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MOBILE APPLICATION DEVELOPMENT FOR EDUCATION PROCESS QUALITY MONITORING PERFORMANCE

Nowadays during the education process teacher has a necessity for different students polls which allow to determine the course urgency and estimate the students skills. There are different options for survey conduction such as questionnaire or poll but it consumes a plenty of time. Therefore there is the problem of education quality monitoring automatization. One of the solution options is the development of mobile application allowing to simplify the monitoring process. So teacher would be able to create a survey with a mobile device and students could take it quickly by scanning the QR code. Study results save to database automatically thus teacher gets quick access to statistical information.

Before the application development starts it is necessary to perform its conceptual modeling. One of the most convenient notations for this is IDEF0. The AS-IS chart construction is impossible because nowadays the performing of this process is complicated and cannot be formalized. Let us go to the TO-BE chart construction. Let us define the A0 process of the diagram as «Perform the education quality monitoring». «Education content» would be the input parameter and «Statistical information» and «Report» would be the output. The process will be performed by the teacher by the mobile application on the documentation basis. The decomposition of the process is given on the Figure 1.

Based on the chart the use case diagram was constructed in UML notation which represents the developing application users (actors) interaction. The teacher conducts the «Create a survey» and «Collect the statistical information» processes. The survey creation contains such process as QR code formation which allows get quick access to it. From the student side the «Scan the code» and «Take a survey» processes are performed.

In conclusion is worth mentioning that the mobile development would be performed for all popular on the Russian market operating systems: Google Android, Apple iOS and Windows Phone and REST API would be created for the unification of requests to server module. The ligament of Python programming language and free framework for Django web-applications which uses MVC («model-view-controller») design pattern would perform as the server module.

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SYMBOL SYSTEM USE IN PUBLIC BUILDINGS

The system for quick access to reference information about services, order and conditions of service, ability to access the every object in building should be provided in any building. In this case is necessary to consider carefully the availability and location of target visit area.

Target visit area is the place where person receives a service. It could be organized near the reception in the lobby, at the entrance to the building, in the cabinets, in the reading or audience hall and other areas depending on specific providing service. Reference information is predominantly located on desks, stands, different signage and scoreboards in print. In such cases a certain rules of symbols use in the system of provision reference information which will be examined below should be provided.

In the navigation and orientation system there is a important information support concept. It characterizes the availability of the object and its understanding by human. The existence of sufficient and complete information support conserves time and reduces physical strength consumption which is especially important for the object use by people with limited mobility. Particularly the information availability is the vital factor in the orientation in public spaces for some categories of lower mobility people with the visual or hearing disability. It is necessary to consider that for hearing disabled people one type of devices is provided and the other for visual disabled people. Additionally the notations installation which helps to interpret clearly the existence of this equipment is also required.

— Color and symbol use in the interior elements depending on the kind of object is necessary.

Color should be used delicately. There should not be the domination of the symbol system over the surrounding space. The color use in interior decoration should be through the parts of walls, ceiling, floor inserts, in furniture decoration, lamps, et al.

— The development of navigation stela for necessary information obtaining is required. And also to take into account its location in the lobby near the main entrance group.

— To take into consideration the location of information tactile mnemonic wall scheme of premises for vision disabled people.

Mnemonic scheme is a complex tactile plan-scheme (location plan of cabinets in the building, its entrance and exit, convention signs) which is for visual disabled people

inform, safety and space orientation. All information is represented in the flat-convex elements view and captions on Braille.

—Use of icons including tactile for notation of particular premises (sanitary and hygienic, offices, public) of building for all object users to inform about premise appointment.

Signposts application with tactile font and raised-point Braille is also required.

Thus, it lead to following conclusions that it is necessary to:

— Use uniform system of symbol and color combinations for the designed object for both interior and exterior.

— Apply different types of signposts, signages, information stelae, various plates for providing necessary data about object for space users.

— Take features of particular designed space into account.