

Use of modern technologies in the development of the site writers alley

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Abstract. The article is devoted to database security in the creation of the Alley of Writers website, which promotes the treasures of our national literature on the Internet. The creation of literary portals, using modern technologies, is the development of single interactive portal, Web-site mapping process, the relationship between the main directions of the website, issues such as the conceptual model of information security in the provision of database security, as well as the methods and tools used.

Keywords: database, client part, server part, information model, project, sitemap, model, decomposition, subjects, objects.

Introduction. Currently, the rapid development of technology has radically changed all spheres of human life and his way of life. Incredible processes for our ancestors yesterday are performed today with the help of smartphones that have no buttons. Such advances in technology have brought many benefits and challenges to human life. Effectively using modern technologies, well-known writers who have contributed to the development of our literature will have the opportunity to promote their rich scientific heritage not only in our country, but throughout the world. The most convenient, fast and efficient way to exchange data in modern technologies and software is, without a doubt, the Internet and web applications. Any web application is based on a three-tier architecture that includes the client side and the server side of the software. The server side software consists of two main parts: the web server and the database. Nowadays, web servers include static web pages or scripts that manage dynamically changing the content that is visible to us by interacting with the database on the client side. The first task of the research is to develop a web application project and fill it with high-quality and useful content, the second task of scientific work in the field of information security is the main problem.

Main part

Today, the Internet has become an area that contains a lot of valuable information and services, and fulfills its mission through websites. As a result, all private and public enterprises now have their own websites. As of June 18, 2021, there are over 1.86 billion active online websites. ¹This figure itself highlights the importance of web programming and the Internet. Planning this well before you start your website development process will help you organize your business process more efficiently. A website of any complexity must go through many planning stages before it can start writing software, and then before problems arise. These steps include the Writers Alley site information model and site planning steps. Here are a few steps you can take to start the web development process:²

¹Statistic informations are taken from this url: <https://www.techradar.com/news/websites-at-30-how-much-has-the-internetchanged#:~:text=As%20of%20June%2018%2C%202021%2C%20there%20are%20over%201.86%20billion%20websites%20online%2C%20with%20Sitefy%20noting%20that%20more%20than%20547%2C200%20new%20websites%20are%20created%20globally%20every%20day.>

²For more information: <https://xbsoftware.com/blog/website-development-process-full-guide/>

- 1- Conduct research and formulate website goals
- 2- Website planning
- 3- Website design development
 - 4- Write the logic of the client and server parts
- 5- Create a database
- 6- Database Security
- 7- Testing and launch
- 8- Install service

Prior to the implementation of the above steps, in order to successfully complete the sequence of tasks, it is necessary to work according to a specific plan with a clear schedule for completing each stage. To define the entire development process, you can create a website development schedule, add tasks, and set important project milestones.

When developing a website, the developer creates information that allows the customer to evaluate how the entire site will look like. Based on the data collected in the previous step, a sitemap is created. The Writers' Alley sitemap is shown in the figure below:

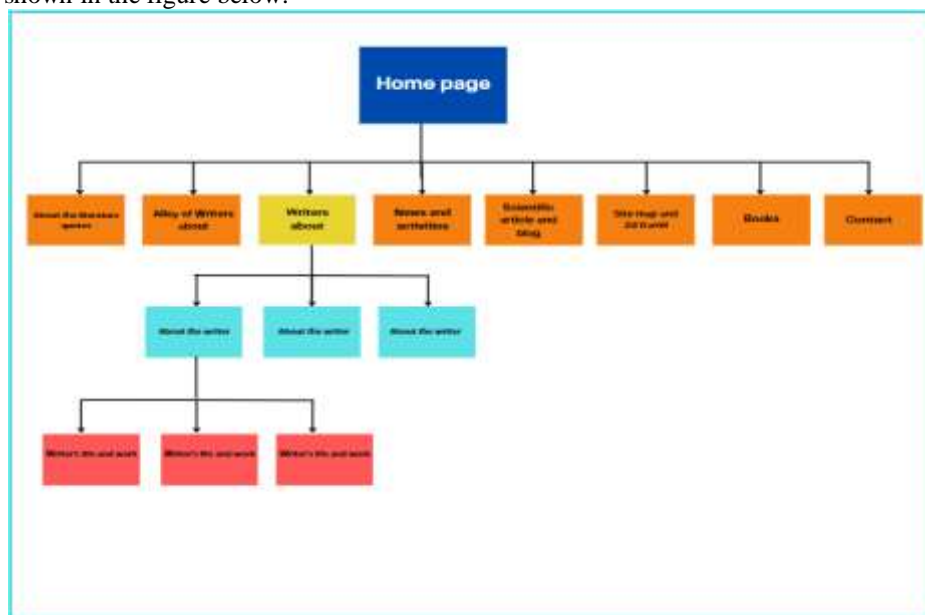


Figure 1. A sitemap of the Alley of Writers website.³

The sitemap should describe the relationship between the main areas of the site. Such a presentation will help you understand how useful the final product will be. This can show the "relationship" between different pages of a website, so you can gauge how easy it will be to find the information or service you need if the end user starts from the home page. The main reason for creating a sitemap is to create a user friendly website with easy navigation.

A sitemap allows you to understand what the internal structure of a website looks like, but does not describe the user interface. Sometimes, before you start coding or even working on a design, you need to confirm from the client that everything looks good so you can start the next phase of development.

Website security concept

When analyzing information security, the sum of sources, objects and actions, it is advisable to use modeling methods that allow you to form real situations. It should be borne in mind that the model does not copy the original and is simple. The model should be general enough to take into account the complexity of real movements. At the first level of decomposition, the conceptual model of information security consists of the following (Fig. 2):

³This sitemap is made with canva.com: https://www.canva.com/design/DAE3pzjSPFo/GuQVh3MygEnvDTz8_vb-aw/view?utm_content=DAE3pzjSPFo&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

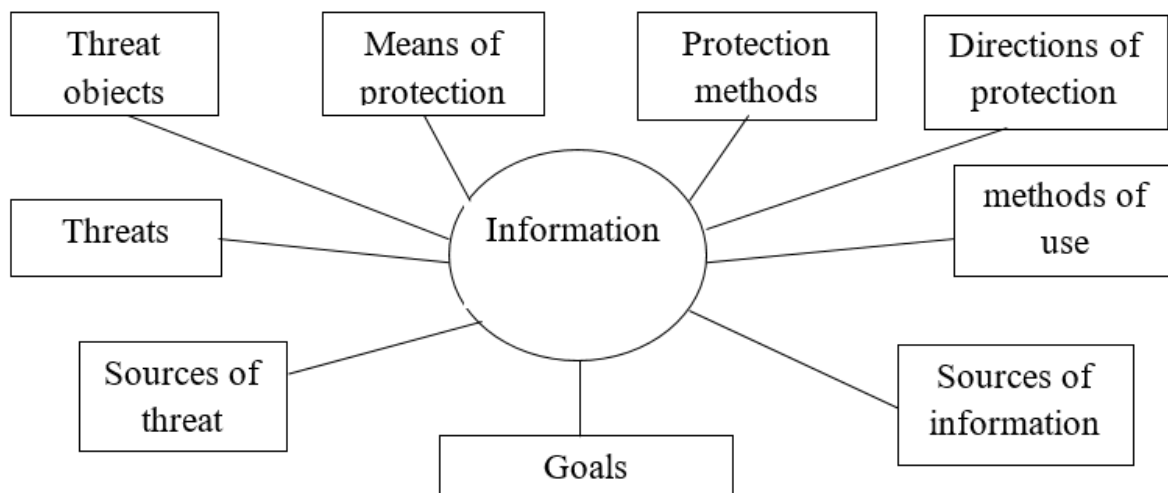


Figure 2. Conceptual Model of Information Security. ⁴

The security model is based on the following basic assumptions.

- The system consists of many interacting "subjects" and "objects".
- All interactions in the system are modeled by establishing certain relationships between subjects and objects.
- All actions are controlled by the traffic monitor and are prohibited or allowed according to the rules of the security policy.

The security policy is set in the form of rules, according to which all interactions between subjects and objects are mandatory. Interactions that violate these rules are blocked by usage controls and cannot be completed.

The totality of subjects, objects and relations between them (established interactions) determine the "state" of the system. Each state of the system will be safe or dangerous depending on the system proposed in the model.

The key element of the security model is the proof (theorem) that a system in a safe state cannot become dangerous if all rules and restrictions are observed.

Manufacturers of secure information systems use the security model in the following cases:

- when compiling the specification form (list of details) of the developed system security policy;
- in choosing and substantiating the basic principles of the architecture of the protected system, determining the mechanisms for implementing protection measures;
- in the process of analyzing system security as a reference model;
- confirmation of the characteristics of the system is carried out by a formal confirmation of compliance with the security policy.

By developing formal security models, consumers will be able to clearly and unambiguously communicate their requirements to manufacturers and evaluate the suitability of their secure systems for their needs.

The mandatory security model is based on Mandatory Access Control and is defined by four conditions:

- all subjects and objects are identical in one sense;
- a grid of information confidentiality levels;
- Each object of the system is assigned a confidentiality level that determines the importance of the information contained in it;
- Each system object is assigned a usage level in a computer system that determines its level of trust.

The main purpose of the mandatory security model is to prevent the leakage of information from high-level objects to low-level objects, i.e., to prevent unwanted downward flow of information in a computer system.

⁴This model is taken from the Tashkent University of Information Technologies Information Security lectures

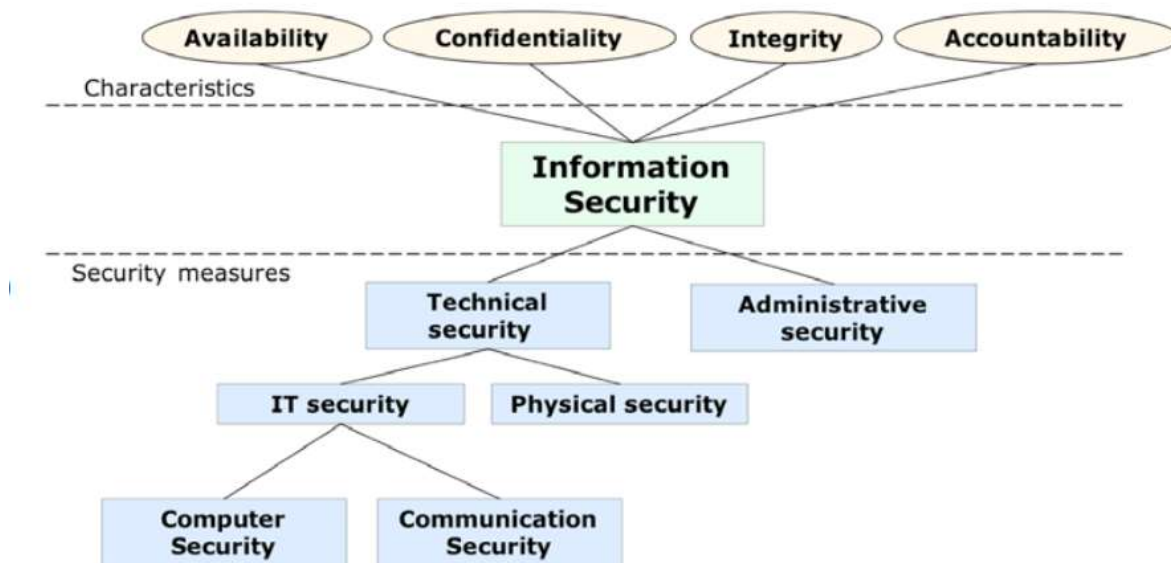


Figure 3. Mandatory Model of Information Security⁵

For systems with mandatory usage restrictions, the security check problem is algorithmically solvable. In addition, systems with a mandatory policy are characterized by a higher level of reliability than computer systems built on a discretionary security policy. The security mandate policy is algorithmically understandable to developers and users. However, the implementation of these types of security policy systems is quite complex and requires significant computer system resources.

Conclusion.

In conclusion, before developing a software project for a website, it is very convenient to first use a Gantt chart to develop it.

Python Django framework and PostgreSQL database are used to build the Writers Alley website.

Data security, and in particular the protection of data from unauthorized access, remains an important goal of any data management system, and the various algorithms mentioned in this article are used to securely transfer data over the Internet. Because it is very important to follow all the above methods to securely transfer the data available in the web database.

All of the above opportunities can be realized only when developing and promoting the "Writers' Alley" site.

It will also be possible to combine the sites of the Tashkent Museum and the Writers' Union, operating on the Writers' Alley, as well as sites dedicated to the life of famous writers and poets by universities, into a single portal of the Writers' Alley. Writers.

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⁵https://www.researchgate.net/figure/Information-Security-Model-InfoSec-model_fig29_234059254

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