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Using Infographics In Teaching The Django Web Framework.

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Abstract: The article is devoted to the study of the potential of infographics as an effective learning tool for the Django web framework. It analyzes the relevance of the use of infographics in IT education, examines the advantages of visual representation of complex Django concepts, and describes the principles of creating infographic materials for educational purposes. The article concludes that infographics are an effective tool for better assimilation of material and increasing motivation to study the Django web framework. The article also offers practical recommendations for creating infographics for teaching web development.

Keywords: infographics, Django, web framework, IT education, training, visualization, efficiency.

Introduction

With the rapid development of digital technologies and the growth of online business, the demand for web development specialists is increasing dramatically. Django is a powerful web framework written in Python that helps developers create web applications quickly and efficiently. It provides a set of tools and libraries that simplify the creation of complex web projects. [1]

Despite the popularity and high demand for Django, learning this framework presents great difficulties for students. The complexity of the framework, the need for fundamental knowledge in the field of web development, the abundance of diverse information and the lack of practical and didactic material - all this creates obstacles for beginners. As a result, many students and freelancers face difficulties in mastering Django, which negatively affects their professional growth.

The preparation of high-quality and effective didactic material remains an urgent problem in teaching the framework. Existing textbooks and courses often do not take into account the different levels of students' training, do not offer sufficient practical tasks and do not use visual methods to describe complex concepts. As a result, the django learning process becomes complex and inefficient, which reduces the quality of training for future web developers.

Methods

Scientific research on teaching web technologies was carried out by such scientists as A.X.Tikhinov[2], M.M.Nigmatullaev[3]; scientific articles by GosudaryevI.B. Gosudaryev[4],N.B. Parshukova [5], Yu. Yu. Tatarinova [6] were published.

There are traditional, project-based, online learning, gaming and hybrid approaches to teaching web technologies in general. All approaches focus on didactic provision. Because didactic software plays an important role in effective teaching of web technologies, providing students with the materials and tools necessary for successful acquisition of knowledge and skills. The didactic material provides a systematic presentation of the theoretical foundations of web technologies, which allows students to create a clear and logical knowledge structure. This is especially important in the field of dynamic web development, where new technologies and tools are constantly emerging. The didactic material should give students the opportunity to apply theoretical knowledge in practice. This can be achieved through practical assignments, projects, and code examples. They should help students develop the practical skills needed to work with web technologies. This includes learning how to work with the development environment, version control systems, testing tools, and other necessary tools. Didactic provision should be interesting and motivating for students. This can be achieved through interactive materials, visualizations, infographics, game elements and other innovative approaches.

Results

The development of didactic materials based on infographics for Django training is a promising approach that can significantly improve the effectiveness of training.

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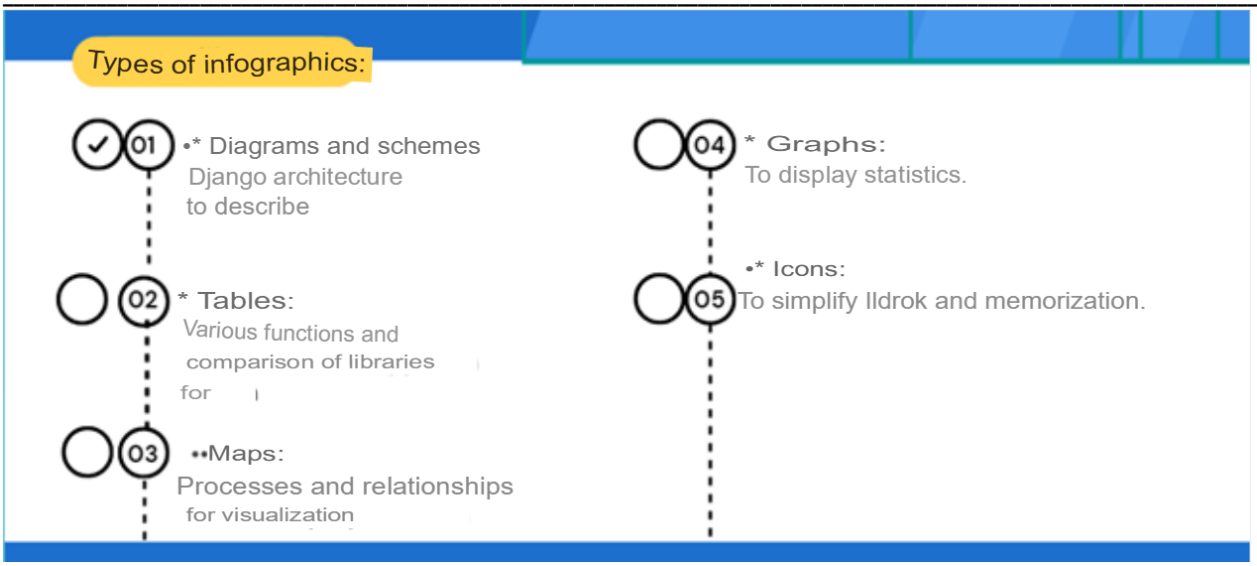

Figure 1. Types of infographics and scope of application.

The following are popular programs for creating infographics:

Table 1. Applications for creating infographics.

№	Name	Advantage	Disadvantage
1	Canva	Available in online version and mobile application. Offers a variety of templates, design elements, and tools for creating infographics. Easy to use even for beginners.	Functionality is limited to the free version; more professional designs require a paid subscription.
2	Visme	Provides a wide range of options for creating dynamic infographics with animation and interaction. Google drive, Integrates with other services such as Dropbox.	The interface can be difficult for beginners. The free version has limited features.
3	Piktochart	It is easy to use and offers many templates and design elements. Ability to create interactive infographics.	The free version has limited features. Not all templates are available in the free version.
4	Adobe Illustrator	A professional vector editor with extensive infographic creation capabilities.	A complex interface that takes a lot of time and effort to master. A paid software product.
5	Infogram	The simple and intuitive interface offers a variety of templates and tools for creating dynamic and interactive infographics.	The free version has limited features.

The principles of creating infographics are the key to creating effective and understandable learning materials. At the same time, attention should be paid to:

1. Clarity and conciseness: infographics should be primarily visual. It is necessary to use a minimum of text, focusing on the basic concepts and ideas. You should use simple and understandable language, avoid jargon and complex terms. Infographics should be logically structured and consistent so that students can easily perceive information.
2. Compliance with learning goals and objectives: Infographics should be aimed at achieving specific learning goals. It should correspond to the curriculum and correspond to the level of training of students.

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3. Interactivity and usability: Interactive elements such as comments, tips, links to additional resources should be used in infographics. This allows students to study the material independently and deepen their knowledge. It is advisable to create adaptive infographics, which will vary depending on the level of training of students.

4. Beautiful design and compliance with modern trends: infographics should be visually attractive and interesting for students. To create stylish and unique infographics, it is advisable to use modern design and technology trends. For them, it is necessary to use color combinations (for example, the use of contrasting colors and fonts) if there are visually impaired people in the group.

5. Verification and testing: in order to get feedback and make the necessary changes, it is necessary to test the infographic on the target audience. It is necessary to analyze the test results and make sure that the infographics meet the stated learning goals.

Below is an infographic with instructions for printing text on a web page in the Django framework. At the same time, the student may forget the intermediate steps as a result of performing many actions. This infographic will help the student to complete the task independently.

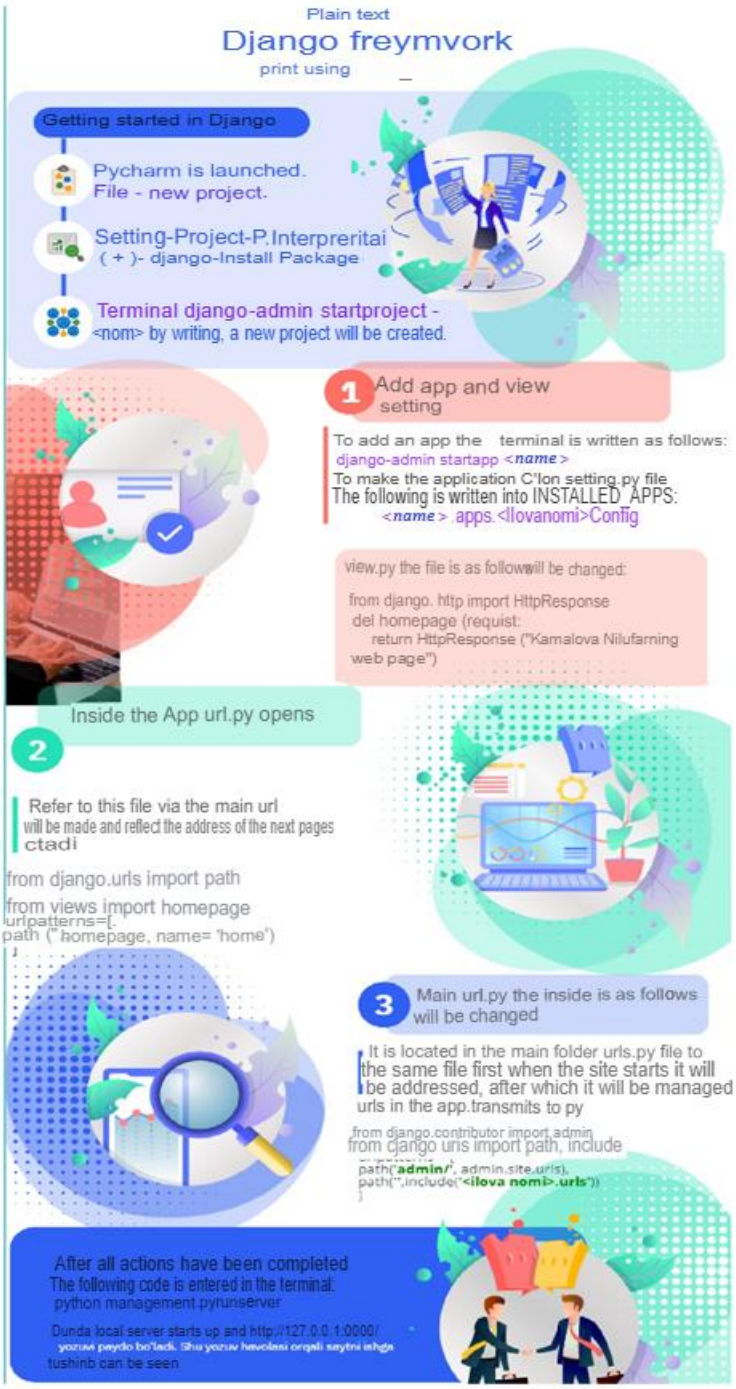

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Figure 2. An example of an infographic

Discussion

Using infographics in Django learning is an effective approach, but it is important to consider the following in order to make it as useful as possible for students.

1. Choosing the right type of infographic
2. Compliance with accuracy and compactness
3. Ensuring compliance with learning objectives
4. Make infographics interactive
5.Based on modern design

, infographics are considered another learning tool, and should only be used as an additional tool to complement existing methods.

When using infographics in educational classes, it is necessary to clearly identify the teacher's goal: to write a summary, show a portfolio, increase motivation, etc. of course, infographics must be coordinated with the content of the educational material: it should not be carried away in large quantities, this will lead to a loss of students' attention and prevent the assimilation of the basic material. Today, it is undeniable that the quality of students' knowledge can be improved, taking into account the didactic features of the use of educational infographics in the educational process [6].

D. M. Blinov believes that the use of infographics in the educational process expands the possibilities of implementing the principles of didactics [7].

Conclusion

The visual representation of information in the form of infographics will help you better understand and remember complex Django concepts. Infographics allow students to observe the structure of the project, the interaction of components and the dynamics of the process, which makes the information more accurate and understandable. The attractive visual style and interactivity of the infographic help to increase students' interest in learning Django, making the learning process more exciting and motivating. The visual representation of information in the form of infographics allows students to learn the material faster and memorize Basic Concepts more effectively. Thus, infographics are a valuable tool in teaching the django web framework, helping to better assimilate the material and increase student motivation.

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