

Program Deliverable Conception Thoughts:

The aim is to produce a program that is capable of generating music in some way. In general, the program should be seen to engage in an act of 'composition' in generating the music. This implies that randomness in the generation of the music should be kept to a minimum, and the emphasis will be on the program engaging in some sort of 'inspired' process in the generation of its music. As such, I have been looking into the potential of codifying a theory of musical grammar articulated in Lerdahl and Jackendof's 'A Generative Theory of Tonal Music' which aims to provide conceptual models of how a human conceptualises his experience of music. The emphasis of the theory is on how a human experiences music, and the grammar in itself is not intended to provide structure for computer generation of music. My task is to take this theory of musical grammar and create a program that is able to compose music with reference to this grammar. In this sense the program will be instilled with innate principles of music comprehension, and will use that innate knowledge in the same way that a human who is not experienced in musical composition is nonetheless able to put together a reasonable sounding string of notes, given time, trial and error.

The program developed should promote a modularisation of the source code. The basic structure should seek to provide an interface that enables a multitude of extensions, such as the ability to implement and add new compositional modules that encapsulate further rules and constraints. For example, it might be desired that the program makes use of certain compositional rules not codified within the original program. The original program should be structured such that its compositional technique references the rules available to it at various stages of the composition, and that adding new rules is a simple matter of plugging it into the list of modules to be referenced as part of the composition process. This will promote more complex features of musical composition, such as reflections about instrument constraints and suitability, idiom specific constraints, and perhaps modules that work to instil a unique 'style' for the program.

The program should be aiming to model how an inexperienced human composer engages in musical composition, and to this end randomness is tolerated as a part of the trial and error process. Nevertheless, even an inexperienced human composer will have notions of which notes are suitable and which aren't, and this should be able to be modelled by the program in the production of music.

The development of this music generation program has a further aim in assessing the GTTM musical grammar theory and its suitability to music compositional programs. Primarily we are asking the question 'how far is a musical grammar aimed at modelling human experience of listening to music capable of being meaningfully employed in the process of music generation?' We are further providing a critique of the theory on its own terms, namely 'how far is the theory able to provide a conceptual framework that models the human conceptualisation of music?' We further inquire as to how far this latter question is important in producing computer models of music analysis and composition.

Overall, we are looking to produce a program capable of music composition that goes beyond mere random generation of music. That is, it is not good enough that the generated music sounds fine and meets the rules and constraints of the musical grammar if it has only been obtained via a lengthy and dumb series of trial and error. Rather, the music should be generated via a process of musical appreciation and anticipation. The next note should not be chosen at mere random, and then judged against the musical grammar rules, composition rules, etc. Rather, it is in the choosing of the note (and, on the macro level, the conception of some sort of broader musical structure) that our interest is directed. We want the program to be able to engage critically in the generation of music, and for the next note to be chosen as a process of inspiration, judged by the context of the broader schema of the piece. To this end, it is the compositional process that we find to be the most interesting, and not the result.

Should the process of creating compositional rules be (at least in part) in terms of the GTTM rules?
E.g. prefer a choice of pitch that promotes a prolongation, etc etc.