



SYSTEM OF SCIENTIFIC ACTIVITY OF UNIVERSITY STAFF

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Abstract : Automated systems are technical solutions implemented by many enterprises, educational institutions and other organizations seeking to increase efficiency in their activities. In particular, the project automating the management of scientific activities of the university's scientific staff will also reduce the human interaction resource (direct human factor resources), establish an integrated platform for the use of the system, and integrate with many systems, including foreign and several local newspapers and magazines. by establishing integration, it implements a number of conveniences in using the platform, including automatic data addition, processing, statistical and visual effects. In this case, a local system for processes directly related to the work of employees will be created and will serve as the next major step in the development of the industry. In this case, a single platform is formed by using the system cross-platform and through devices.

Keywords : Automated system, scientific activity, human interaction resource, statistics and visualization, integrated cross-platform and devices.

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the current conditions of rapid penetration of information technologies into all fields , discoveries in scientific research are intensively growing and multiplying, especially in addition to the fact that the impact of information technologies on scientific discoveries is also increasing . management of these processes with the help of modern technologies is becoming more and more complicated. In turn, the problems of processing and managing such a large volume of data are becoming more serious. Therefore, if we clarify the new term 'Scientific Workflow ! ' By SW, we can refer to scientific work-oriented processes and their various stages, for example, the acquisition of a scientific work process, its hypothesis, integration stage, analysis or visualization. Generally speaking, scientific workflow (SW) is a description of the process of doing scientific work.

Now, SW offers solutions to the above-mentioned problems. The main purpose of SW is to automate this process in order to solve the problems that occur in this process, i.e. automation of scientific research activities . In particular, the wide development of artificial intelligence provides a solution to many problems related to the human factor in `` automation management of research activity '' . In addition, the automation of scientific work processes is a general mechanism for such processes as real-time synchronous monitoring of scientific work processes, analysis, recording of its history, reanalysis of existing scientific work

processes, elimination of shortcomings, rediscovery, and distribution of resources during the execution of the scientific process. serves as In short, the process of automation includes the high-level data processing of the scientific work mechanism as well as the problem-solving features.

System automation

At the moment, a number of projects automating educational systems are being used in almost all higher education institutions in our country. HEMIS, MOODLE systems are clear examples of this. This information system provides electronic education services to administrative staff, professors and students due to the automation of the main activities of higher education institutions. In particular, through this system, we can get information about the activities of academic staff. However, due to the fact that the scientific activity of the employee is not fully reflected, the automation of the scientific activity of employees remains an urgent issue for us.

An important aspect of the automation of the scientific activity system

The most important aspect of this system is that it includes the development of a platform in the form of mobile applications for Android and iOS systems and information directly related to the scientific activities of university employees. is to ensure full automation, i.e. transition of management to paperless technology . A natural question arises: why should automation be built on top of mobile applications or a web project? Because today, mobile applications and web platforms make it easier to perform all aspects of management , and ensure fast and objective decision -making . In addition, mobile applications are currently convenient to use , pocket-sized and do not choose the distance, which is one of its main advantages, and in fact, many services are facilitating human activities . With the development of mobile technologies, e-learning, along with mobile teaching, has penetrated deeply into scientific activity projects and is a solution to a number of problems in it. In particular, let's imagine that we can get to know the activity of a volunteer teacher, professor or a researcher at the university without going to him, saving his time and getting to know him on our mobile device or computer. Using our device, we will have the opportunity to get to know and study in detail an article, thesis or dissertation written by a researcher and published in a foreign or local magazine.

Advantages of creating a local scientific activity system

In fact, the above-mentioned issues remain very relevant for the higher education system of Uzbekistan. We are familiar with a number of projects that automate this very idea on an international scale. We can show Google Scholar (<https://scholar.google.com/>) as a bright example. Through this system, we can get acquainted with the scientific projects of professors-teachers, doctors of science, associate professors, teachers of the world level (including scientific staff in Uzbekistan). Even this system is built in such a way that when an employee publishes a new scientific work in foreign journals, the same work will automatically appear in Google Scholar . Because the system is integrated with a number of magazines. In order to implement a similar system in local higher education institutions and integrate it not only with foreign magazines, but also with local newspapers and magazines, I will work with this project in detail and on a larger scale . i ate In addition, the project was not limited to the work of academic staff (article, thesis, dissertation, etc.), but I developed models to add a number of opportunities to the system, such as statistics, determining the national rating of higher education institutions. Using these features, I started automating the possibility of obtaining statistical data among the academic staff in terms of years, among

university employees (in the section of the department, in the section of the rating of scientific works in foreign journals and local journals). These statistical data are not limited to academic staff, but I continue to form a database on the issue of the rating of universities' departments, infrastructures, and the issue of building the necessary models.

formation and development of system automation

Actually, creating a system for the possibilities listed above is a big development process, so I divided it into several parts.

1. To study the scientific activity of employees. This is the most fundamental stage of building the system, in which I mainly worked with the important aspects of the scientific activity of the employees, the information from their published articles and dissertations. The reason is that this information is the most important aspect for building our system. Scientific activity is fundamentally different from each other in each teacher, department, university. However, at this stage, the main goal required from this stage is to develop a working model of the system (data structure and algorithms) using these different and common details.
2. Development of system architecture. As mentioned above, it was mentioned that the system will be cross-platform (optional operating system Windows, Linux, MacOS or mobile devices Android and iOS systems). Therefore, it is very important to develop a suitable architecture for the system, because the system needs to be scalable, reliable and have a certain structure. Let's say that a new university is opened or a department is opened, and when some statistical information changes, the system should show these changes to the user automatically. If development is required even as data is added, the architecture interface should be well thought out so that it can be done easily.
3. Display of scientific works in the system. After the appropriate architecture is completed, a suitable model for the database is built, and now the most important part of the system, i.e. the development process (in English - development) begins, and in this I start my work as a programmer, and after registering the office of each employee then I will automatically form it and begin to make opportunities that scientific works can add to it
4. Statistics. This stage also consists of the development process, but unlike the previous one, it is not limited to adding information, but directly using the system database to provide visualization, statistical data, graphs, illustrative of the national rating system. I will do demonstration work

Summary

The highlighted platform provides an easy and convenient way to search for resources such as scientific literature, including articles, theses, books, academic publications, international journals, etc., related to personnel activities for higher education institutions in Uzbekistan. In a short time, it will be possible to get the desired researcher and his literature or statistical data through a convenient interface. However, by making such a system integrated, it will be possible to prevent a number of data management flows that require human resources and errors and shortcomings that may occur in it. The biggest achievement is that by centralizing the activities of almost all scientific staff in our country in one integrated system, we will be able to move to a very large stage of development, and this will be an important step in the formation of our national system.

References:

1. "Mobile applications for academic activity management: A systematic review" by SH Lim et al. in the Journal of Educational Technology & Society.
2. "Implementing a mobile app for academic activity management at a university: A case study" by J. Smith in the Journal of Information Technology in Education.
3. "The impact of a mobile application system on university employee productivity" by TS Lee in the Journal of Higher Education Management.
4. "Designing a mobile application system for academic activity management: User-centered approach" by EK Kim in the Journal of Human-Computer Interaction.
5. "Evaluation of a mobile application system for academic activity management: A usability study" by A. Johnson in the Journal of Educational Multimedia and Hypermedia.
6. "Examining the adoption of a mobile application system for academic activity management among university employees" by M. Chen in the International Journal of Mobile Learning and Organization.
7. "A comparative study of mobile applications for academic activity management: User preferences and performance" by Y. Huang et al. in the International Journal of Mobile Computing and Multimedia Communications.
8. "A conceptual model for integrating mobile technology into academic activity management for university employees" by M. Al-Fawzan in the Journal of Information Technology and Economic Development.
9. "Google Scholar Website" scholar.google.com