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Information system for management of biological samples

ABSTRACT

The thesis addresses the problematic of handling, storage and analysis of large quantities of data, which are the product of the working process in research laboratories. A supporting information system that addresses the aforementioned issue was developed and implemented. Printed data records were replaced with centralized database environment. User interaction with the database was realized via a graphic user interface, which provides input and display of data. In addition to the electronic recording of samples and storage of sample data, information system also introduces standardized markings of samples with easily readable QR codes, which provide unique sample identifiers. The system also introduces the structure of physical labels on the sample itself, which, in addition to optical code, must also contain the data necessary for rapid recognition of samples.

We get acquainted with the technologies and methodologies used. We review the entire process of development and implementation of individual components of the system. Finally, we describe the steps of the process in which samples are included, from labeling and recording the initial sample, to the conclusion of the experiment with the report of the analysis of obtained data for each sample.

Key words: information system, QR code, sample documentation, functional genomics