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Structural-functional analysis of interactive information system “Mobile student”

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The process of education continues even after classes, that is why student need to use latest learning materials, also he needs information about his current grades in all subjects, he needs to be in touch with lecturers and other students. Having these entire materials student will be able qualitatively process all information without delays. Interactive information system "Mobile Student" helps with that.

FOREWORD

Rapid development of computer systems and networking technologies result in the fact that users have to acquire and process wealth of information that grows and changes incredibly rapidly. The pressing problem turns up how to follow-up useful and current information. Under such conditions more and more systems for distant education appear; this is due to the fact that such systems have many advantages, one of them is mobility. Mobility gives the opportunity to cope with informational narrowness and gives free access to current information. At the same time the full-time system of education still exists. This system of education has low level of mobility and flexibility. The process of education continues even after classes, that is why student need to use latest learning materials, also he needs information about his current grades in all subjects, he needs to be in touch with lecturers and other students. Also it is very important to have continuous access to own preliminary work and materials (term papers, research works, and materials of graduation work). Having these entire materials student will be able qualitatively process all information without delays.

In a majority of Netware and desktop software such functions are already been realized, but they are separated and not adapted for students needs. That is why, the problem of the development of software - unified system providing students’ mobility and been realized in web environment- arises. For such system access assurance it is necessary to make its adaptation to handheld devices and modern mobile platforms (iOS, Android, Windows Mobile, etc.). This system has to be based on modern programming languages and frameworks. Provided that the main programming demands to system “Mobile Student” will be reliability. Applied programming language has to have stable and supported code and provide safety in use, especially protection against hacking and failure. Functioning of this system demands to execute multiple selections and dynamically give all data to the user. It limits the selection of programming language for system realization. In that case, to our opinion, the most reasonable is to use JavaScript and framework ExtJS [1] based on its basis. Due to such connecting it is possible to provide burst performance and asynchronous operation of all components of the system. Interactive environment of the system “Mobile Student” has to have the following functionality:

- To have cloud storage for all working files (term papers, practical work, graduation work, etc.);
- Storage for all documents has to be based on CVS-system (program product relating to category of revision control system);
- To be adapted to handheld devices (or with the help of software applications for handheld devices or on web-based application, that is more important);

• To have storage system for data bulk (storage of current grades of student in all subjects);

• To be resistant to loading (simultaneously handle with enquiry of big amount of users and managers (those who enters data);

• To have flexible interface (to be adjustable to users' needs, to be clear and plain in use);

• To have system of registration, authorization and authentication for users' accounts (to prevent search and adding incorrect information).

This system must have big operability, as a great number of users will work with it; that is why its organization has to be like organization of all modern high load projects (fig. 1).

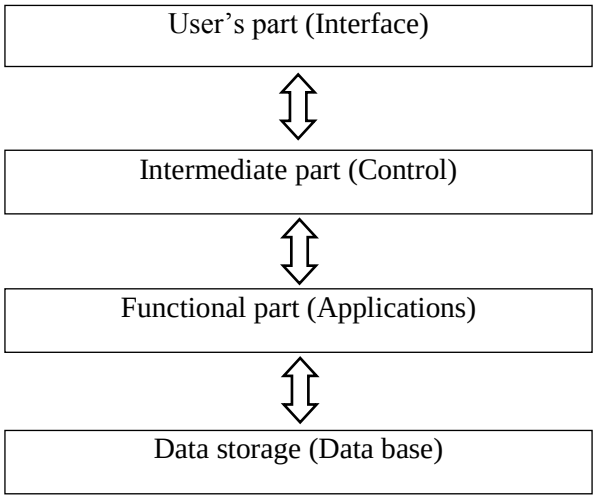

Figure 1 Organization of high load web-applications

Due to such structure and separation of logics from data submitting the possibility to provide stability and high performance of system work appears.

Approximate construction model of such system is showed on fig. 2.

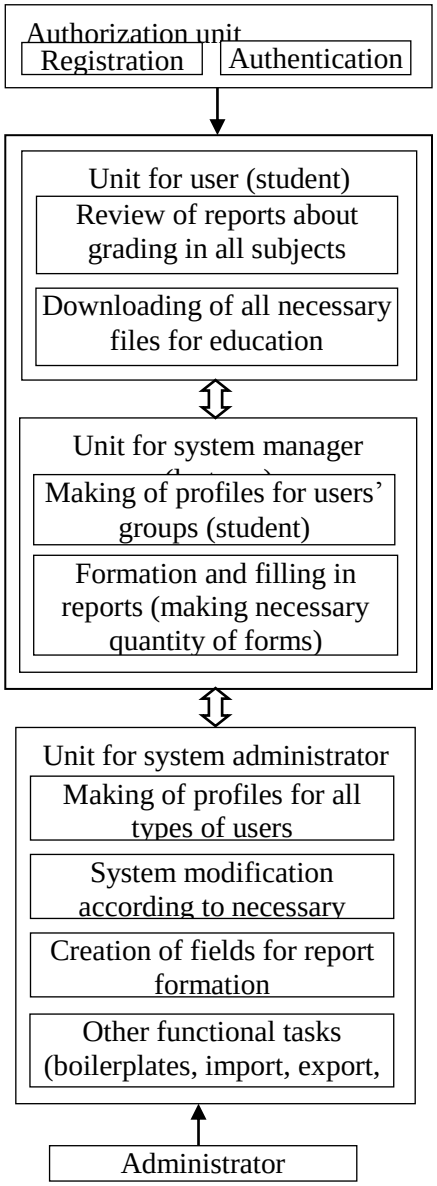

Figure 2 Construction model of system "Mobile Student"

CONCLUSIONS

In the result of structural and functional analysis the interactive information system "Mobile Student" was suggested. This system will help to improve the efficiency of a student due to mobility, regular awareness about student's progress and access to current teaching materials on selected subjects.

REFERENCES

[1] http://docs.sencha.com/extjs.