 - 2 hours)	Documents (MS Word) Email (MS Word) In Person	Project Manager	Fridays 3:00pm (Except Mar 13th)
End Users	End User Feedback (3 - 4 hours)	Email (MS Word) Documents (MS Word/PDF)	Janice Clark	3 pm Thursday May 21st
Executive	Project Completion (1 hour)	Formal Meeting PowerPoint Presentation Manual (PDF)	Project Manager	1 pm Friday May 22nd

8 Roles and Responsibilities

This section provides a breakdown of the roles and responsibilities of various people involved in the project. The project manager will be the primary contact for the project and maintains communication with the project sponsor & team leaders. Under the direction of the project manager, each team leader assists with the project, as well as manages their own team. Each team member will work towards the goals of the project, in order to meet website requirements -- within a 4-month timeline. This was set by Robert Smith, who receives all project documents and signs off on them.

Four individuals should be noted for their involvement with music, rather than merely carrying out technical positions. Randy, Rick, I and Janice are all subject matter experts, and one should keep in mind that the website itself will be for those who do not read music that involves 5-line staves. It must be simple enough for people with no background in music theory or traditional approaches to guitar instruction. These 4 individuals are responsible for ensuring that the website is usable by those who cannot read music.

Functionality is only one aspect of this project. The website must eventually be accessible to all, *no matter how much music theory they know*, and Janice & myself are the main individuals responsible for ensuring the website delivers music content associated with chord progressions used between 1956-1959.¹⁴ As well, each team leader is responsible for managing their area of the project -- and how they are work with the website's data and information. The project manager will be in regular contact with them about various aspects of the project -- and expect updates associated with the progress of their duties.

➤ **Randy Reed – Project Sponsor**

- Professional musician and twin brother of Rick Reed
- Primary contact for Robert Smith
- Oversees quality control and ease of use for the website
- Subject matter expert with respect to guitar instruction and theory
- Lived through the period applicable to the website (1956-1959)

¹⁴ Inspired by my chord progressions website, as well as Robert Smith's research, the website will allow users to explore 4 measure chord progressions used by both John Lennon and George Harrison, as used in covers and original compositions. The voicings of these chord progressions will often vary and will be partly determined by transcripts of BBC recordings. Chordify will usually just create generic chords that do not reflect what is actually played by each guitarist, whether applicable to rhythm or lead. I own Beatles music manuscripts that show chord variants.

➤ **Alan Colquhoun – Project Manager**

- Responsible for final project implementation
- Assesses and completes all objectives
- Executes all project phases & tasks
- Ensures that all deliverables are met
- Communication with all stakeholders, including subject matter experts
- Manages the budget and timeline
- Plans website design with Robert and handles domain registration
- Delegates responsibilities to his assistant, Robert Anderson
- Handles server installation along with Robert Anderson

➤ **Robert Anderson – Design & Printing**

- Web Designer
- Oversees all design work and printing
- Works with myself & Janice to create all required resources, except coding
- Replaced me when I transitioned to Project Management
- Works with Janice regarding any multimedia requirements

➤ **Rick Reed – Project Advisor**

- Advises me about various aspects of the project
- Music theory subject matter expert and luthier
- Professional musician and twin brother of Randy Reed

➤ **Janice Clark – Music Education / Product Owner**

- Primary contact for external music educators
- Music subject matter expert and trained classical musician
- Reports to directly to me and Randy
- Checks the website's music content
- Demonstrates use of the website to external partners
- Leads feedback studies and focus groups

➤ **Ken Starr – Systems Analyst / Scrum Master**

- Produces all systems analysis documents
- Works with the development team to ensure they are on task
- Along with Janice Clark, verifies end-user compliance
- Works with John Smith regarding database requirements

➤ **John Smith – Database Administrator**

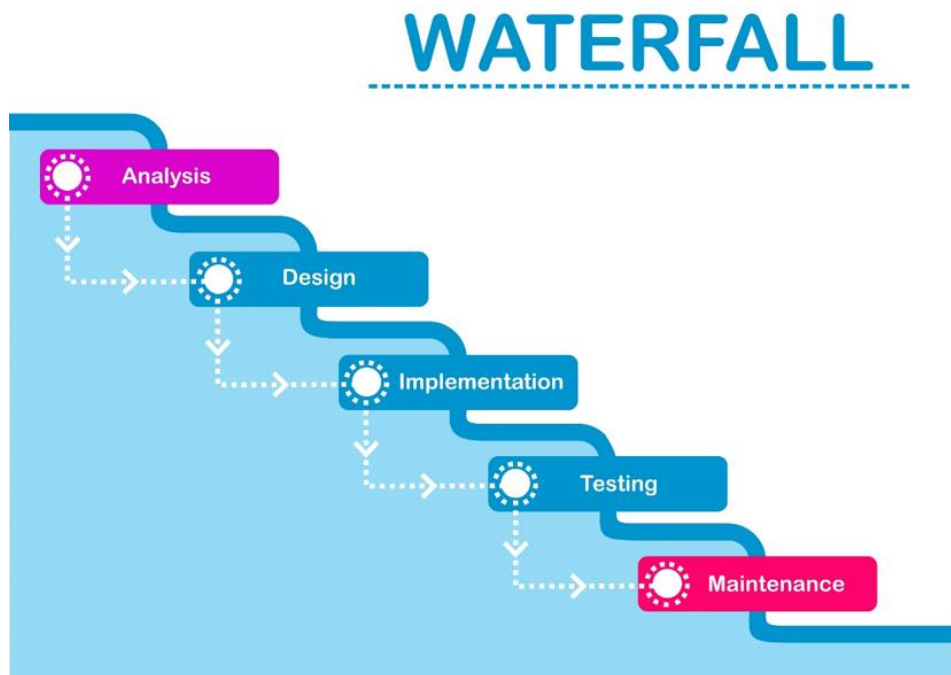
- Database Design
- Performance monitoring
- Provides database table access to users
- Controls database access permissions and privileges
- Develops, manages and tests back-up & recovery

➤ **Susan Smith – Web Development**

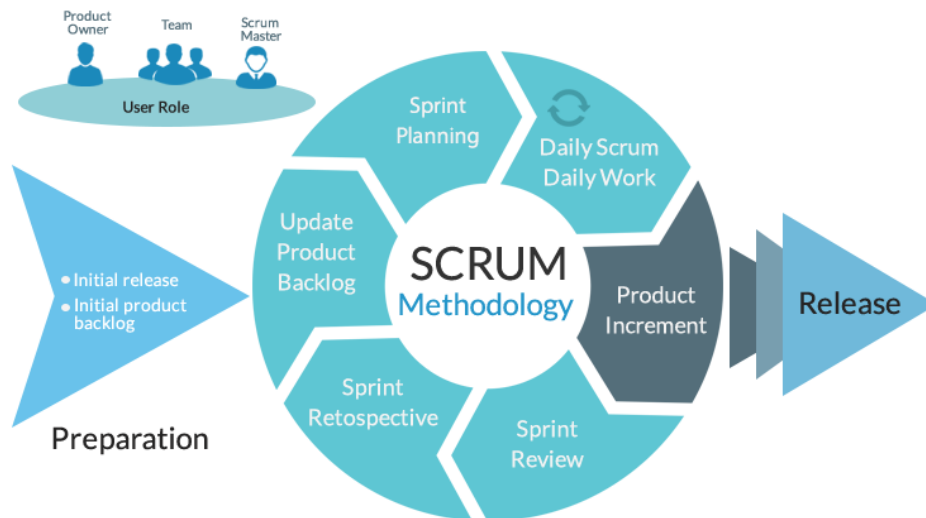
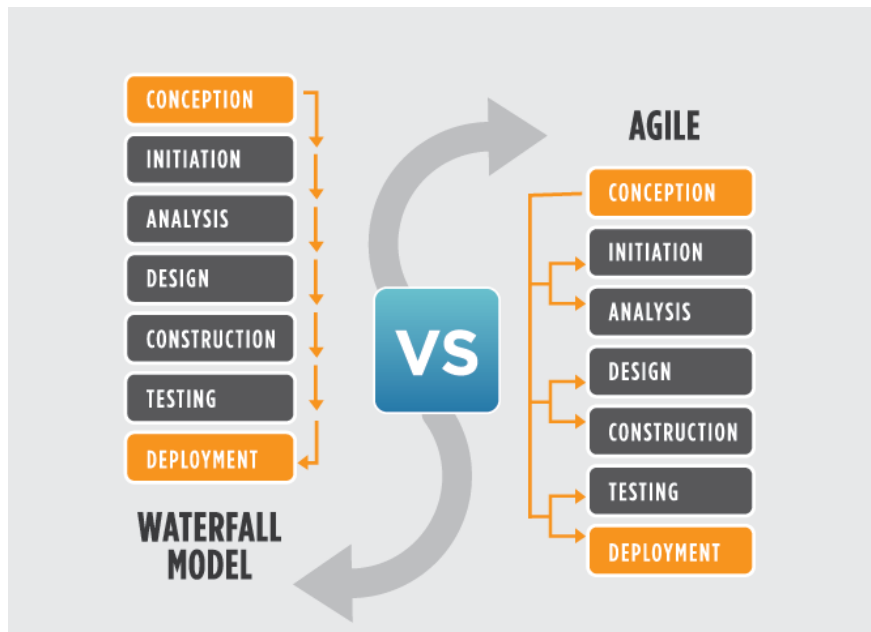
- Web Development
- Oversees all PHP & MySQL development
- Develops, manages and tests all developed code
- Works with Ken Starr and Janice Clark to meet all website objectives
- Is assisted by me (trained in Web Technologies)

9 Project Methodology

The initial part of the project involves chord data analysis, image creation, as well as the creation of systems analysis documents – and is waterfall-based. This is in contrast to the latter half of the project which is Agile-based. A lot of the design work is itself a sequence of waterfall transitions, as opposed to scrum team-based development. Flexibility is key in any project – and this is certainly the case with the use of methodologies. There is room for both approaches. I have used both methodologies.

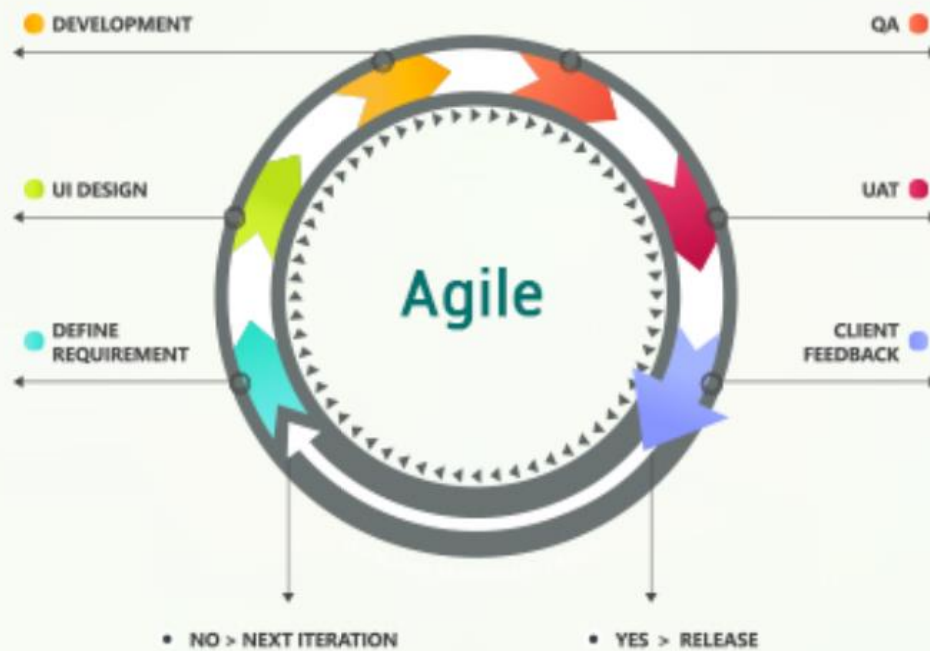
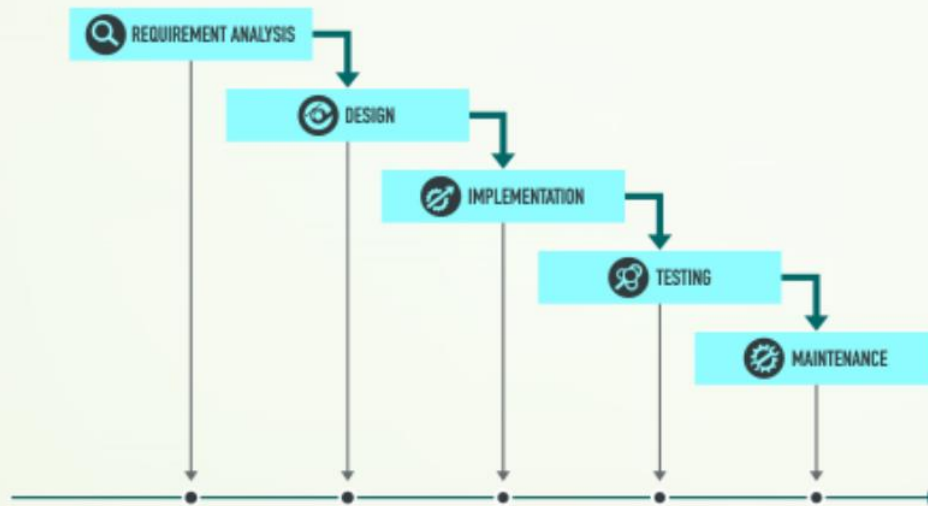


The development team makes use of Agile in 2-week sprints under the company's sole scrum master: Ken Starr. The project's product owner, who also has training in project management is familiar with the Agile Methodology having worked at SAP Canada. Agile involves an iterative process; unlike the Waterfall Model, processes usually occur concurrently. Product releases occur iteratively.



I have experience in both design and development. I consider the latter to be largely Agile-based and design itself to be Waterfall-based (based on my own experience). Though this is not necessarily the case, testing is important to both the Waterfall and Agile methodologies. One tends to be asynchronous, whereas the other one tends to be synchronous. With respect to Agile, QA = Quality Assurance and UAT = User Acceptance Testing (see next page). With Agile, there are multiple releases (optional releases that occur during each iteration). At SAP, I was part of such a team.

Waterfall



10 Project Schedule

Task Name	Duration	Start	End
Chord Progressions Project	55 days	24-Feb	22-May
Start of Project	13 days	24-Feb	13-Mar
Secondary Website Content	8 days	02-Mar	13-Mar
Robert Smith: Chord Changes	8 days	02-Mar	13-Mar
Systems Analysis & Design	17 days	02-Mar	27-Mar
Database Design	9 days	13-Mar	27-Mar
User Interface Design & Programming	17 days	02-Mar	27-Mar
Graphic Design	19 days	02-Mar	31-Mar
Server Installation	2 days	27-Mar	31-Mar
PHP & MySQL Development	15.5 days	31-Mar	28-Apr
Website Testing	5 days	28-Apr	06-May
Website Demonstration	1 day	06-May	07-May
Website Revision	5 days	07-May	15-May
Website Training	4 days	15-May	21-May
Delivery of Music Website	1 day	21-May	22-May

Refer to the [appendix](#) for a detailed MS schedule.

11 Risk Management Plan

Risk	Mitigation / Response	Severity
Scope Creep	We have accounted for most of the possible chord changes that are possible. Having completed a thorough analysis, we are prepared to accommodate a mild change in scope without severely delaying the project's deadline. In this scenario, we need to document the change and validate & assess its impacts – and then find a solution. The change request would have approved by Randy before executing the solution without severely damaging or delaying the project's deadline.	High
Chord Changes Arrival Delay	The tasks associated with this phase have been given a specific 8-day schedule as declared in the WBS (due on the 13 th). It can be delayed no further than the 20 th of March. Should the target date of March 13 be missed, the task will be taken on by Reed Music Publishing and then supplemented by Robert's data when it does come in.	Medium to High

Insufficient Staff or Expertise	In the event of a loss of expertise, we will temporarily access other resources by tapping into IT outsourcing associated with our IT affiliates (Systems Analysis, User Interface Design as well as PHP & MySQL Development.) Approval has already been granted should this occur. We have also ensured that a subject matter expert is available should Rick Reed or Janice Clark not become available.	Medium
Catastrophic Incidents	Should a hardware or software failure occur, there is a chance that there could be a loss of graphic design or coding. We need to ensure that our backups are up-to-date and can replace any lost output should loss occur. We are prepared to back up all work and have alternate resources for each image or identified coding (S&A primitives and resulting coding). In such an event, Robert will be contacted, so he can choose from several alternatives, as he is the one paying for services.	Low
Solution does not meet client's needs or approval	A list of questions, organised around various aspects of the project, will be administered to clarify that we are indeed meeting desired objectives. It will provide clarification to Alan and the other stakeholders on any issues to be addressed. Constant communication is a key to success and Alan & Robert will be often be in contact with each other, and with Randy himself. We will do our best to ensure Robert is satisfied with the end result. Randy's reputation is also on the line. Overall, good communication is important.	Low

This project is not so much about the way music *sounds*, as it is about the underlying theory, chord progressions and instrumentation used between 1956-1959. Supplemented by information about scales and chords themselves. The project will tap into some research based on [Andy Babuik's](#) "Beatles Gear" work, in consultation with Rick Reed (limited to 1956-59).

"The Hofner was more because they were in Germany. You've got to remember the mentality and the age of these guys when this was happening. McCartney was a teenager. He was either going to be out of high school and into some sort of art college or something, or he was going to go with his buddies and drink beer and pick up chicks and play music all day in Germany for months at a time. 'Screw it, man, let's go have a party!' That was the mentality. But along with that, they didn't have any money. Hofner was a German company [and] they were in the center of Hamburg. There were a lot of music stores there. So the Beatles were actually able to access and look at instruments that were available. The 'violin' bass was unique because it was symmetrical." This is applicable to the 1st risk.

12 Budget

Phase	Cost
Start of Project	\$ 2,339.36
Secondary Website Content	\$ 2,100.48
Robert Smith: Chord Changes	\$ 1,400.32
Systems Analysis & Design	\$ 2,975.68
Database Design	\$ 1,575.36
User Interface Design & Programming	\$ 2,975.68
Graphic Design	\$ 5,292.00
Server Installation	\$ 3,800.16
PHP & MySQL Development	\$ 10,764.96
Website Testing	\$ 3,500.80
Website Demonstration	\$ 525.12
Website Revision	\$ 5,251.20
Website Training	\$ 1,400.32
End of Project	\$ 1,673.22
Grand Total	\$ 45,574.66

Material	Cost
Domain Registration (3 years)	\$ 50.00
Microsoft SQL Server 2017 Standard	\$ 800.00
Tripp Lite UPS Battery Back-Up	\$ 300.00
Server Cost - Refurbished PC	\$ 2,000.00
Grand Total	\$ 3,150.00

**The total labour dollar value for the project is
\$45,574.66 - \$3,150.00 = \$42,424.66**

**When 12% tax is added, the total cost to the client is
\$47,515.62. This includes the 30% discount.**

13 Quality Plan

Project

- Software Development Life-Cycle methodology will be in use for the Graphic Design part of the project.
- p The Agile Methodology will be used for the PHP & MySQL Development part of the project
- Each phase/iteration will be recorded in its individual folder for everyone to keep track of any files.
- Task actual duration will be measured against the budgeted duration.

Content / Technology

- All the coding will be done using a standard structure, which is to have a layout, comment every method, etc.
- All internal stakeholders will be relying on my Website Project Overview PDF¹⁵ for the initial part of the project. Afterward, contact will be made according to the communication plan.
- The website will be tested starting on April 28 and revised as necessary, starting on May 7.

Deliverables

- Deliverables will be reviewed at least twice before submitted for approval.
- They will be submitted by the due date per the WBS.
- Deliverables will be due internally 15% earlier than their given submission date.
- The project will be completed as per the supplied schedule and budget, within a 10% variance.

¹⁵ This will be created during the project.

Documentation

- Documentation will make use of a standard template.
- Different folders will be used to document every phase/iteration of the project on an individual basis.
- Documentation structure should be detailed and will use the following applications:
 - Word Processing: MS Word 2016 or 2019
 - Diagrams: MS Visio 2019 & MS Word 2019
 - Presentations: MS PowerPoint 2016 or 2019
 - Project Schedules: MS Project 2016 or 2019
 - E-Mail Correspondence: Gmail 2016 or Outlook 2016
- Specified documentation will contain images or other diagrams regarding the text.
- Manuals will not be distributed until project leads reviews them for accuracy and grammar.

Changes

- p All scope change will be evaluated by the project manager.
- Every change will be documented and recorded for further references.
- All scope change will need to be signed by the project sponsor.
- q Every change will be declared and shared with the project advisor.

14 APPENDIX

14.1 SONG TIMELINE

This song timeline is from Bealtes.xlsx and is the basis for the website. The Beatles learnt chord progressions by ear, and over a span of 7 years (1956-1963), the biggest influences upon their music were songs by Elvis Presley, Little Richard, Chuck Berry, and Carl Perkins. The listing shown below contains a subset of what I originally planned to include for the project (225 compositions). That listing contained about 24% of compositions written by Paul McCartney or John Lennon. Many of the songs in the listings influenced the Beatles' songwriting and an analysis of their compositions *might* reveal similar chord progressions, melodies as well as song structures (i.e. song forms). This research was closed as *is* during this project, but as actually ongoing. The only real people in the *stakeholders* section are Randy Reed, Rick Reed and myself. The other people are extensions of myself.

As shown in the listing, the compositions the Beatles recorded in EMI come into focus in December 1957 (No. 60), with the writing of "What Goes On", that was never recorded until November 1965. 'Love Me Do,' however, was likely chosen as their first single as *March 1958*, as it is likely the month that George Harrison joined the group. It also might be due to being more complete. As seen in Beatles.xlsx, the Narrative/Notes column will be added into the database, in association with the secondary content from phase 2. Partway through this project, the focus changed from being an app to *being a website*. One thing that resulted is a change in Risk Management (Scope Creep). Since the start of the project, I have been aware of its dangers. Some of the information from my original plan was included in this one.

By no means complete, the listing will be updated after the website is completed using information from [Songs We Were Singing](#) and other sources. Research tends to be ongoing and this listing is no different. It contains 100 songs and is associated with a longer listing.

	Song	Key	Month	Year
1	Blue Suede Shoes	A	4	1956
2	Honey Don't	E	4	1956
3	Tutti Frutti	F	5	1956
4	Be Bop A Lula	E	6	1956
5	Maybellene	Bb	6	1956
6	I Want You, I Need You, I Love You	G	7	1956
7	My Baby Left Me	A	7	1956
8	Hound Dog	C	9	1956
9	Don't Be Cruel	D	9	1956
10	I Got A Woman	E	10	1956
11	I'm Left, You're Right, She's Gone	E	10	1956
12	That's Alright, Mama	A	10	1956

13	I'm Gonna Sit Right Down and Cry (Over You)	G	10	1956
14	Lawdy, Miss Clawdy	A	10	1956
15	Shake, Rattle, and Roll	F	10	1956
16	Clarabella	G	11	1956
17	I Don't Care If The Sun Don't Shine	D	11	1956
18	I Lost My Little Girl	G	12	1956
19	Lonesome Tears In My Eyes	E	12	1956
20	Love Me Tender	D	12	1956
21	Rip It Up	G	12	1956
22	Ain't That A Shame	G	1	1957
23	Long Tall Sally	G	1	1957
24	Mystery Train	E	2	1957
25	I Forgot To Remember To Forget	E	2	1957
26	Red Sails In The Sunset	G	2	1957
27	Baby, Let's Play House	E	3	1957
28	Cumberland Gap	C	3	1957
29	Maggie Mae	G	3	1957
30	Twenty Flight Rock	A	4	1957
31	Come Go With Me	G	4	1957
32	Matchbox	A	4	1957
33	Thinking of Linking	D	4	1957
34	Fabulous	C	5	1957
35	Roll Over Beethoven	D	5	1957
36	Too Much Monkey Business	A	5	1957
37	Lucille	C	6	1957
38	Send Me Some Lovin'	G	6	1957
39	Putting On The Style	D	6	1957
40	Searchin'	D	6	1957
41	All Shook Up	Bb	6	1957
42	That's When Your Heartaches Begin	A	6	1957
43	Young Blood	A	6	1957
44	Bye Bye Love	A	7	1957
45	I Wonder If I Care As Much	A	7	1957
46	Jenny, Jenny	F	8	1957
47	Lotta Lovin'	G	8	1957
48	Mean Woman Blues	C	8	1957
49	Miss Anne	G	8	1957
50	That'll Be The Day	A	9	1957
51	Too Bad About Sorrows	A	9	1957
52	Red Hot	D	9	1957
53	Just Fun	E	9	1957
54	Whole Lotta Shakin'	C	10	1957
55	Hello Little Girl	A	11	1957
56	Loving You	D	11	1957
57	Raunchy	D	11	1957
58	Glad All Over	E	12	1957
59	Rock and Roll Music	A	12	1957
60	What Goes On	E	12	1957

61	Because I Know You Love Me So	D	1	1958
62	Hey, Hey, Hey, Hey	G	2	1958
63	I Call Your Name	E	2	1958
64	Love Me Do	G	3	1958
65	Sweet Little Sixteen	C	3	1958
66	Dizzy Miss Lizzy	E	4	1958
67	Lend Me Your Comb	E	4	1958
68	Slow Down	C	4	1958
69	All I Have To Do Is Dream	F	5	1958
70	Claudette	E	5	1958
71	In Spite of All the Danger	E	5	1958
72	Johnny B. Goode	E	5	1958
73	I'll Always Be In Love With You	F	6	1958
74	Ooh! My Soul	E	6	1958
75	True, Fine Mama	G	6	1958
76	Fever	Bm	7	1958
77	Worried Man Blues	G	7	1958
78	Fancy Me Chances With You	G	8	1958
79	Yakety Yak	G	8	1958
80	Summertime Blues	E	9	1958
81	Carol	A	10	1958
82	Nothin' Shakin' (But The Leaves On The Tree)	A	10	1958
83	To Know Him Is To Love Him	D	10	1958
84	Catswalk	C	10	1958
85	I'll Never Let You Go	C	12	1958
86	Alright, Okay., You Win	C	1	1959
87	Michelle (Instrumental)	C	1	1959
88	Cayenne	Em	1	1959
89	Hot As Sun	D	2	1959
90	Like Dreamers Do	A	3	1959
91	Shimmy Shake	A	3	1959
92	Three Cool Cats	E	3	1959
93	Bad Boy	C	4	1959
94	I'll Be On My Way	A	4	1959
95	I'll Follow The Sun	C	4	1959
96	Little Queenie	C	4	1959
97	Take Out Some Insurance On Me Baby	E	4	1959
98	Kansas City	G	5	1959
99	She Knows How To Rock	C	5	1959
100	Love Of The Loved	E	5	1959

14.2 LENNON: BANJO CHORDS

BANJO CHORDS
CHORDS FOR COMMON KEYS
OPEN G TUNING • G-DGBD

G	G7	C	D	D7	Em
C	C7	F	G	G7	Am
D	D7	G	A	A7	Bm
E	E7	A	B	B7	C [#] m
F	F7	B ^b	C	C7	Dm

14.3 CIRCLE OF 5THS

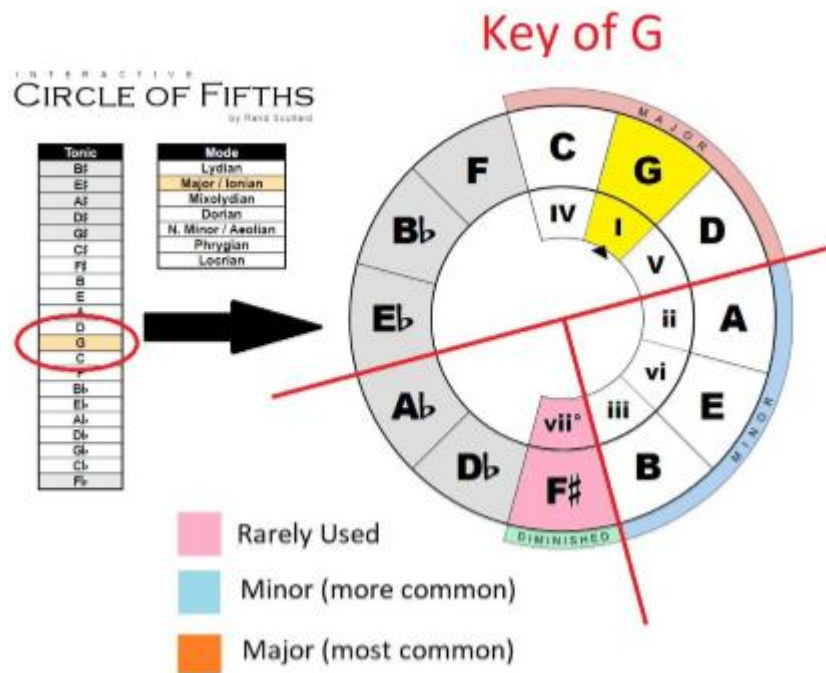


Figure 1

14.4 USE OF CADENCES

Chord Progression:
Cadences

The chords at the end of the phrase create a **harmonic cadence**. The table shows the five most used cadence types in classical and pop music.

Key: Eb major

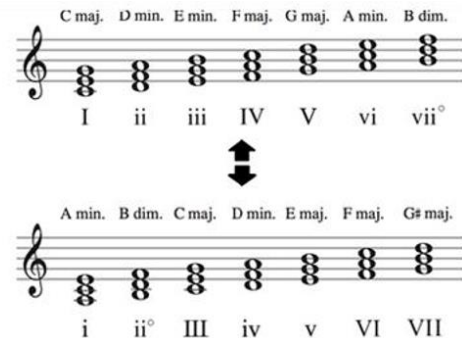
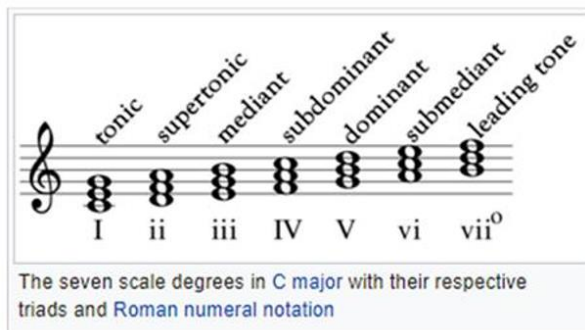
Deceptive cadence

Key: G major

Plagal cadence

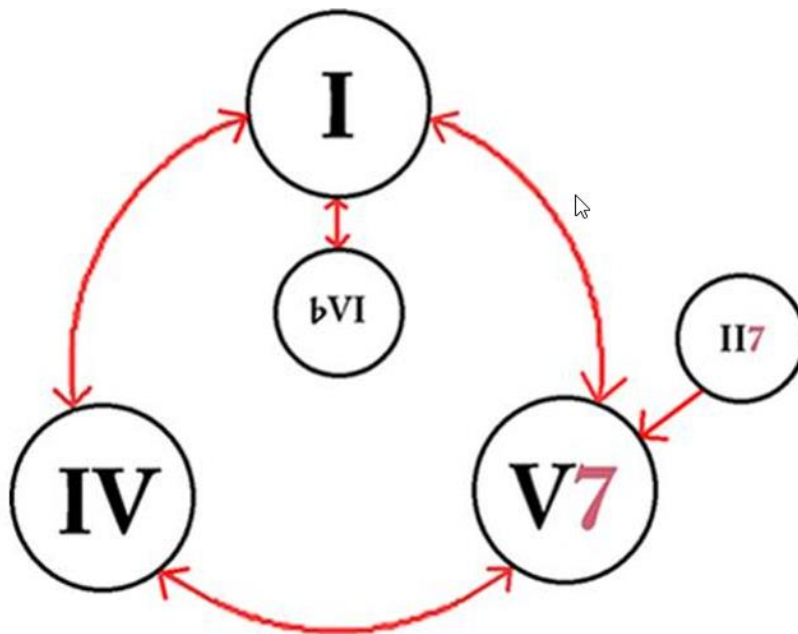
Authentic	$V \Rightarrow I$
Plagal	$IV \Rightarrow I$
Half	Anything $\Rightarrow V$
Deceptive	$V \Rightarrow$ Anything but I
Cadential $\frac{6}{4}$	$I_4^6 \Rightarrow V \Rightarrow I$

14.5 USE OF ROMAN NUMERALS



14.6 BEATLES INFO & PROGRESSION DIAGRAMS

“Rock'n'Roll that hit the shores of the UK in the late 1950s also makes use of dominant and tonic chords, as well as the subdominant chord. This is the type of music that the Beatles grew up on, and up until October 1958, most of the music they played **used no minor chords**. For all intents and purposes, this is how chords progressed until minor chords were used in later compositions”:



14.7 CONTENT: USER INTERFACE ETC.

Key:

I --> vi Transition

G Major Scale

Melody:

G A B C D E F# G
I II III IV V VI VII VIII

G Am Bm C D Em F#°

G: I ii iii IV V vi vii°

Rhythm Guitar

Lead Guitar

Referenced Score (if any)

Ascending Melody

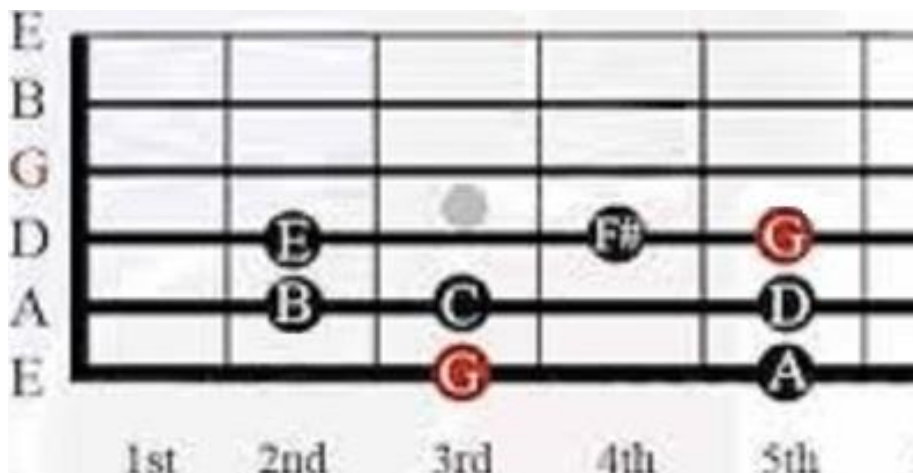
I --> iv progression
vocal harmony: 3rds/4ths

G --> Em --> Bm I -> vi
G --> Em --> Bm vi --> iii

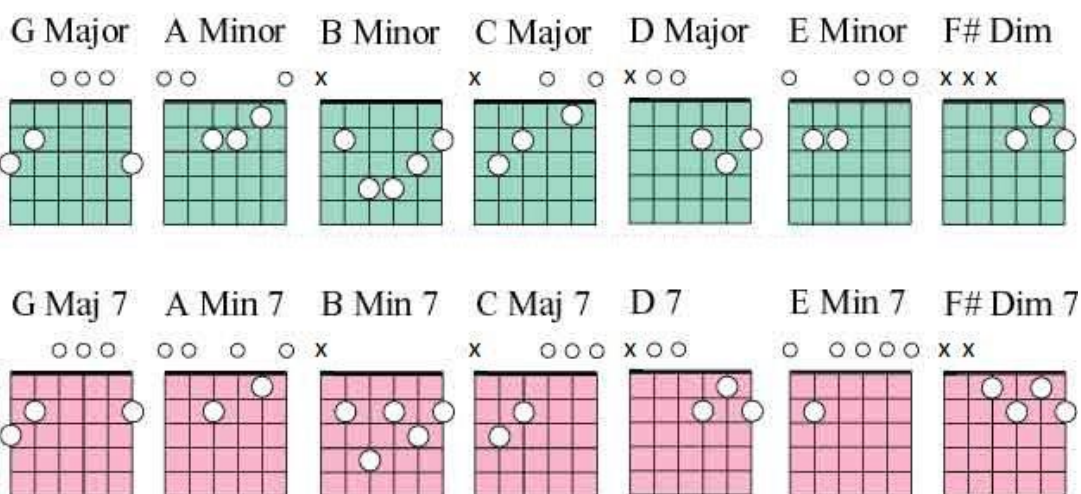
Stable ↑ ↓ Unstable	I	→	Anything
	vi	→	IV, V, I, ii
	IV	→	I, V, vi, iii
	V	→	I, IV, vi
	iii	→	vi, I, IV, ii
	ii	→	V, IV, iii

(SEE Music_Theory_2.pdf for larger images)

14.8 SCALES AND CHORDS



Chords in the key of G major



14.9 TASK BREAKDOWN

Task Name	Duration	Start	Finish
Chord Progressions Project	55 days	Mon 20-02-24	Fri 20-05-22
Start of Project	13 days	Mon 20-02-24	Fri 20-03-13
Domain Registration	0.25 days	Mon 20-02-24	Mon 20-02-24
Website Project Overview (PDF)	2.75 days	Mon 20-02-24	Thu 20-02-27
Commencement Presentation	0.5 days	Thu 20-02-27	Thu 20-02-27
Graphic Design Team Meeting	0.5 days	Fri 20-02-28	Fri 20-02-28
Systems Analysis & DB Meetings	0.5 days	Fri 20-02-28	Mon 20-03-02
Project Advisor Meeting	0.25 days	Fri 20-03-13	Fri 20-03-13
Microsoft Project Update	0.25 days	Fri 20-03-13	Fri 20-03-13
Start of Project Milestone	0 days	Fri 20-03-13	Fri 20-03-13
Secondary Website Content	8 days	Mon 20-03-02	Fri 20-03-13
Music Theory: Use of Roman Numerals in Music Analysis	2 days	Mon 20-03-02	Wed 20-03-04
Music Theory: Major and Relative Minor Scales	2 days	Wed 20-03-04	Fri 20-03-06
Music Theory: Chords & Chord Progressions	4 days	Fri 20-03-06	Fri 20-03-13
Delivery of vocals	4 days	Mon 20-03-02	Fri 20-03-06
Instrumentation: Lead, Rhythm, Bass and Drums	4 days	Fri 20-03-06	Fri 20-03-13
Secondary App Content Milestone	0 days	Fri 20-03-13	Fri 20-03-13
Robert Smith: Chord Changes	8 days	Mon 20-03-02	Fri 20-03-13
Generate MP3 Recordings	2 days	Mon 20-03-02	Wed 20-03-04
Generate Chordify Files & Music Phrases	2 days	Wed 20-03-04	Fri 20-03-06
Analyze Chord Changes	4 days	Fri 20-03-06	Fri 20-03-13
Chord Changes Milestone	0 days	Fri 20-03-13	Fri 20-03-13
Systems Analysis & Design	17 days	Mon 20-03-02	Fri 20-03-27
Data Flow Diagrams	3 days	Mon 20-03-02	Thu 20-03-05
Context Entity Relationship Diagram	1 day	Thu 20-03-05	Fri 20-03-06
Key-based Entity Relationship Diagram	2 days	Fri 20-03-06	Tue 20-03-10
Fully-Attributed Entity Relationship Diagram	2 days	Wed 20-03-11	Fri 20-03-13
Systems Sequence and State Diagrams	4 days	Fri 20-03-13	Thu 20-03-19
Primitive Diagrams	5 days	Thu 20-03-19	Fri 20-03-27
Systems Analysis & Design Milestone	0 days	Fri 20-03-27	Fri 20-03-27

Database Design	9 days	Fri 20-03-13	Fri 20-03-27
Song Table	1 day	Fri 20-03-13	Mon 20-03-16
Phrase Table	2 days	Mon 20-03-16	Wed 20-03-18
Chord Transition Probability Table	1 day	Wed 20-03-18	Thu 20-03-19
Data Entry - Song Table	1 day	Thu 20-03-19	Fri 20-03-20
Data Entry - Phrase Table	3 days	Mon 20-03-23	Thu 20-03-26
Data Entry - Chord Transition Probability Table	1 day	Thu 20-03-26	Fri 20-03-27
Database Design Milestone	0 days	Fri 20-03-27	Fri 20-03-27
User Interface Design & Programming	17 days	Mon 20-03-02	Fri 20-03-27
Guitar Fretboard	1 day	Mon 20-03-02	Tue 20-03-03
Scale/Chord References	2 days	Tue 20-03-03	Thu 20-03-05
Circle of 5ths	2 days	Thu 20-03-05	Mon 20-03-09
Chord Progression Diagrams	2 days	Mon 20-03-09	Thu 20-03-12
User Controls	2 days	Thu 20-03-12	Mon 20-03-16
User Interface: Programming, Front-End	8 days	Mon 20-03-16	Fri 20-03-27
User Interface Design Milestone	0 days	Fri 20-03-27	Fri 20-03-27
Graphic Design	19 days	Mon 20-03-02	Tue 20-03-31
Circle of 5ths - Major (6), Mixolydian (6) and Natural Minor (6)	1 day	Mon 20-03-02	Tue 20-03-03
Scales - Major (50), Mixolydian (50) and Natural Minor (48)	5 days	Tue 20-03-03	Tue 20-03-10
Triads - Major (19), Minor (19), Diminished (18) and Augmented (18)	2 days	Wed 20-03-11	Fri 20-03-13
Guitar Chords - Major (42), Minor (42), Diminished (12), Augmented (24)	4 days	Fri 20-03-13	Thu 20-03-19
Extra Guitar Chords - 5 (19), 6 (17), 7 (36), maj7(23), m6(23), m7(24), etc.	6 days	Thu 20-03-19	Mon 20-03-30
Misc Images - Fretboard (1), Transitions (1), Cadences (1)	1 day	Mon 20-03-30	Tue 20-03-31
Graphic Design Milestone	0 days	Tue 20-03-31	Tue 20-03-31
Server Installation	2 days	Fri 20-03-27	Tue 20-03-31
Server Installation	2 days	Fri 20-03-27	Tue 20-03-31
Server Installation Milestone	0 days	Tue 20-03-31	Tue 20-03-31
PHP & MySQL Development	15.5 days	Tue 20-03-31	Tue 20-04-28
Development Meeting	0.5 days	Tue 20-03-31	Wed 20-04-01
PHP & MySQL Development, Sprint 1	5 days	Wed 20-04-01	Thu 20-04-09
PHP & MySQL Development, Sprint 2	5 days	Thu 20-04-09	Mon 20-04-20
PHP & MySQL Development, Sprint 3	5 days	Mon 20-04-20	Tue 20-04-28
PHP & MySQL Development Milestone	0 days	Tue 20-04-28	Tue 20-04-28
Website Testing	5 days	Tue 20-04-28	Wed 20-05-06
Website Testing Week	5 days	Tue 20-04-28	Wed 20-05-06

Website Testing Milestone	0 days	Wed 20-05-06	Wed 20-05-06
Website Demonstration	1 day	Wed 20-05-06	Thu 20-05-07
Website Demo	1 day	Wed 20-05-06	Thu 20-05-07
Website Demo Milestone	0 days	Thu 20-05-07	Thu 20-05-07
Website Revision	5 days	Thu 20-05-07	Fri 20-05-15
Make recommended changes to website	5 days	Thu 20-05-07	Fri 20-05-15
Website Revision Milestone	0 days	Fri 20-05-15	Fri 20-05-15
Website Training	4 days	Fri 20-05-15	Thu 20-05-21
Website training to Steven Power's students	3 days	Fri 20-05-15	Wed 20-05-20
Meeting: Evaluation of website prior to release	1 day	Wed 20-05-20	Thu 20-05-21
Website Training Milestone	0 days	Thu 20-05-21	Thu 20-05-21
End of Project	1 day	Thu 20-05-21	Fri 20-05-22
Delivery of website to Robert Smith	0.25 days	Thu 20-05-21	Thu 20-05-21
Project End Celebration	0.75 days	Fri 20-05-22	Fri 20-05-22
End of Project Milestone	0 days	Fri 20-05-22	Fri 20-05-22