

# Investigation of Methods of Computer Music Generation

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## 1 Problem Statement

Music, much like painting, is a complex art that is not entirely understood. Research into the artificial creation of music helps to unlook the underlying mystery. This project will aim to study and implement various known methods of computer music generation as well as devising new ones.

## 2 Purpose

The applications of such articially generated music are nearly infinite. Programmers making a game can use it instead of finding somebody to write music for them. Supermarkets and elevators can use it as white noise. A major challenge is to make music that is new and fresh yet still pleasing to the human ear.

## 3 Scope of Study

To determine feasibility of music generation methods, I will rate the resulting music subjectively and glean the best algorithms. If my own rating does not produce sufficient data, I will poll others as well, then compile all of the raw data and draw conclusions.

## **4 Background**

The use of artificial intelligence to produce music is an expanding field, and there is already significant research. Graduate students at many top colleges have implemented algorithms; in this project, these will be used and evaluated to determine the best.

## **5 Procedure and Methodology**

Initially, interface between the program and physical output will be studied. Once a working system for playing music audibly is constructed, the different algorithms available will be implemented, noting their results. Following evaluation, improvements will be made, possibly creating new methods.

## **6 Expected Results**

By the end of the project, I hope to have code to produce at least a simple melody, if not complete with harmonies as well. It should be able to create minutes of music on the fly as well as saving it for future use.