Web based approach to managing audio and video archive for unique Bulgarian bells[*]

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Abstract

The aim of the presented paper is to propose a Web based approach to managing audio and video archive for unique Bulgarian bells. In the present time, we work on a project[*], whose purpose is to study and identify several dozens of the most valuable bells in our churches, monasteries and museums. An audio and video archive is developed by using advanced technologies for analysis, reservation and audio data protection, and it contains:

- The main bells' characteristics: design, form, type, geometric size, decorative and artistic scheme, weight, material, state, characteristics of chime, data about the producer and owner of the bell, estimation of its historical value;
- Digital photos and video recordings of the bells while being tolled;
- The frequency spectrum of the bells during a stroke;
- The bells' frequency spectrum in main tone;
- Charts representing the sound fade by time, sound stream, sound pressure and other acoustic characteristics, etc.

The developed client/server system provides users the possibility of accessing information about different characteristics of the bells according to their specific interests. We describe the architecture of the Web based system and the services, included in its realization. We also represent the structure of the created database that stores the necessary information. The described model of the database is in keeping with the entity-relationship model (*ER model*), introduced in [1]. We produce the relational tables obtained after the transformation of the created ER model into relational [2]. These relations are realized by using the database management system Microsoft SQL Server [3, 4].

The interface is developed by means that allow establishing a connection with the database of standard Web browsers. This way gives users the possibility of accessing easily detailed information about unique bells from our national culture-historical heritage.

References

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[*] The work was supported partially by the Bulgarian National Science Fund under Grant KIN-1009/2006