

Callie Schmit
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Martin Gardner Project

A Palindromic Song

For my project, I wrote a short song, titled "Tennis". It is a palindromic song, meaning it can be played backwards, from the end, and it will sound the exact same as if it was played from the beginning. There are over 160 notes in the single page song. Surprisingly, it took quite a long time to write, even though it is just one page. I had never tried to write a song before, so it was an interesting experience. When writing, you want to have the notes sound nicely when played with each other, which I think I have done. In terms of creativity, the song is completely my creation. I wrote it from scratch, so it is as creative as I could get.

I wrote it on onlinesequencer.net, which was quite easy. You click where you want your note to go on what looks like graph paper with notes on the left side to organize the whole system. When you click a space to put a note you hear right away what it will sound like. By pressing the space bar you can hear the entire sequence you have created. I found the online sequencer by chance, just searching Google for ways to write a song. I had thought that writing it online would be easier than writing it with pen and paper with a piano in front of me because I could easily replay sections with a click of a button rather than thinking in my head about what notes to play. Once I finished the song I wrote on the online sequencer, I exported it to a program I had also found on Google that I downloaded to my computer, called MuseScore2. This turned my creation into sheet music. I already had the sound bytes from the online sequencer, so now I had completed my project. It was important to have the sheet music to physically see how the song is a palindrome. I wanted to make sure you could hear it too though because that was the finished project.

I think the song has an intensity to it, but obviously has its ups and downs. This is what tennis is like to me. When I was thinking what to name it, “tennis” automatically popped into my head. Right now tennis is a big part of my life because I am on Butler’s tennis team and we have practice and matches throughout the school year. When playing, it is important to be intense, but also realize there will be ups and downs. You are not going to win every point, nor probably every game. Especially at Butler, we play a lot of really good teams- so in the past three years, we have not won a lot. It is very important to keep that intensity even in frustrating moments. I think this song explains the emotions I feel while playing tennis. There are a lot of back and forth type sounds, which can be translated into the ball going back and forth over the net. In tennis, there are a lot of quick motions and quick moving of ones feet, so I chose to have the song be played quite fast, rather than at a slow tempo.

I was interested in making this my project because piano used to be a big part of my life. This song is meant to be played on the piano (the piano is what I have it played to, but I guess as sheet music goes, it can be played using any instrument). I took piano for five years, stopping right before I started high school. My parents forced me to play for those five years and I hated most of it. Now though I am so grateful that I am able to play an instrument and read music. It is a talent I am proud to have. This talent let me being able to look at the sheet music I wrote and understand it. Some people, I’m sure, will look at the song and not understand the differences between the different notes. Whenever I go home to my house where there is a piano or if I found one randomly, I love to play. Now I can say I wrote a song, although short, but it is still something not a lot of people can say.

In relation to Martin Gardner, Gardner was very interested in palindromes. Gardner wrote about palindromes in *Mathematical Circus* and *Scientific American*, among other

platforms. I also presented on palindromes about a month ago, so I learned a lot about them from researching for my presentation. Originally I thought palindromes were solely words, but they can be whatever you want. Pictures can be palindromic. Numbers can be palindromic. I had never seen a palindromic song before, but I thought it might be fun to try and write one.

In terms of connecting to the honors program, I think that two goals of the program stood out above the rest when creating my song. One goal is “research and creativity”. I had already researched palindromes from my group project, but that project did not involve as much creativity as this project. I researched palindromes a little more to understand the background, but I also researched ways to write music and programs to do it on, which led to the programs I used and the song I created. This palindromic song was completely my own creation, so it really can’t get more creative than that. The other goal that I think I have accomplished is the “willingness to explore new areas of knowledge”. I have never written songs, so it was very interesting to try my hand at this. My major is actuarial science, so I am mostly working on math problems in my free time. This was something completely different, but I am glad I got to try it out. It gives me a new appreciation of people who write songs. This was a lot of work, but I cannot imagine writing a three-page song with lyrics attached to it. I am very glad that I got to go out of my comfort zone and do a project that I never expected to do when coming to college.

Tennis

Callie Schmit

$\text{♩} = 70$

Musical staff 1: Treble clef, key signature of one sharp (F#), 4/4 time signature. The staff contains a series of chords and rests, starting with a whole rest followed by eighth notes and chords.

Musical staff 2: Treble clef, key signature of one sharp (F#), 4/4 time signature. The staff contains a series of chords and rests, starting with a quarter note followed by eighth notes and chords.

Musical staff 3: Treble clef, key signature of one sharp (F#), 4/4 time signature. The staff contains a series of chords and rests, starting with a quarter note followed by eighth notes and chords.

Musical staff 4: Treble clef, key signature of one sharp (F#), 4/4 time signature. The staff contains a series of chords and rests, starting with a quarter note followed by eighth notes and chords.

Musical staff 5: Treble clef, key signature of one sharp (F#), 4/4 time signature. The staff contains a series of chords and rests, starting with a quarter note followed by eighth notes and chords.

Musical staff 6: Treble clef, key signature of one sharp (F#), 4/4 time signature. The staff contains a series of chords and rests, starting with a quarter note followed by eighth notes and chords.

Musical staff 7: Treble clef, key signature of one sharp (F#), 4/4 time signature. The staff contains a series of chords and rests, starting with a quarter note followed by eighth notes and chords.