- Кілька інтересних фактів, що вимовляються при натисканні на спеціальну кнопку.
- Кілька провокацій, що вимовляються при натисканні на іншу спеціальну кнопку.
- Ліхтарик, яскравість якого регулюється.
- Час від часу пістолет самостійно вимовляє деякі фрази, в тому числі може зробити хибний постріл.

Наукова новизна полягає у розробці методики впровадження у освітній процес проектної діяльності як засобу зацікавленості здобувачів вищої освіти в оволодінні навичками 3D моделювання та створенні реальних працюючих моделей та прототипів з використанням сучасного інструментарію.

Висновки. Дана методика допомагає ефективно формувати компетентності фахівця з прототипування та створення діючих моделей з використанням технологій 3D-моделювання, друку та інструментарію Arduino.

ПЕРЕЛІК ПОСИЛАНЬ

1. The Internet of Things: Mapping the Value Beyond the Hype. (2015, Червень). Офіційний сайт McKinsey Global Institute. http://www.mckinsey.com/insights/business_technology/the_internet_of_things_the_value_of_digitizing_the_physical_world $3.9 trillion–11.1 trillion per year in 2025

2. Комітет ІнАУ з питань Інтернету речей визначив конкретні кроки з популяризації і розвитку в Україні цього ринку. https://inau.ua/news/komitet-inau-z-pytan-internetu-rechey-vyznachyv-konkretni-kroky-z-populyaryzaciyi-i-rozvytku-v

3. Arduino (official site). https://www.arduino.cc/

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FRAMING AS A REJECTED WEB CONCEPT

Annotation. The theses describe the issues why such a concept as framing became rejected by the web community nowadays. The points make it clear what kind of problems the frames are creating, not only for a single website but also for the entire Internet.

Keywords: *framing, Internet, web page, web community, copyrights, URL, HTML.*

Introduction. In the modern world, every web developer is faced with many concepts in the process of choosing how to build a website. One of the directions with which he can dock is framing. Framing is a strategy of introduction in a web

page that breaks the screen up into numerous non-overlapping windows. Using frames makes it simple to form HTML pages in which one or more pieces of the page remain static, such as a navigation bar, while other frames continually change their content.

The history of frames begins in March 1996. Netscape Navigator, a popular web browser at that time, introduced a new concept of building sites based on frames, to the web community. The new strategy quickly began to pick up interest from other browsers. Based on this, by the decision of the World Wide Web Consortium, framing was officially added to the new version of HTML 3.2.

After adding new functionality, the innovation became growing in popularity and started to be used on many sites, especially for online magazines sites, mail portals, the first online shops, and similar web resources.

The main content of the work. After several years of using framing, many problems have accumulated with sites built on frames, which has led to an active process of abandoning this technology by developers, web companies, and entire browsers. So the use of frames began to be considered ineffective and unsuitable for websites. Therefore the strategy of framing has been eliminated from the HTML5 standard.

Further, let`s look at the main issues that frames carry:

1. Inability to reach parts of the site by the address

Each page on the Internet has its unique identifier – URL (Uniform Resource Locator) or, more simply, a web address. This feature allows us to get to the right page on the Internet area. But sites built on frames distort the ability to use the address because they cannot save the state of a site opened in a separate frame. The reason for it is the fact that the entire site is reached through an address of the HTML page with a common frameset that doesn`t have a connection to the content from their frames. So has no way to reach the domain of the site opened in its frame and to maintain the state of this page.

Every Internet user can easily verify this problem by bookmarking a website based on frames. Using this created bookmark, he will be taken to the page with the initial state of the site, but not the condition that he saved.

This problem also leads to the failure of work with informational retrieval. Since a site with frames is reached by connecting with frameset`s page, search systems do not have access to the context located in the frames.

Search engines don`t have the opportunity to reproduce framesets from personal pages. As a result, these systems often do the numbering individual frames independently, which forced customers to come to a broken site and incomplete data.

2. Copyright infringement

Another problem with framing is copyright infringement. This point is not often included in the list of frames' drawbacks as it is still considered controversial.

By using framing on web pages, a developer can place in the frame content that comes from a copyrighted site. Supporters of Internet piracy can use such functionality for illegal purposes.

This point causes great discontent from owners of protected content because they don`t allow using their certain intellectual property. However, framing does not

directly reproduce or distribute any copy of the original web page. Therefore, litigation in such a situation is a very long and controversial process.

Nevertheless, one thing that is definitely important to note is that is an important issue for the web community in forming opinions about frames.

3. Distortion of analytics accuracy

We all know that our activity on the Internet is tracked by browsers and individual sites and collected for analytics. Nonetheless, on framing websites analytical processes are disrupted and may not work correctly. The reason for this is the problem listed early – incorrect addressing of frames' pages.

In the event that a site's frames are on different domains, the conversion data is likely to be inaccurate because the system will treat the previous frame as the referral source for the following one. This is due to the hierarchical structure of frames that are enrolled as referral sources for each other.

Also, since the user navigates through pages of the website that is in the frame, he remains on the frameset's page with the main address, therefore the page views increase both for the main site and for the site in the frame. Accordingly, the analytics will show a part more page views than happened in reality.

4. Non-adaptability on different devices

Nowadays, we actively use web resources not only with the help of personal computers but also with the help of tablets, netbooks, smartphones, etc. They all have screens of different sizes and extensions. For this reason, modern sites adhere to the principles of adaptability in order to be displayed correctly on all devices.

However, web pages built with the help of framing can create size responsiveness issues. In case the screen determination or browser window measure is not enough substantial at that point each frame will have scroll bars which can be untidy and uses up restricted space.

This problem breaks the structure of the site, which leads to the fact that the user cannot properly use the web resource for his own purposes.

5. Other problems

There is also framing carries a wide variety of minor but important issues, including the long-standing problem with printing frames pages, the inoperability of the "back" button, a large number of HTTP requests to the server, reducing the amount of usable space on the page, and others.

Conclusion. It should be said that the reasons for refusing to frame are weighty since they have a number of consequences not only for a particular site but also for the Internet space in general. However, one should be aware of such a concept for general knowledge of web technologies and the history of the webspace. Also, this example can teach us what mistakes should not be repeated when building our web resource.

REFERENCES

1. Wikipedia: Frame (World Wide Web). URL: https://en.wikipedia.org/wiki/Frame_(World_Wide_Web)

2. TechRepublic: Avoid frame-based layouts in favor of alternative designs. URL: https://www.techrepublic.com/article/avoid-frame-based-layouts-in-favor-of-alternative-designs/

3. Microsoft Docs: Accessing Frames in the Managed HTML Document Object Model. URL: https://docs.microsoft.com/en-us/dotnet/desktop/winforms/controls/accessing-frames-in-the-managed-html-document-object-model?view=netframeworkdesktop-4.8

4. Analytics Help: Framed sites. URL: https://support.google.com/analytics/answer/1012049?hl=en#zippy=%2C%D1%81%D0%BE%D0%B4%D0%B5%D1%80%D0%B6%D0%B0%D0%BD%D0%B8%D0%B5%2Cin-this-article

5. Wikipedia: Copyright aspects of hyperlinking and framing. URL: https://en.wikipedia.org/wiki/Copyright_aspects_of_hyperlinking_and_framing

6. Dev: HTML postmortem: frameset and its legacy. URL: https://dev.to/grafton-studio/html-postmortem-frameset-and-its-legacy-5h83