

“A Novel Creative Photo grid Android mobile Application for Photo Editing”

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Abstract: This paper presents the Android mobile phone application developed in order to extended available photo grid application and we are more concerned about the advancements made in technology. Once such important advancement in Android mobile phone application is Creative Photo grid. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. The issue that we address is that quick response policies to prevent waiting time and mean while aim to provide improved layout performance. In proposed Creative photo grid application we are providing both static and dynamic photo frame option which implemented using object oriented concept. By using static photo frame, the user is able to select the frames provided, which gives an idea about how to create dynamic frames. In dynamic photo frame option user is free to customize photo for required format style and also the experimental survey shows that our techniques are very efficient. This creates a new trend in photo editing.

Keywords: Photo grid, Android, mobile, Creative, Editing, PIP (Pic-in-Pic) camera.

1. INTRODUCTION

The rapid growth of smartphones has lead to a renaissance for mobile services. Go-anywhere applications support a wide array of social, financial, and enterprise services for any user with a cellular data plan. Application markets such as Apple's App Store and Google's Android Market provide point and click access to hundreds of thousands of paid and free applications [1]. Markets streamline software marketing, installation, and update—therein creating low barriers to bring applications to market, and even lower barriers for users to obtain and use them.

Photo grid is photo collage tool that will help you combine several images from a device into just one, even applying different styles and effects to create the perfect result. Here users have to choose the right framework for the photos, keeping in mind the number of images that you want to put together. There is no choice for the user to express their creativity and talent.

2. LITERATURE SURVEY

Android: Android is an OS designed for smartphones. Android provides a sandboxed application execution environment. A customized embedded Linux system interacts with the phone hardware and an off-processor cellular radio. The Binder middleware and application API runs on top of Linux. To simplify, an application's only interface to the phone is through these APIs. Each application is executed within a Dalvik Virtual Machine (DVM) running under a unique UNIX uid. The phone comes pre-installed with a selection of system applications, e.g., phone dialer, address book.

Today several photo grid apps have been released reflect the interest of the present generation towards photo editing. Below are some of photo grid apps that are being most used by the users of android phones:

2.1 Activities

An activity represents a single screen with a user interface. For example, an email application might have one activity that shows a list of new emails, another activity to compose an email, and another activity for reading emails. If an application has more than one activity[3][6], then one of them should be marked as the activity that is presented when the application is launched.

The Activity class defines the following callbacks i.e. events. You don't need to implement all the callbacks methods. However, it's important that you understand each one and implement those that ensure your app behaves the way users expect.

2.2 Services

A service is a component that runs in the background to perform long-running operations without needing to interact with the user. For example, a service might play music in the background while the user is in a different application, or it might fetch data over the network without blocking user interaction with an activity.

A service has lifecycle callback methods that you can implement to monitor changes in the service's state and you can perform work at the appropriate stage. The following diagram on the left shows the lifecycle when the service is created with startService() and the diagram on

the right shows the lifecycle when the service is created with `bindService()`.

To create an service, you create a Java class that extends the Service base class or one of its existing subclasses. The Service base class defines various callback methods and the most important are given below. You don't need to implement all the callbacks methods.

2.3 Photo Grid

This amazing free android app lets you have more fun with your pictures in the pictures gallery. Photo Grid application lets you create your own photo story. All you need to do is select a grid, select few of your photographs and create a collage of your choice. Father's Day, Mother's Day, Lovers Frames by selecting special grid give a new and interesting touch to your old and new pictures with Photo Grid that can be arranged in grids and share with friends. There is also a feature of selecting normal grid.

Advantages:

- 1: Very easy to use and install.
- 2: Allows you to create grids.

Disadvantages:

- 1: A maximum of 7 photos can be selected.
- 2: When maximum images are selected frames are relatively very less
- 3: Images cannot be edited and videos cannot be created.
- 4: There is no way to create own framework to insert images.

2.4 Photo Collage

While Photo Collage started out as a handy app to create collages of your favorite photos, it now includes many more useful features and options that will help you make beautiful and creative images (and videos) in next to no time. It can be used to make collages and much more. In the grid option, there are a wide variety of editing possibilities for each individual photo, as well as for the grid as a whole. You can add different backgrounds, filters and borders, as well as draw shapes, and add stickers and text. Photo Grid also provides a number of template grids to help you get more creative with your collages.

Advantages:

- 1: Very easy to use and install.
- 2: Allows you to edit images and create videos.
- 3: Selfie Camera I available to take pictures.

Disadvantages:

- 1: A maximum of 15 photos can be selected.
- 2: There is no way to create own framework to insert images.

2.4 FotoRus

This is all-in-one photo editor, pic collage maker and photo grid with many amazing filters, layout and Frames for Instagram, including photo Collage, Sticker, amazing Filters, Professional Edit, selfie camera, PIP (Pic-in-Pic) Camera, Secret Album and Special Effects with layout and frames.

- 1: Collage: Classic and the most fashionable Photo Grid & Collage Maker. There are lots of layouts. Over 100+

Square, Portrait, Landscape, and Strips format and styles layout to suit all your artistic collage needs.

- 2: Sticker: Apply hundreds of stickers with funny, cute and girly themes. That make photo more expressive.
- 3: Pro Edit: Over a dozen powerful and photo editing functions such as Filter, Text, Tilt shift, Scenes, Adjust, Lighting, Light pen, and etc.
- 4: Beauty: Real-time selfie camera and take the perfect-looking selfie with rich selfie function that sets to further edit your selfie including: Remove blemishes, whiten skin, remove eye-bag, and many more.
- 5: PIP: The most creative and professional-studio selfie with one tap of a finger. Great for making your profile photos with PIP Camera.
- 6: Secret Album: Protects your secret photo from others by keeping a password using selfie camera.

Advantages:

- 1: Various filters and light effects.
- 2: The stretch and photo-in-photo features
- 3: Plenty of background images for collages

Disadvantages:

- 1: It comes with ads.
- 2: It doesn't connect to the camera to take pictures.
- 3: A maximum of 7 photos can be selected.
- 4: There is no way to create own framework to insert images.

3. PROPOSED SYSTEM

In the existing photo grid, the user can make use of only the static frames for the selected images. User can insert texts, stickers into it, but cannot create the frames of their interest. The proposed system Fig.1.i.e. in the creative photo grid, it has helped to overcome all these disadvantages and has helped the user to create their own frames. The advantage of the proposed system is that the users first selects the image and then make use of static frames or the dynamic frames [5].

A. Static Frames

Frames that are provided to the users by default which gives them the idea of how to create grid are static frames.

B. Dynamic Frames

Frames that can be created by users according to their interest are dynamic frames.

This special feature has helped the user to express their talent and creativity for the selected image.

- 1: Select application.
- 2: After getting started with the application the user can select image from:
 - Camera.
 - Gallery.
- 3: The image will be selected; the user will be able to see the selected image on the screen.
- 4: At this stage the user can make use of the frames according to the selected image by the static frames.
- 5: Otherwise, the user can make use of frames by the dynamic method i.e. by creating their own frames respective to the image selected.

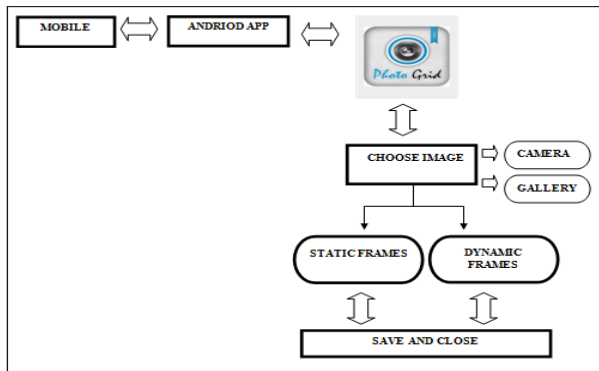


Fig.1 Architecture Diagram of Proposed Systems

- 6: Select application.
- 7: After getting started with the application the user can select image from:
 - Camera.
 - Gallery.
- 8: The image will be selected; the user will be able to see the selected image on the screen.
- 9: At this stage the user can make use of the frames according to the selected image by the static frames.
- 10: Otherwise, the user can make use of frames by the dynamic method i.e. by creating their own frames respective to the image selected.
- 11: After the above steps, now if the user is being satisfied by his/her choice then he/she can save the framed image.
- 12: Otherwise, the user is given another option to exit without saving.

There is a transparent crop box that may be dragged by its corners, or moved by left clicking and moving. The aspect ratio of the crop box is determined by the value in the combo box. The other combo box simply sets the width of the crop box, and the height is determined by the chosen aspect ratio. The crop box will snap to a proportional aspect ratio when re-sized and below is the code for cropimage and encoder.

```
private static Image CropImage(Image img, Rectangle cropArea)
{
    try {
        Bitmap bmpImage = new Bitmap(img);
        Bitmap bmpCrop = bmpImage.Clone(cropArea, bmpImage.PixelFormat);
        return (Image)(bmpCrop);
    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.Message, "CropImage()");
    }
    return null;
}

private ImageCodecInfo getEncoderInfo(string mimeType)
{

```

```
// Get image codecs for all image formats
ImageCodecInfo[] codecs = ImageCodecInfo.GetImageEncoders();

// Find the correct image codec
for (int i = 0; i < codecs.Length; i++)
    if (codecs[i].MimeType == mimeType)
        return codecs[i];

return null;
}

```

Photo grid is photo collage tool that will help you combine several images from a device into just one by applying different styles and effects to create the perfect result and output image size is based upon the visible crop rectangle and scaled to the ratio of actual image size to displayed image size it can be represented as below.

```
ScaledCropRect.Width = (int)((double)(CropRect.Width) / ZoomedRatio);
ScaledCropRect.Height = (int)((double)(CropRect.Height) / ZoomedRatio);

```

With photo grid you can create a collage in the form of grid or as a template with free style borders. today There are many photo editing apps which are available in smart phones .But these apps do not provides platform to express our creativity .In Existing system users have to choose the right framework for the photos, keeping in mind the number of images that you want to put together .here There is no choice for the user to express their creativity and talent. Photo collages are one of the most popular photo editing entertainments in fields like pc, mobiles, etc. The proposed system allows users to create own framework for the photos, keeping in mind the number of images that are to be together. Hence there is a chance for the user to express their creativity and talent.

The features of creative photo grid are:

- Grid with customizable patterns :
Users are provided with a feature to create customizable patterns i.e., users can create their own patterns to insert the selected images Fig.2.



Fig. 2.Example of Grid with Customizable Patterns

- PInboard:
 - 1: Pin moments to customized board. Pin board allows users to add photos, text to a customized background.
 - 2: Pin board enables users to make any picture as their background which varies from one user to another user as it is a matter of individual interests. For instance, the sceneries, cartoons, etc.

4. APPLICATIONS

Following are the applications of creative photo grid:

- 1: As picture collage maker to create photo collages from any set of images.
- 2: To easily create photo mosaics.
- 3: As photo frame editor add borders and text to users photos.
- 4: Can be used in smart phones (android) starting from version 4.
- 5: From the creative photo grid we can create our own frames for inserting the images.

5. CONCLUSION

As you can see, the most important factors that make this app different from other photo editing applications is that creativity and talent of an individual are given more priority than inbuilt features which can be used as it is. Creative photo grid not only allows users to turn the regular photos into fantastic looking collages but also performs basic and useful editing, by taking photos all from within the app. It's easy to use, creative photo grid allows casual users to perform advanced tasks within a short span of time by learning how to use complex tools. Overall, creative photo grid is must app for anyone looking to spice up their photos with beautiful effects.

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