

Technical Documentation

Buttons and Panels

1. Radio Button : It takes the input from user as the form in which he/she wants to see the gallery.

It gives 3 options: Thumbnail, Slide show and List .

2. Get Images : This gives the program command to run according to the given inputs by the user.

3. Previous : This loads the previous page of the Thumbnail view.

4. Next : This loads the next page of Thumbnail view.

5. Back : This exits the program from full screen mode and transfers into Thumbnail mode.

6. Address Bar : It takes text input from user as location for the directory to be explored for images.

7. Browse : This assists user to select a directory from computer without erring.

8. ImageListBox : this loads the name of all the images in the directory when user clicks get Images in List mode.

9. ImagePictureBox : This loads the image when the user clicks any name from list view, or when user chooses Thumbnail or Slide show mode.

10. Gray: This button displays the gray scale image of the original one

11. Sepia: This button displays the Sepia filter

12. Negative: This button displays the Negative of the image.

13. Edge: This button shows the edged of the image produced by Sobel edge detection algorithm

14. XRay: This button displays the XRay of the Original image.

Global Variables

1. `directoryName` : A string to store address of directory given by input of user.
2. `cur_slideshow_images` : Stores the index of image currently being displayed in the `ImagePictureBox` during slideshow.
3. `files()` : A string array to store the names of all the images in the directory.
4. `page` : An integer to store the page number displayed in the Thumbnail view.
5. `oldsize` : A Size variable to store the size of `newPic` in Thumbnail view.
6. `oldlocation` : A point variable to store the original location of `newPic` in Thumbnail view.
7. `rowImage` : An integer to store the row number of image in Thumbnail view.
8. `collImage` : An integer to store the column number of image in Thumbnail view.
9. `no_images` : An integer to ensure the given directory does have at least one image file.
10. `globalimage` : An image which stores the list attribute selected at current time so that filters are applied to original image rather than image filtered by previous filter.

Functions

1. `GetImage_Click` : It initializes all the variables, buttons and panels in the form desired. It then reads all the names of files in the given directory and writes them into `all_files()`. It then reads all the files in `all_files()` and write only image files in `files()`. A subsequent function is called depending on the choice of user in radio button.
2. `start_slideshow` : This function is called when the user chooses the slideshow version of the gallery. It adds first image to `ImagePictureBox` and then updates it every second.

3. `populate_list` : This function is called when the user chooses the list version of gallery. It fills the name of all the files in `files()` into `ImageListBox`.
4. `populate_thumbnails` : This function is called when the user chooses thumbnail version of gallery. It chooses exactly 9 images from `files()` and passes them to `addImage()` function.
5. `addImage` : This function takes complete address of a file via input. It creates new picturebox, adds image of file to it. It sticks this over `ImagePictureBox` row-wise.
6. `RemoveThumbnails()` : It removes all of 9 `newPic` pictureboxes and leaves `ImagePictureBox` blank.
7. `Form1_Load` : This is implemented as soon as program is run. It initializes variables, panels and buttons as required.
8. `ImageListBox_SelectedIndexChanged` : When a name is chosen in the `ImageListBox`, this function is called and it fills that particular image in the `ImagePictureBox`.
9. `BrowserButton_click` : This is initialized when the browser button near address bar is clicked. It assists the user to select the directory without an error.
10. `BackButton_Click` : This function is called when back button is clicked. It exits the full screen mode and brings back to Thumbnail view.
11. `NextButton_Click` : This function is called when next button is clicked. It loads next 9 images on `files()`.

12. Previous_Click : This function is called when previous button is clicked. It loads previous 9 images on files().

13. newPic_click : This is called when user clicks any particular image in Thumbnail mode. It removes all the Thumbnails and fills the ImagePictureBox with the image chosen.

14. newPic_MouseLeave : It restores the image to original size and location when the mouse is not hovering on it.

newPic_MouseEnter : It enlarges image a little and aligns it when mouse is hovered over it in Thumbnail mode.

15. Timer1_Tick : This function updates the image every second in slideshow mode.

16. Img_filters : This function loads the images in list form and displays different filters available.

17. bSepia_Click: This function alters the RGB values of each pixels in a certain way to produce Sepia filter.

18. bNegative_Click: This function produces the negative image of the original image.

19. bEdge_Click: This function produces the Edges of the original image by convolution of the image with a 3 by 3 matrix.

20. bXRay_Click: This function gives the xray of the original image,

Bugs

- Out of Memory Error : When loading images weighing more than 300 MB, the program runs out of memory.