

Implementation of Online Image Editor

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Abstract: - Online image Editing is an intense process that involves various operations such as color correction by using different color enhancement methods like contrast enhancing, image negative etc, Image resizing by changing style elements (Height and width) of an image, Image cropping by use of non-rectangular mat. or picture frame for selection of portions, Image flipping by flipping an image at horizontal or vertical axis and Image blurring by Gaussian Algorithm. It's obvious that these are all a part of creative methods that can simply make your images outstanding, hence this are very advantageous for customers from different industries and sectors to share single environment of editing images. With these services customers can separate objects from their background by selection tool, correct colors and adjust tone in images, insert extra photographs or graphics in the image, remove unwanted elements from your images by cropping, change the color of all the sections of an image.

Keywords: - Image Editor, Image Processing, Contrast Enhancement, Image cropping, Image Blurring, Image Flipping

I. INTRODUCTION

Online Image Editor is the convenient browser-based software for online image editing. Online Image Editor (OIE) provides an easy-to-use user interface which allows you to quickly and painlessly create or edit images, photos or graphics. Online Image Editor dramatically reduces the time and development efforts required to customize your graphical content, saving your time and money.

The huge advantage of Online Image Editor is that, unlike other available tools, the actual digital image processing takes place on the client computer before uploading it to the server. Intuitive and easy-to-use, Online Image Editor lets you edit images online faster, while limiting the use of valuable bandwidth.

OIE is loaded via a webpage. The user can open an image from the local PC and start editing directly. Unlike other available tools all processing takes place on the user's PC before uploading it to the server. OIE speeds up the editing process and limits the use of bandwidth.

When editing is finished the file can be saved locally before uploading it to the server. The user can select the file type, set parameters and the file is saved. Only then the edited file is sent to the server.

II. PRESENT THEORY AND PRACTICES

Presently there are various desktop applications available for image editing such as Adobe Photoshop, Gimp, MS Paint and many other.

There are some online sites also which provide features to edit images such as pixlr.com, imageeditor.net, fotoflexer.com. These sites are mostly using traditional Adobe Flash technology.

III. RELEVENCE OF WORK

In this project we are going to implement various algorithm used for image processing with the help of revolutionary and very new technology called Silverlight.

We are going to implement following operation in this project:

- Image resizing
- Image cropping
- Saving image in different formats
- Various Brushes, pencil, eraser, paint bucket and many other general tools.

IV. WORKING

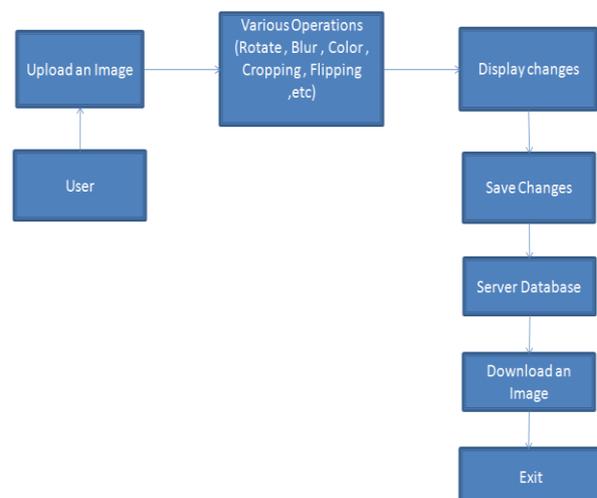


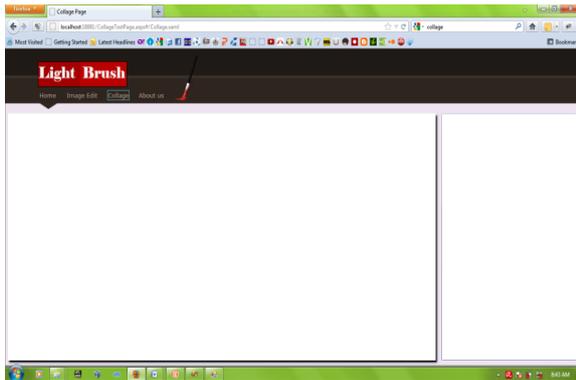
Fig.1 Block diagram of Online Image Editor

- System get initialized when user will upload image using upload link.
- Once the image is uploaded, various image processing operations like cropping, resizing, rotating etc can be performed on image.
- These changes get displayed on image simultaneously, if the user wants to undo the changes, user can click the undo link or if the user wants to save image then by clicking save link picture get saved to server database.
- This can be downloaded using download link. Now if the user wants to edit more image then again by uploading link system can be used to edit more images.
- User can exit by clicking exit button on browser or by entering any other url in url space provided in web browser.

Background

Background can be of two forms, first it can be of solid color and second it can be an image. To form a background of solid color set the background of canvas to that color. User can choose color from a color tray provided.

1. On click event of mouse, read the pixel color at mouse coordinate and store it into a variable say custom_color.
2. Set the background color of canvas equal to custom_color



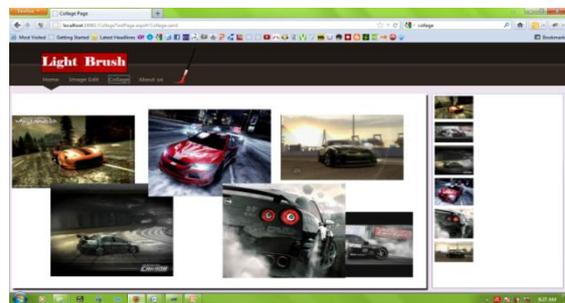
To form background of an image, provide all images to the user in a grid. Background changes after selecting any image from the grid.

1. Scale the selected image to the size of the canvas.
2. set the Z-index of image to 0, so that it remains at the bottom of all images.
3. Check Z-index of all other images, if Z-index equals to 0 then increment it by 1.

Images

Images need to be rotated and scaled as per user requirement. User has options that can be performed using mouse cursor like scaling, rotating, fading (changing opacity) or moving the image on canvas.

1. Capture the mouse on clicking any image on the canvas.
2. If the mouse cursor is on the image, change the cursor icon to cursor_move (any new icon, set its name to cursor_move)
3. If the difference between the cursor coordinates x and y is in the range +100 and -100 then change the cursor icon to cursor_scale (another new icon with name cursor_move).
4. If the cursor coordinates are outside the image boundary and inside the canvas boundary then change the cursor icon to cursor_rotate (another new icon with name cursor_rotate).
5. Now in the cursor move event of the image, check following conditions:
 - 5.1 If the cursor icon equal to cursor_move then set the coordinates of the image equal to mouse cursor coordinates.
 - 5.2 If the cursor icon equal to cursor_scale then set image.Height = mouse.Y - image.Y and image.width = mouse.X - image.X.
 - 5.3 If the cursor icon equal to cursor_rotate then rotate the image by angle Q, where $Q = \sin^{-1}((\text{mouse.Y} - \text{image.X} + \text{image.Height}/2) / \sqrt{((\text{mouse.X} - \text{image.X} + \text{image.Width}/2)^2 + (\text{mouse.Y} - \text{image.Y} + \text{image.Height}/2)^2})$.
6. On mouse wheel event set the opacity of the image. ([8] Silverlight uses ARGB color model where A represent alpha or simply opacity). Set $A = \text{wheel.value} \bmod 255$ (as A can be in the range 0 to 255).
7. To bring any image on top set its Z-index to max or to set any image to bottom set its Z-index to 1 (as 0 is reserved for background image).



V.DESIGN & IMPLEMENTATION CONSTRAINTS

A. Microsoft® Silverlight™ 4 SDK

Microsoft Silverlight is an application framework for writing and running rich internet applications, with features and purposes similar to those of Adobe Flash. The run-time environment for

Silverlight is available as a plug-in for most web browsers running under MS Windows. While early versions of Silverlight focused on streaming media, current versions support multimedia, graphics and animation, and give developers support for CLI languages and development tools. Silverlight is also one of the two application development platforms for Windows Phone 7.

By mid 2011 Microsoft will have released 5 versions over the course of 4 years: the first version was released in 2007; the current version, 4, was released in April 2010 and the 5th version is scheduled for release in the second half of 2011. It is compatible with multiple web browsers used on Microsoft Windows and Mac OS X operating systems. Mobile devices, starting with Windows Phone 7 and Symbian (Series 60) phones, were expected to be supported in 2010.

A free software implementation named Moonlight, developed by Novell in cooperation with Microsoft, is available to bring Silverlight versions 1 and 2 functionality to Linux, FreeBSD and other open source platforms - although some Linux distributions do not include it, citing redistribution and patent concerns [5].

B. ASP.NET (version – 4.0)

ASP.NET is a Web application framework developed and marketed by Microsoft to allow programmers to build dynamic Web sites, Web applications and Web services. It was first released in January 2002 with version 1.0 of the .NET Framework, and is the successor to Microsoft's Active Server Pages (ASP) technology. ASP.NET is built on the Common Language Runtime (CLR), allowing programmers to write ASP.NET code using any supported .NET language [6].

C. Microsoft Visual studio 2010

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop console and graphical user interface applications along with Windows Forms applications, web sites, web applications, and web services in both native code together with managed code for all platforms supported by Microsoft Windows, Windows Mobile, Windows CE, .NET Framework, .NET Compact Framework and Microsoft Silverlight [7].

VI. FEATURES

- The Online Image Editor will provide an interactive GUI [9], on www for the general user.
- The Online Image Editor system will provide the facility of upload and download image as well as to edit an uploaded image and download edited image.
- The Online Image Editor system also provide the Editing techniques such as, image flip & rotate [2], image resizing [4], image enhancement, etc.

The Online Image Editor will also provide an easy to use, simple accessible interface which can be accessed by the user through the internet from anywhere.

VII.RESULT

There will be four modules; first module is a brief overview of the whole project. This will demonstrate features and results of the project. Second module is a image editor which will help the user to edit images in terms of rotation angle, dimension, color tones [1]. Third module is a collage making tool. This takes multiple images as input and arranges them in different layouts as the user wishes to. And finally last module is for saving the resulted image. This will save image in different image format as per the user choice [3].

VIII.CONCLUSION:

Online image editor will provide worldwide online user, an ability to edit image in simple web browser. Hence online image editor is more useful then desktop image editor.

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