Assessing the relative complexity of a music score has been the subject of much debate and disagreement among musicians. Nevertheless, the ability to rank a music score's complexity has become essential in curricular recommendations, competition specifications, etc. Without a systematic and objective approach to assessing the complexity of a music score, this non-trivial cognitive task depends solely on individual opinions, a process influenced by personal biases and lacking common criteria. Additionally, people buying sheet music face great uncertainty when determining whether unfamiliar music matches their playing ability. This project puts forward an automated approach to assessing the relative complexity of a music score that is systematic and objective. As a proof-of-concept of the approach, we propose to develop an automated, Web-based application for music educators and performers. Although the benefits of this work largely apply to those in music fields, the core research required combines the unique knowledge of musicians and music educators with that of computer scientists and software engineers.

This research exploits a fundamental tenet that—for a given instrument—different notes, intervals, and key signatures represent dissimilar levels of difficulty, which vary depending on the performer's proficiency. Furthermore, difficulty levels also depend on parameters including tempo, dynamics, and articulation. The approach is twofold. First, experts rank the relative difficulty of these musical components for different playing proficiencies and instruments. Second, an automated algorithm applies this ranking to music scores and calculates their respective complexity. Once music experts agree upon the complexity ranking for a given level of proficiency, this approach will automatically calculate a music score's relative difficulty. This new automated approach has the potential to empower musicians to expeditiously assess a music score's suitability for the abilities of intended performers.