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Adapting Web Content Using Internet Speed for Mobile Devices

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Abstract— Mobile devices for example PDAs and cell phones have been increasingly used for internet , it requires all web content to be develop in a formalized way. Web content used HTML format, but that format is not suitable for mobile devices. To transform HTML based content efficiently and effectively in mobile suitable format automatically is a big challenge. The existing system gives an optimal solution by regenerating HTML pages. It is impractical to regenerate all these HTML pages. Adapting web content is use to shrink the web content in mobile suitable format based on user connection speed. The proposed solution may speed up to download the pages within minimum time as well as preserves overall page quality to have inconsistent quality by preventing web page items.

Keywords—Web content Adaption, User connection Speed, Page Size, handheld devices

I. INTRODUCTION

Now a days, use of internet increases tremendiously such as to view online courses student use it. Before delivering to different devices, some content publishing tools provide content adaption which transfer web pages into proper format. Mobile devices have slower network connections, smaller screens, and less computing power. To view and read easy on mobile devices we need to develop adaptable content[1]. Content adaptation techniques are developed to effectively adapt the web content and improve the performance of the websites. We developed a technique that adapts the web content based on user connection speed , since the user connection is one of the key factor that affects the performance of websites. We also designed a reusable software component and a folder structure that can effectively handle the act of updating the information of different for web content items. In this paper we will focus on web content adaptation technique as well as we detect the user connection speed. We have used the user connection speed detection technique. Content adaptation refers the technique of dynamically adjusting content presentation to meet the constraints of different receiving devices for better presentation[2].Our approach is to providing web content to support various types of receiving devices is to prepare the same content in different formats.

II. RELATED WORK

A. Adaptation of web content for mobile devices

The conventional approach to adapting web content for mobile devices is to provide specific formats of the same content for corresponding mobile devices content providers have to prepare formats and different layouts for the same web content, which results in tremendous overhead and any change in the content may result in consequent changes in every related format. It is highly inflexible and may easily cause inconsistency. Direct content delivery without layout layouts adjustment often leads to the disorganization of information previously mentioned. Also requires users to constantly move scroll bars vertically and horizontally before they can perceive a complete piece of information[1].

B. Related content Adaptation Methods

Many researchers have focused on content decomposition methods, they proposed a block –based content decomposition methods to quantify content representation. An HTML page is factorized into blocks, each and every block is assigned a score denoting its significance. After that DRESS select the block with the to represent the content with highest score. This method prevents the loss of significant information. According to the region of interest, it enables content layout to be adjustable, attention value, and minimum perceptible size[3]. Ramaswamy and others proposed an efficient fragment generation and caching method based on the detection of three features: shared behavior, lifetime, an personalization characteristic. The smallest adjustable element in these two approaches is a composite of objects for example text, image, audio, and video. This granularity of decomposition is too large for mobile devices screens.

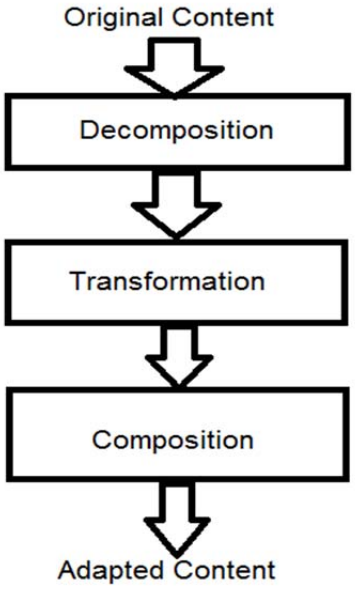

Fig 1. Three phases of content adaptation

Content adaptation contained three phases: decomposition , transformation and composition. This procedure is illustrated in fig 1. In decomposition phase, the original web page is structurally parsed into component based on a predefined content model. Both the layout and constituent element such as text, images, audio, and video are extracted separately in that phase. In the transformation phase, transcoding approaches are used to change the fidelity and modality of the extracted component for better representation on target devices. In the composition phase, the presentation styles and the adapted components are reorganized and recomposed into the final contents to be delivered to the end users.

III. PROPOSED WORK

In proposed system, We detected the user connection speed. After that web page constraint is calculated using detected user connection speed. The web page constraint is the maximum size that the web page can have so that it could be downloaded. Once all the web content items that construct the web page are identified, the best possible version for each web content item could be selected in a software component called Adapter. This process is done using the information about different versions of the web content items[4]. This process is automatically done using another software component called scanner, which scans a folder structure that is defined to accommodate different versions of the web content items in the hard disk. Finally, the web page can be rendered and delivered using the selected versions of the web content items. The system architecture depict in Fig. 2.

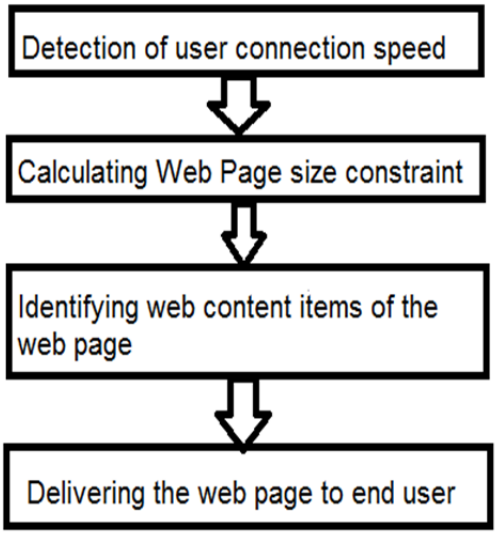

Fig. 2: System Architecture

A. Detection of user connection speed

The system detect user connection speed, if the user is connected then it calculate speed of our internet. We divided the speed into two parts such as one is 3G speed and other is edge speed if connection speed is 3G then more content can be seen we just have to shrink the web content[4]. When the detection speed is edge then we adapt the content such as images, audio, video since we try we display maximum content. So, that we can read more content in less time.

B. Web content adaptation

A Web page contains a set of media objects that carry encapsulated meanings. The semantics among presentation components have to deliver correct information that have maintained. When some content is adapted which displayed on different devices, the semantics of the adapted content should remain the same as in the original content of the decomposition portions. In content structure model, Web content is organized in three layers, namely, a structure layer, a fidelity layer, and a modality layer. The structural layer comprises the objects contained in the content. For each object, the modality layer comprises possible presentation types. For each presentation type the fidelity layer further specifies possible presentation formats. For example, object OC6, may be presented in four presentation types: video, audio, text, and image. Audio presentation type provided in three formats: mp3, wmv, and midi.

IV. CONCLUSION

The content adaptation enhances Web content analysis and adaptation on the mobile Internet. Specifically, content adaptation technique used to improve mobile internet navigation . Without updating any previous web content designed, our solution moves one step further to adapt the web content according to internet speed. we are exploring how to add the capability of processing script languages to our content adaptation mechanism. It prepare a content page to desktop computers in HTML oriented and it can be presented onto various devices with the help of our underlying content adaptation technique. Using internet speed calculation we can adapt more content within minimum time.

V. RESULT

In our proposed system, we adapt the content suitable to our handheld devices according to internet speed. If our internet connection is 3G then all contents are visible to us. But if our internet speed is very slow then also we are able to read maximum content. We can arrange them according to display size of our handheld device.

VI. FUTURE SCOPE

1. Examine and compare the processing delay caused by individual steps of our content adaptation to improve performance.
2. Secure the sever from overloading.

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