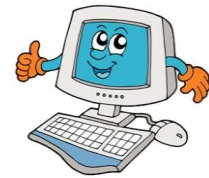# 5 Using Pictures in Synfig

Pictures when used in a presentation or animation improve the quality of reception. In Synfig, we can insert images to give a different look to our animation. We can also work with these images and adjust them as per our requirement just the same way as we work with the objects drawn using the tools. In this chapter, we will see how to work with pictures.

Inserting Image

Let us try to create a layer that contains image in it. To import an image onto a canvas perform the steps mentioned.

- Create a new file.

- Select File → Import. Alternatively, you can also press CTRL + i. This combination is the shortcut key to import image. This will open a dialog box showing the folders from where you want to import the image as shown in figure 5.1. Select the image that you would like to import and press open. The image will be imported on the canvas. Figure 5.2 shows the image imported to the canvas by us. Note that our screen may vary depending on the image that you choose to import.
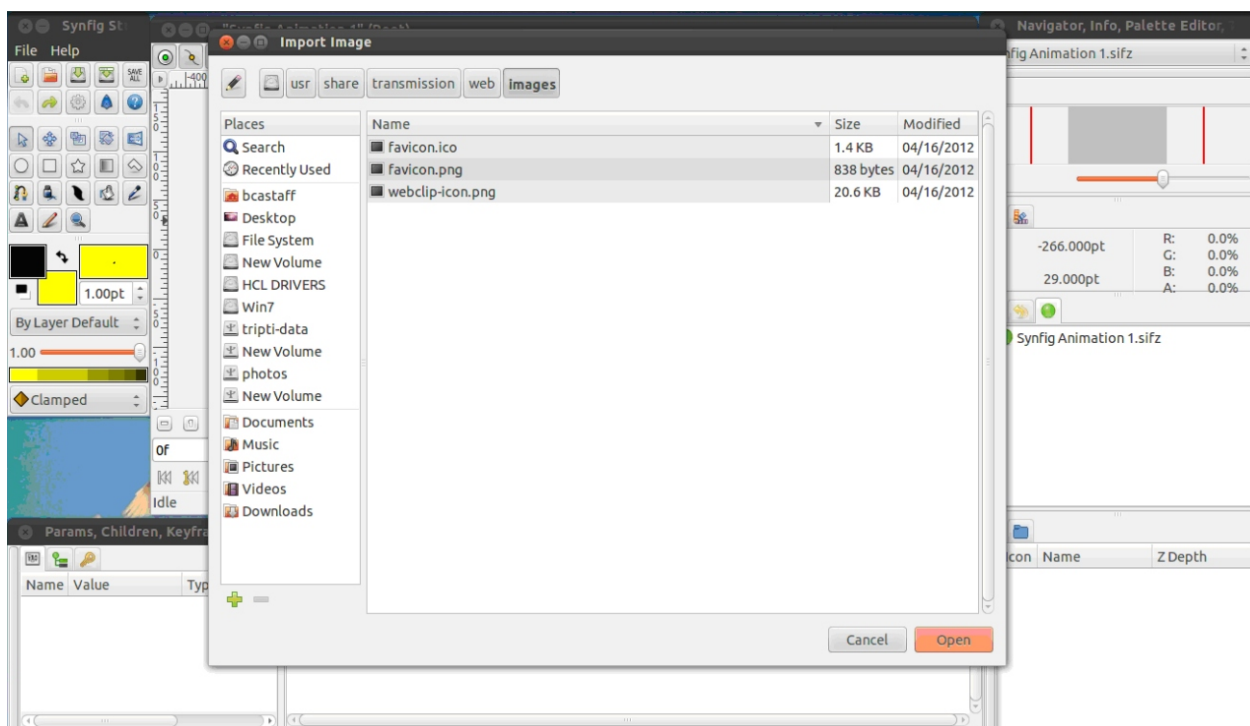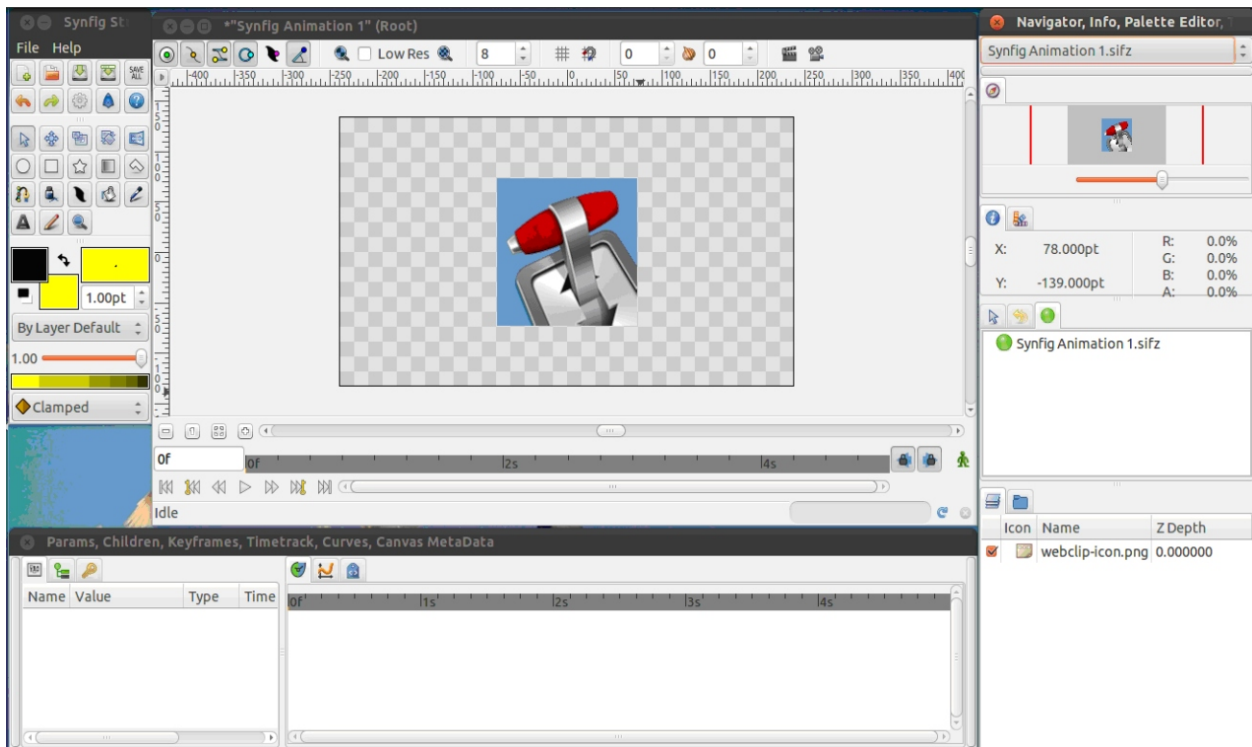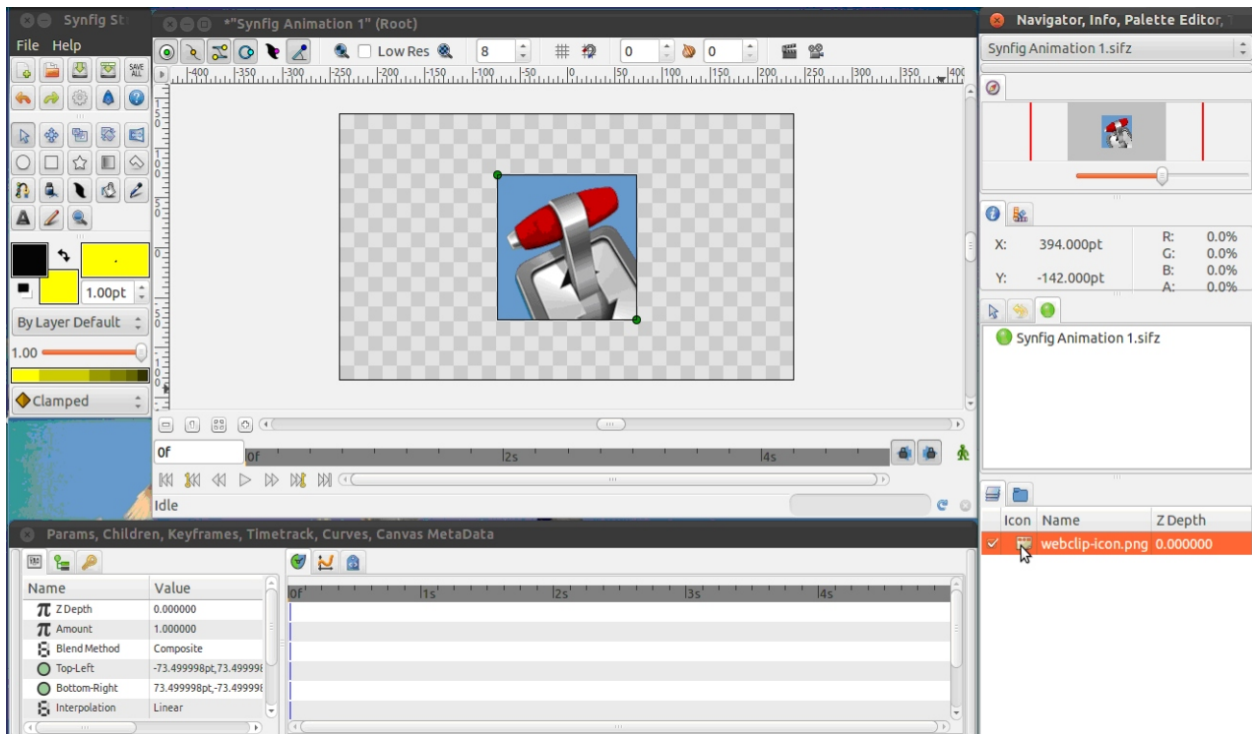

Figure 5.1 : Import image dialog box

Figure 5.2 : Image inserted on the canvas

- To resize the imported image, select the image layer in the layers panel. As shown in figure 5.3 you can see two green points on the image. These can be now used to change the size of the image. Figure 5.4 shows the resized image when the green dots are moved.


Figure 5.3 : Green points to resize the image

Figure 5.4 : Image resized using green points

- Observe that whenever we resize, the image tends to get distorted. This happens as we have not maintained the aspect ratio. If we want to resize the image and keep its aspect ratio we need to encapsulate the layer.

- Right click on the image layer and select encapsulate. This will add an inline canvas layer. Open up the encapsulated layer using the small triangle and you can see the image layer inside the inline canvas as shown in figure 5.5.
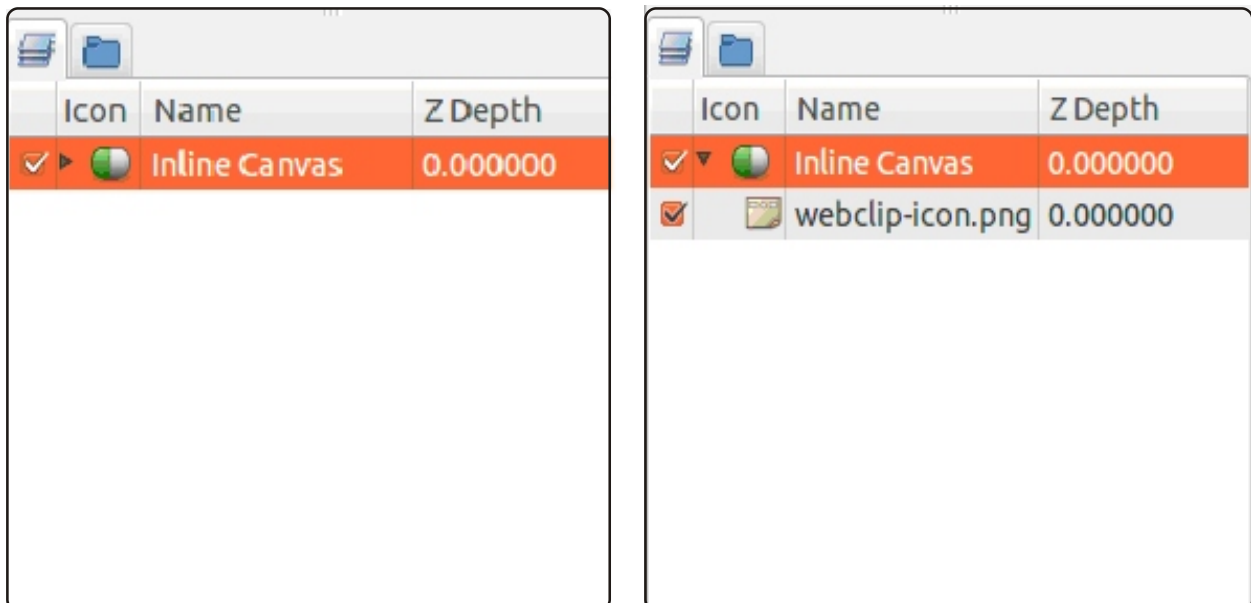
Figure 5.5 : Encapsulated image layer

- Now we need to add a new scale layer above the image layer. Select the image layer → Right click → New Layer → Transform → Scale. You can see a scale layer is added to top of the image layer as shown in figure 5.6.

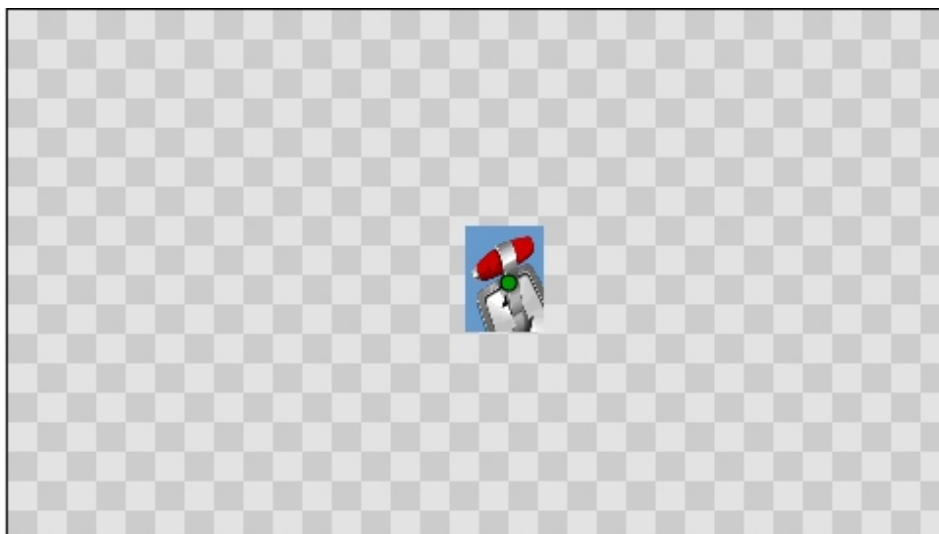**Figure 5.6 : Scale layer added above image layer**

- Select the scale layer and in the parameters panel change the amount setting from 0 to -1 as shown in figure 5.7. In the canvas you see the change in the image size as shown in figure 5.8.

Figure 5.7 : Scale layer amount setting changed from 0 to -1


Figure 5.8 : Scaled image

- Now if you want to rotate the image then add a new rotate layer above the scale layer. Select the scale layer → Right click → New Layer → Transform → Rotate. You can see a rotate layer is added to top of the scale and image layer as shown in figure 5.9.
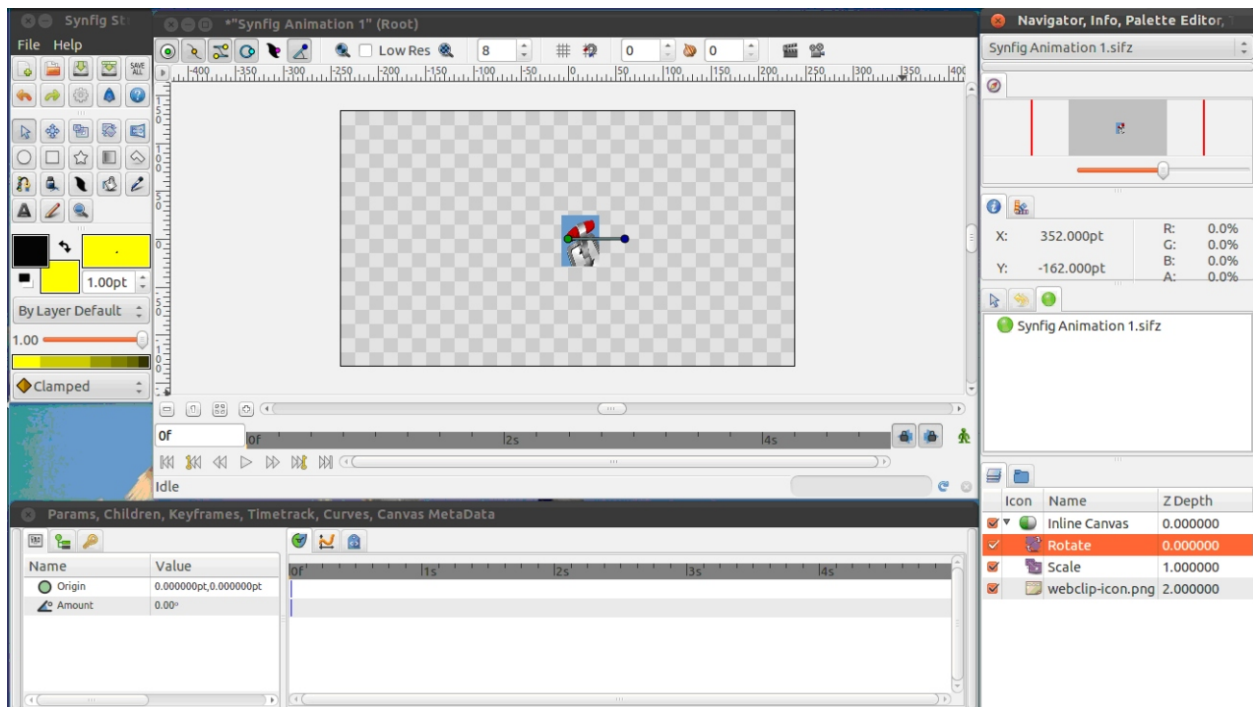
Figure 5.9 : Rotate layer added above scale layer

- By using the rotation duck (blue duck) you can rotate the image as you want. Figure 5.10 shows the rotated image.
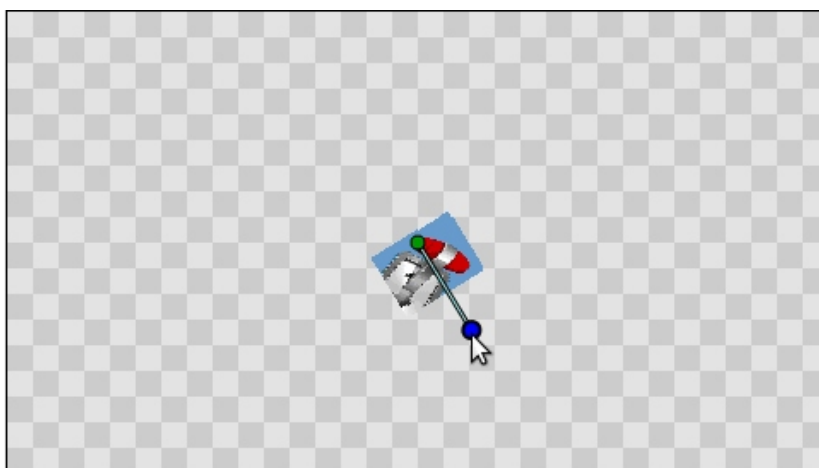
Figure 5.10 : Image rotated using the duck

Observe that once an image has been inserted we can scale, rotate and perform different operations on it. Images when used always enhance the animation.


Masking

Suppose, in your animation you want to show the movement of an object say clouds moving through the window. If the window is drawn using Synfig then you can place the object behind the window and can move the cloud object. But if the window is an image then it becomes difficult to animate the cloud.

Masking is a feature by which you can hide or reveal areas of a layer. Basically, the shape used as a mask acts like a window with the help of which you can see the objects beneath it. Alternatively, it can be used as patch to hide the objects beneath it.

Let us understand by an example and try to show a cloud moving through the window using the concept called masking.

- Create a new file.
- Now import an image on the canvas using CTRL + i. Select the picture. And resize it as per the requirement. Figure 5.11 shows the imported image. Note that your screen may look different based on the image you select. You can see the image layer added in the layers panel.
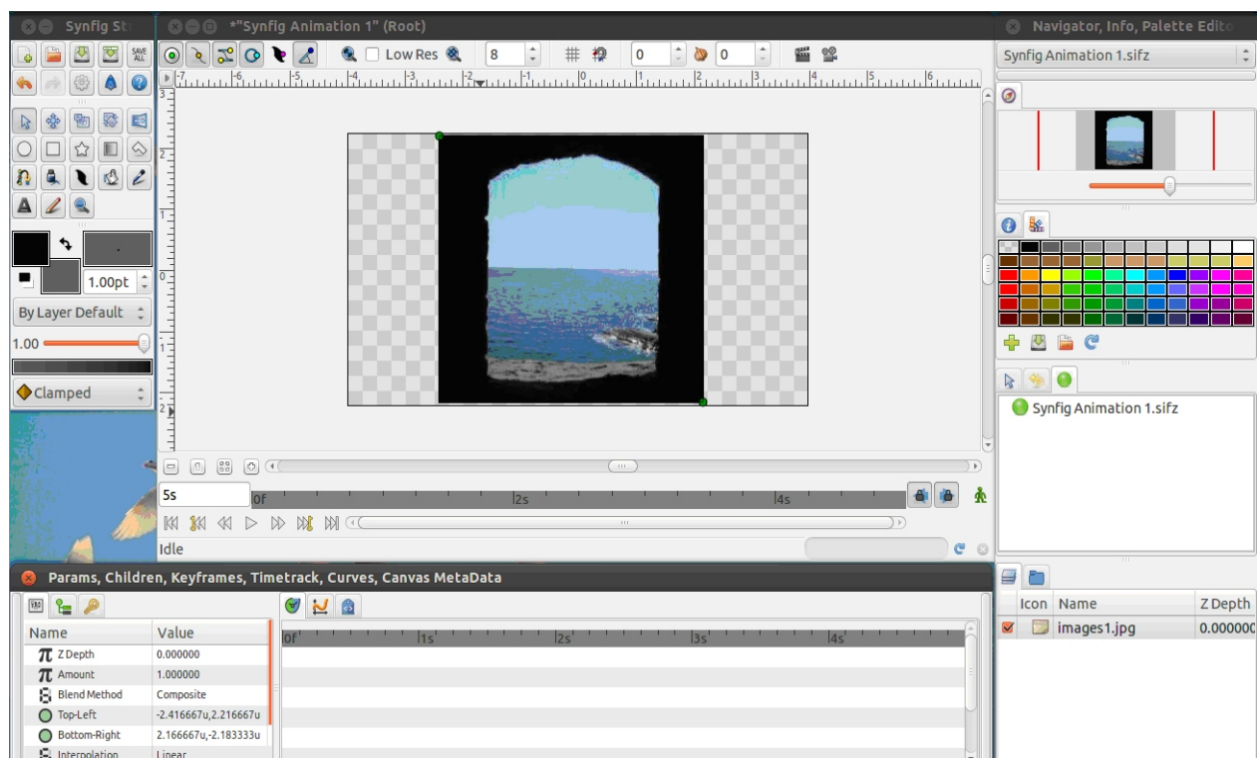

Figure 5.11 : Image imported on canvas

- Now using Bline tool draw a cloud on the left side of the canvas as shown in figure 5.12. You can see the Bline layer on top of the image layer.
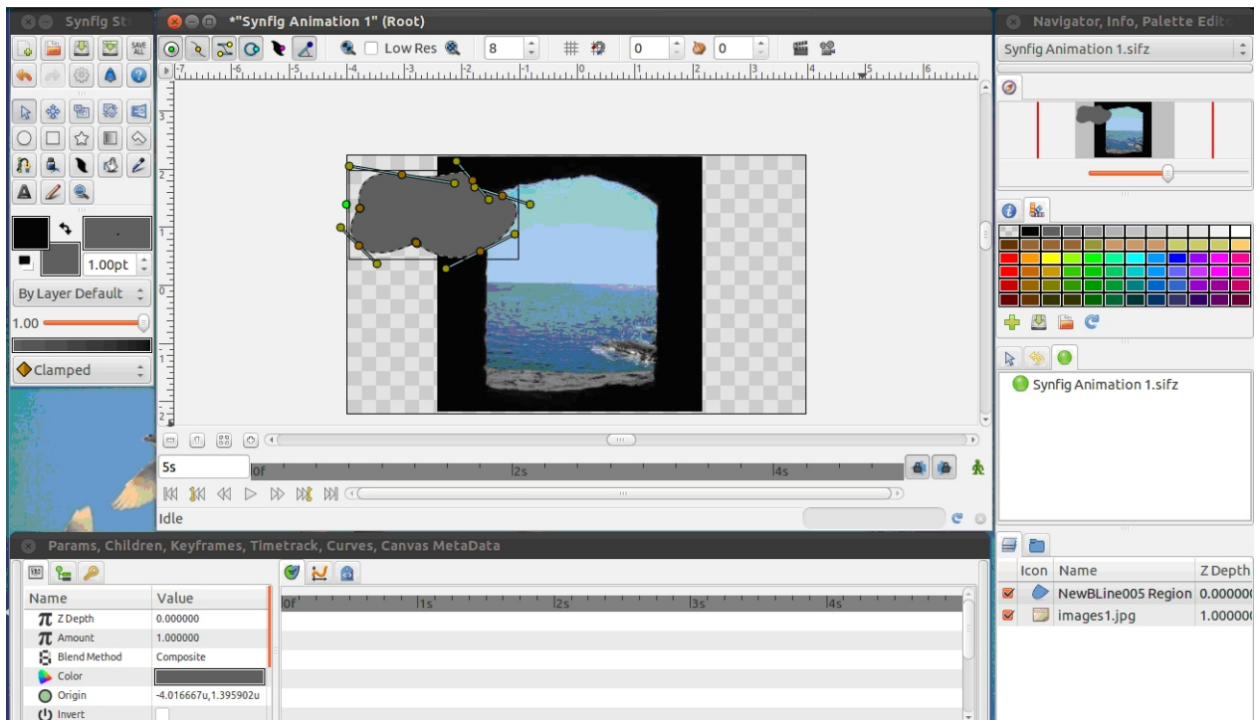
Figure 5.12 : Cloud drawn using Bline tool

- Now turn on the animate edit mode.

- We will create a small animation of cloud moving from left to right of the canvas. Move the cloud a little bit to record the position at 0f in the timeline. Now click on 5s mark on the timeline and drag the cloud towards the right. Figure 5.13 (a) and (b) shows the status of animation at "0f" and "5s" respectively.
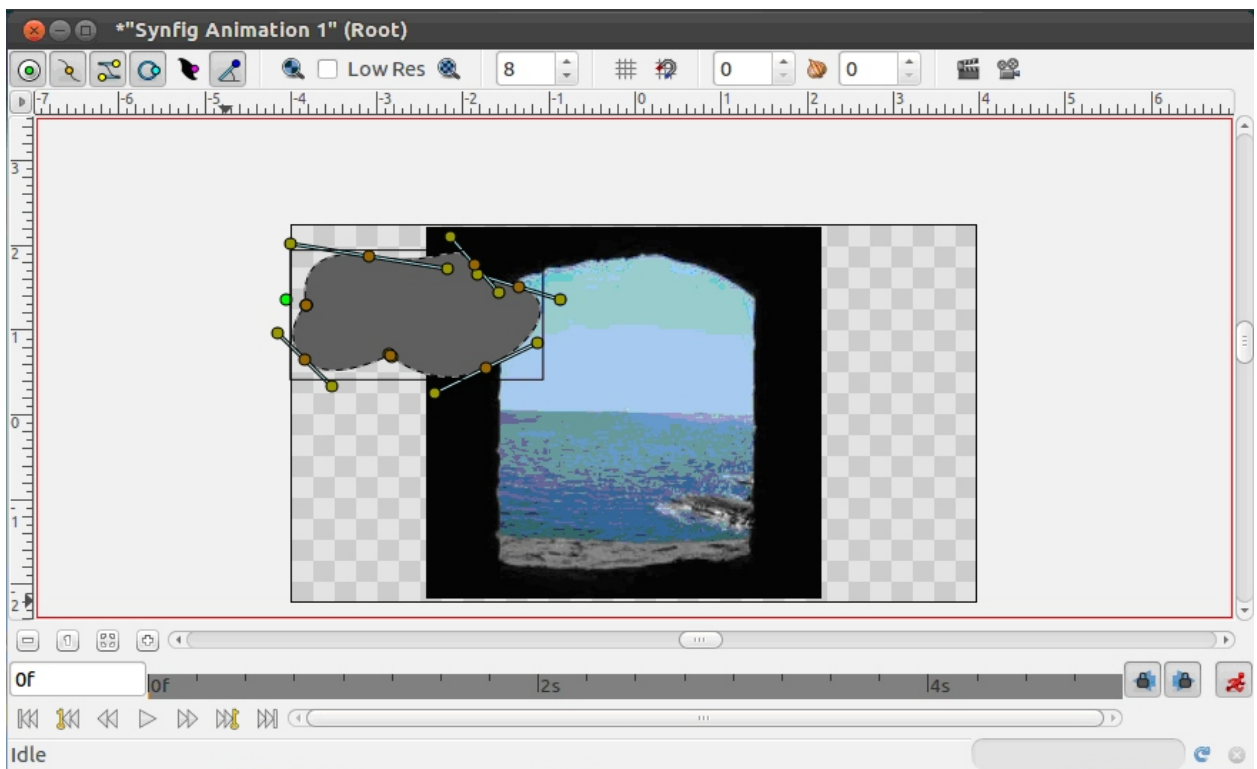
Figure 5.13(a) : Animation of cloud at 0f
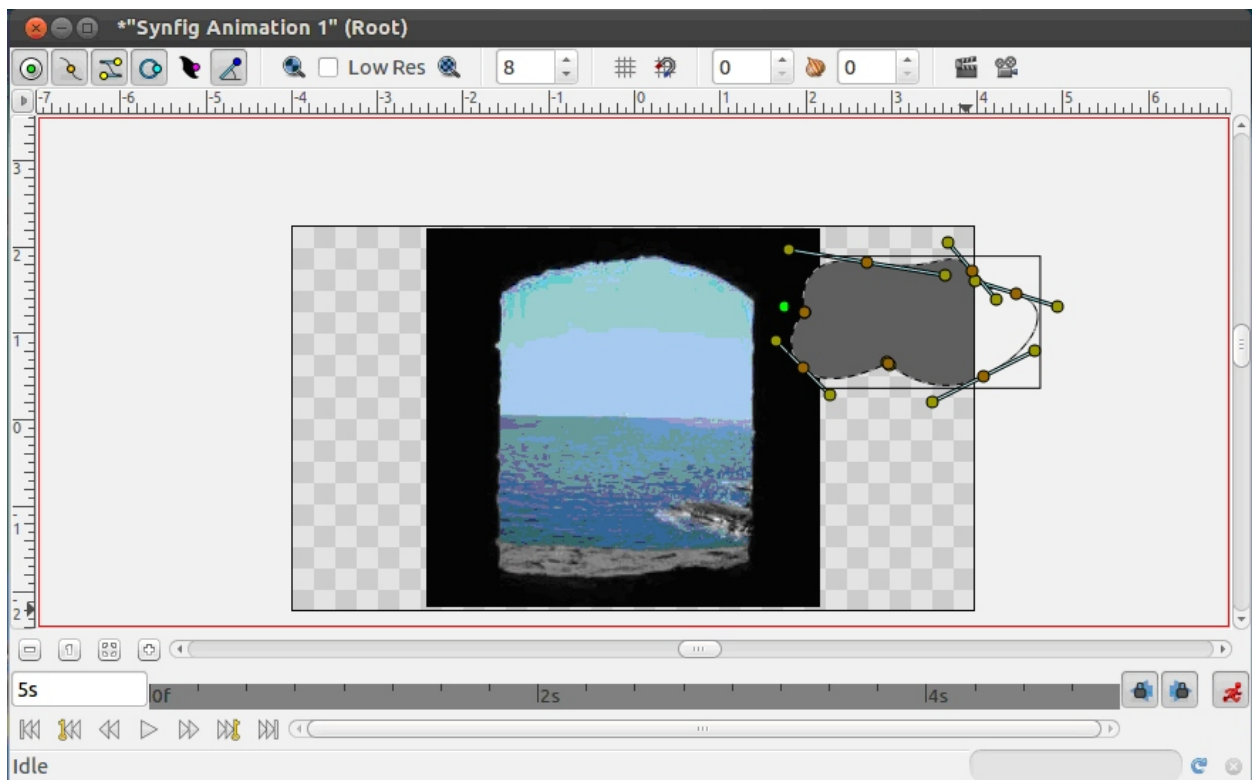
Figure 5.13(b) : Animation of cloud at 5s

- Turn off the animate mode and click on the play button to see the animation.

- You can see the cloud moving in front of image, as the cloud layer (or NewBline005 layer) is above the image layer shown in figure 5.14(a).

- To change the animation, in the layers panel, drag the cloud layer below the image layer as shown in figure 5.14(b). Click on the play button to see the animation. You can see the difference in the animation. Now the cloud is moving from behind the image.


Figure 5.14(a) : Actual position of layers   **Figure 5.14(b) : Modified position of layers**

But we want the cloud to move through the window image only. We will do this by using masking. Masking is used to hide or reveal an object.

Let us first use masking for hiding the objects. Here we want the cloud object to be hidden at both the ends of the image.

- First, we need to create a mask shape to hide the cloud on both the sides of the canvas. We will use the Bline tool to create the mask shape. Select the Bline tool and from the tool options select only 'Create Region Bline' option. Draw a rectangular shaped Bline as shown in figure 5.15. To end the Bline, at the last vertex right click and select 'Loop Bline'.
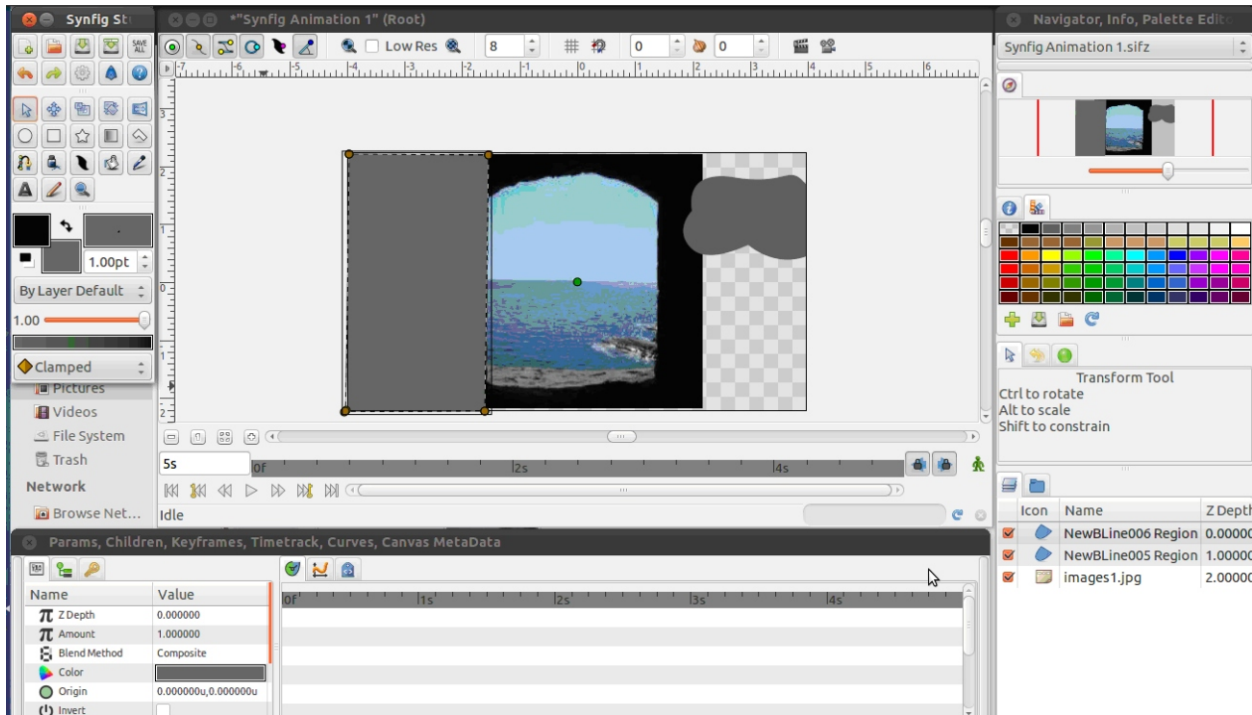
**Figure 5.15 : Mask shape created using Bline tool**

- Place the mask shape above the elements you want to mask. In our example we will place the mask shape above the cloud layer. Also, as we want to apply mask only on the cloud layer, we will encapsulate the mask shape and the cloud layer. Figure 5.16 shows the encapsulated layer 'inline canvas' and also shows the contents of inline canvas layer. We have renamed the layers NewBline005 as cloud layer and NewBline006 as mask layer. Click on the layer name which will allow you to change the name.


Figure 5.16 : Mask shape and cloud layer encapsulated

- Select the mask layer from the layers panel and in the parameters panel set the blend method to 'Alpha over'. Figure 5.17 shows the blend method changed to 'Alpha Over'.
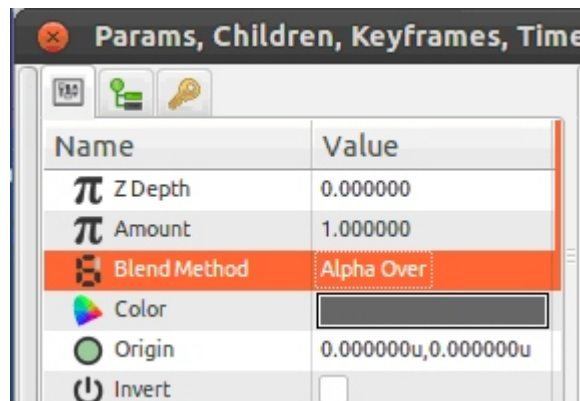
Figure 5.17 : Change the Blend method to 'Alpha over'

- Play the animation and you will see that the cloud is now not visible on the left side of the canvas.

- We need to do the same thing on the right side of the canvas also. So draw a rectangular mask shape using Bline tool on the right side of the canvas as we did earlier on the left side. Figure 5.18 shows the mask shape on the right side of the canvas.
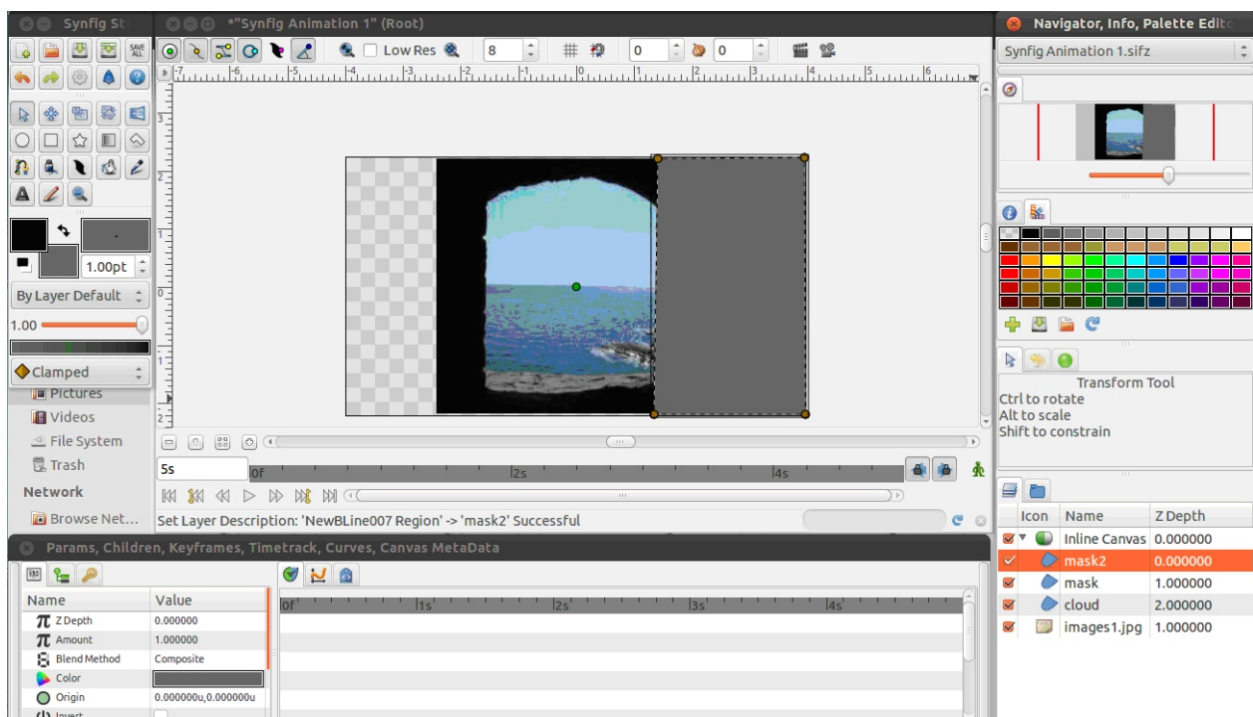
Figure 5.18 : Mask shape created on the right side of the canvas

- Rename the layer as mask2 and drag the mask2 shape layer into the encapsulated layer above the mask layer as shown in figure 5.19.

Figure 5.19 : Repositioning mask2 layer

- Select the mask2 layer from the layers panel and in the parameters panel set its blend method to 'Alpha over'.

- Play the animation and you can see that now the cloud moves through the window image.

- Save and render the file. Figure 5.20 shows the output on web browser.

Figure 5.20 : Output displayed in web browser

Thus, using masking we can hide the objects. Masking can also be used to reveal the objects. Let us say, in the image we want to show the sun. Only some part of the sun is visible in the image. Here we use masking to reveal the objects.

- Create a new file.

- Import an image on the canvas using CTRL + i. Select the picture. Figure 5.21 shows the imported image and the image layer added in the layers panel.
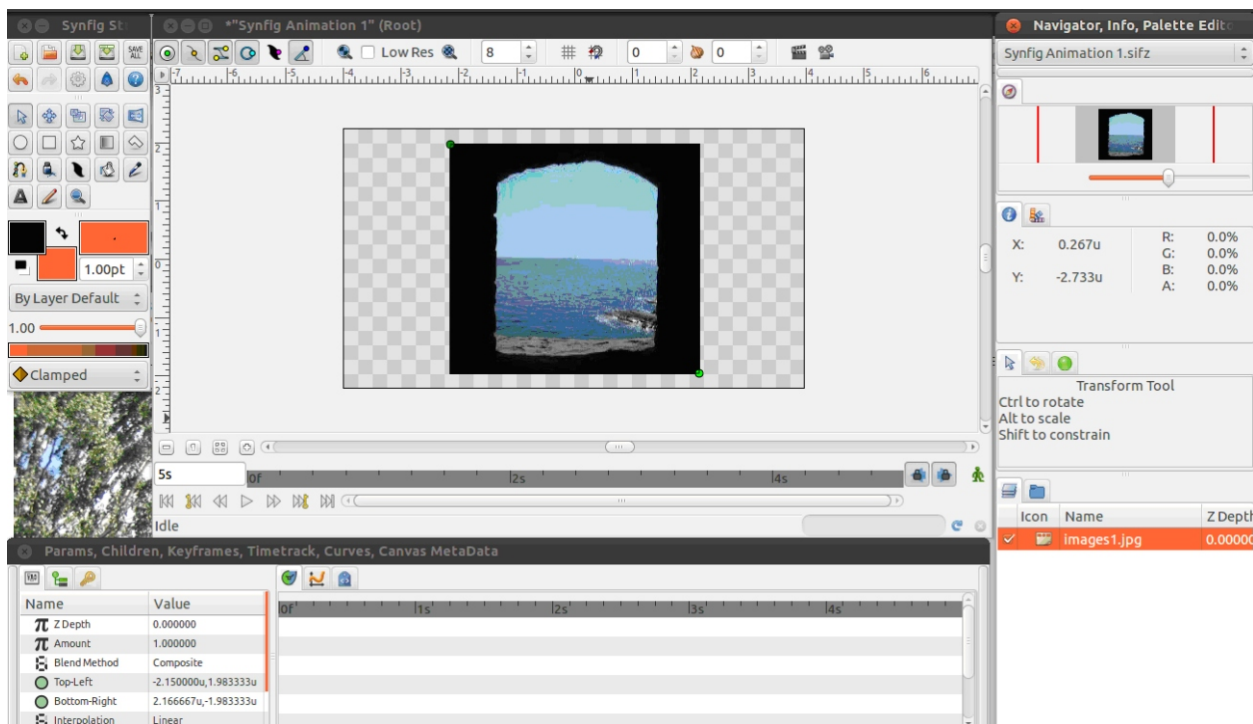
Figure 5.21 : Import the image

- Select circle tool and the color from the palette. Draw an orange coloured circle as shown in the figure 5.22. Rename the layer as 'sun'.
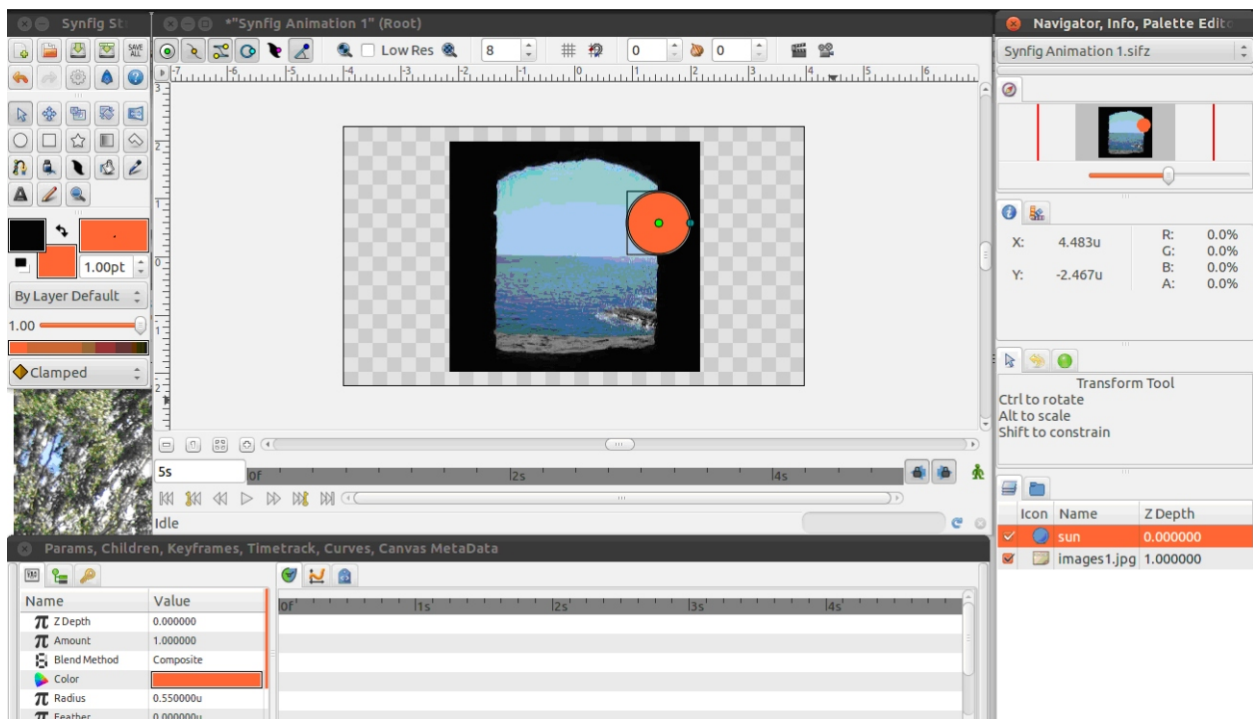
Figure 5.22 : Draw a circle

- Draw a mask shape using Bline tool. Here we need to draw the mask on the part of the sun that will be revealed. Figure 5.23 shows the mask. Rename the layer as 'mask' as shown in figure 5.24.
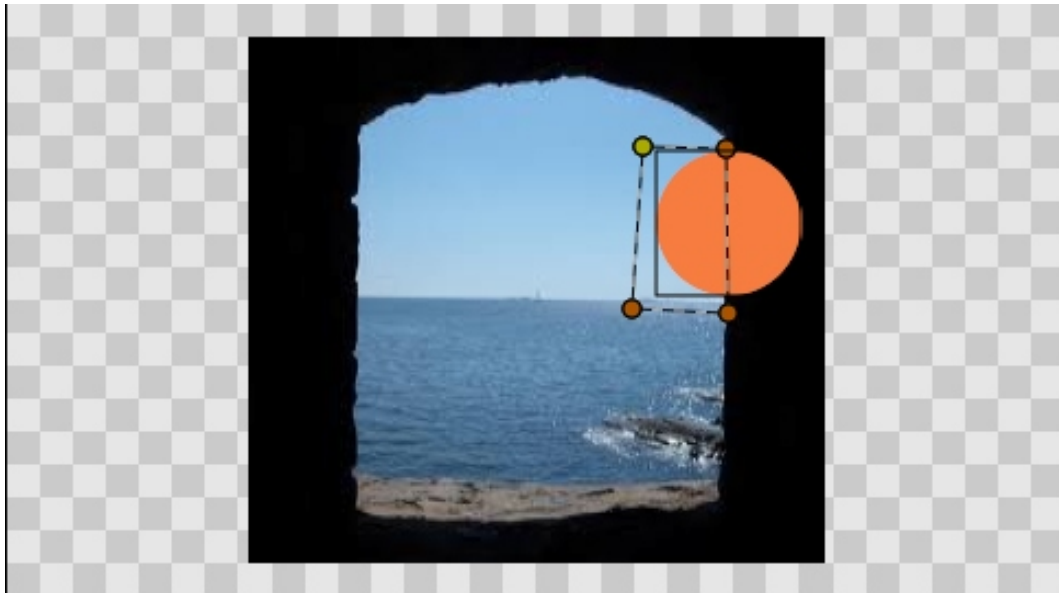
Figure 5.23 : Draw a mask shape

Figure 5.24 : Renaming the new Bline layer

- Select the mask layer and in the parameters panel select the 'invert' option as shown in figure 5.25. Figure 5.26 shows the effect on the canvas after selecting invert option.

Figure 5.25 : Invert option selected in parameters panel

Figure 5.26 : Effect on the canvas after selecting invert option

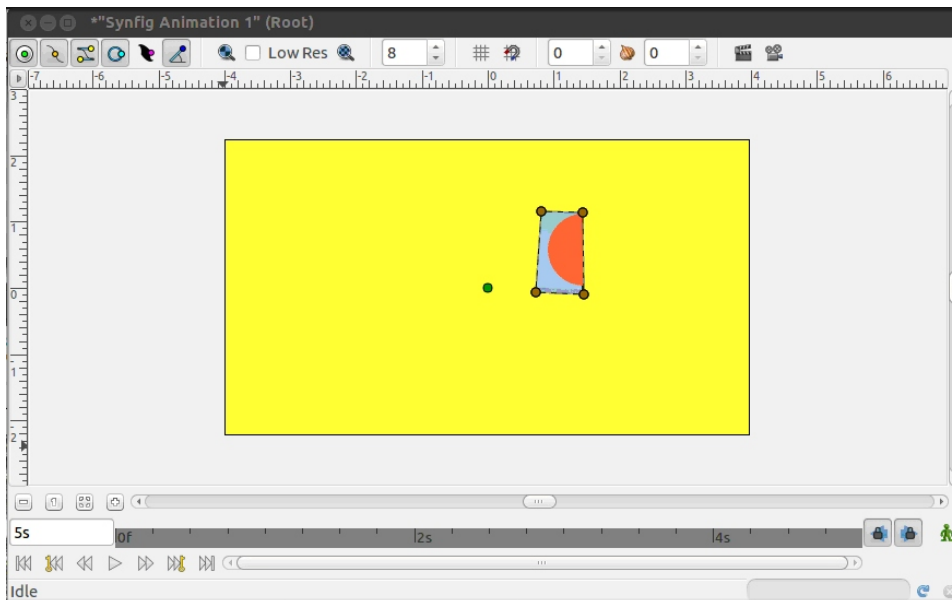● Change the blend method to 'Alpha over' as shown in the figure 5.27. The canvas will now appear as shown in figure 5.28.
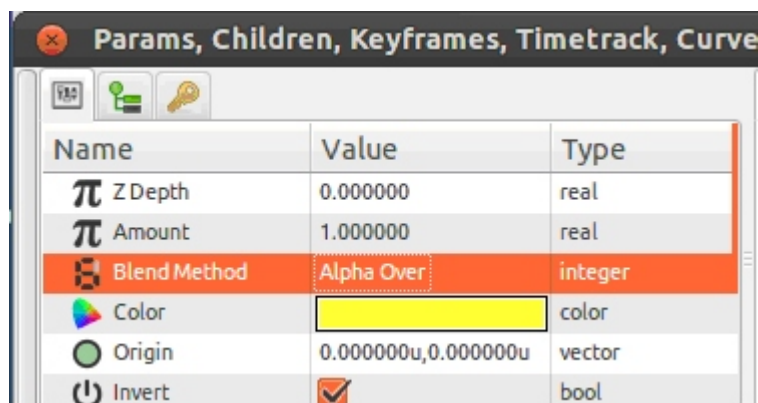

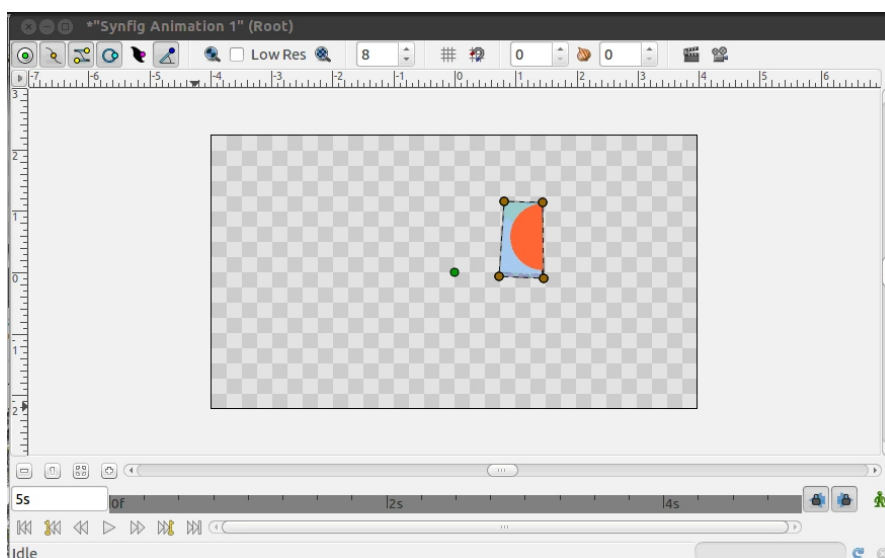Figure 5.27 : Change the blend method to Alpha over

Figure 5.28 : Effect on the canvas after changing blend method

- As the image layer is placed below the mask layer, only the objects that are below the mask layer are visible. But we want the mask effect on only the sun layer and not the image. So we need to encapsulate both of them as shown in figure 5.29.

Figure 5.2 9: Encapsulate the mask and sun layers

- We can see the effect of masking in figure 5.30. We can put any number of objects below the mask layer which will be revealed. The objects on which we do not want to have masking effect should be placed out of the encapsulated layer.
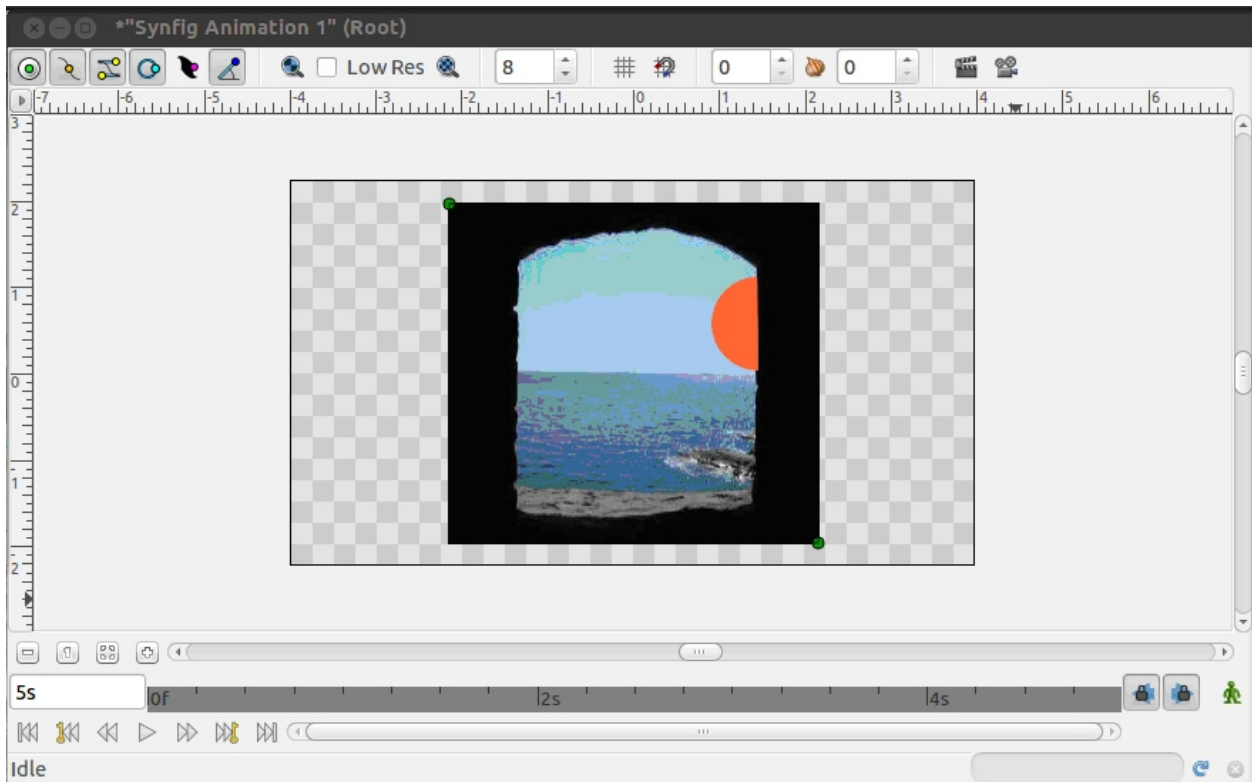
Figure 5.30 : Effect of masking to reveal an object

Create slideshow using Synfig

Assume that you want to create a slideshow on "Gujarat Tourism" wherein you want to show the viewer glimpse of Gujarat. To show the glimpse we will need to display images one after the other. Also at a time, only one image is visible. As we need to work with individual image they should be placed on different layers. To handle the visibility of the images we will use the parameters 'blend method' and 'amount' property of each layer. We have earlier used the blend method property which

defines the layering of the image on everything below it. The amount property is used for the visibility of the image just like the alpha value. Amount value of 1 signifies the layer is fully visible and 0 means the layer is fully transparent. Follow the steps given to create the slideshow:

- Create a new file.

- Press CTRL + i to import the image. If you do not have images then download some from the Internet. Import the images one by one on the canvas. Place each image in a different layer. Figure 5.31(a), (b), (c), (d), (e) and (f) shows the six imported images in the layers panel. Resize the images to the size of the canvas.
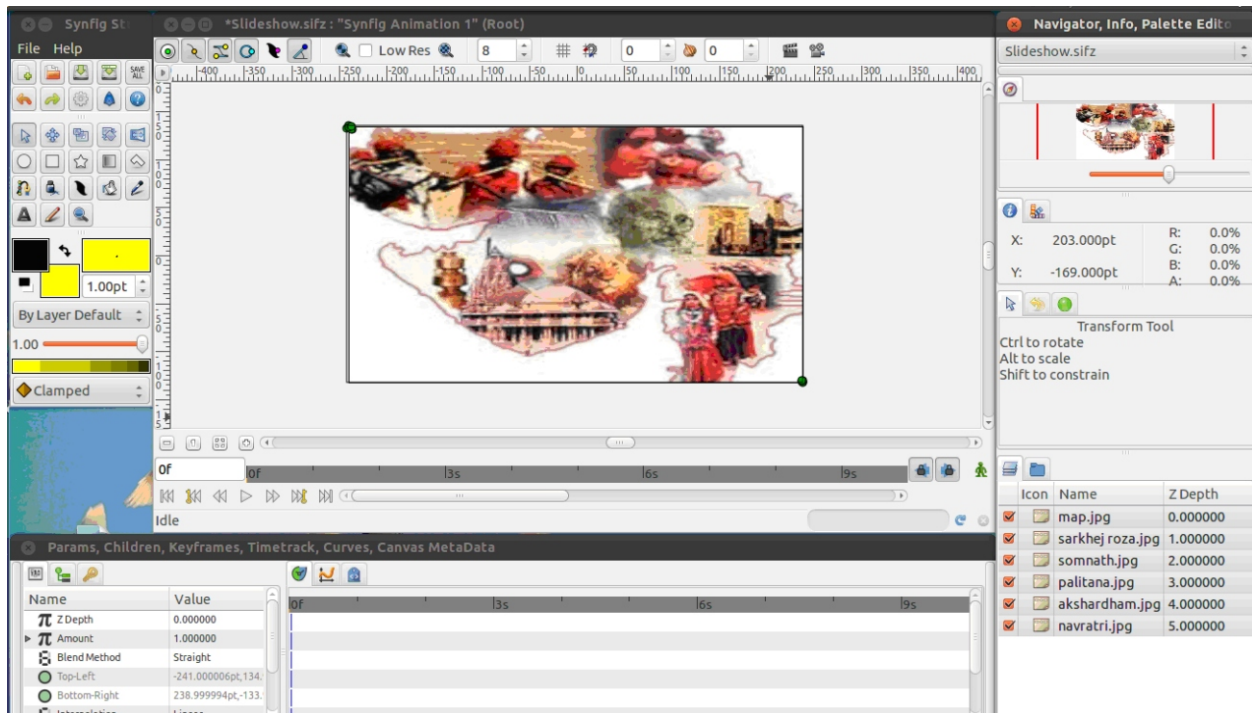
Figure 5.31(a) : Imported Gujarat Map image

Figure 5.31(b) : Imported Sarkhej Roza image
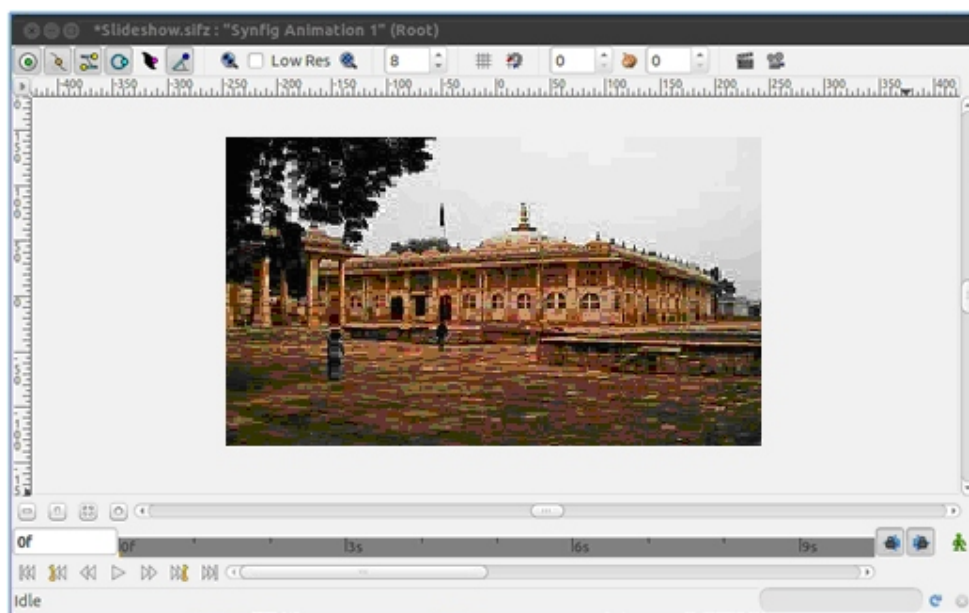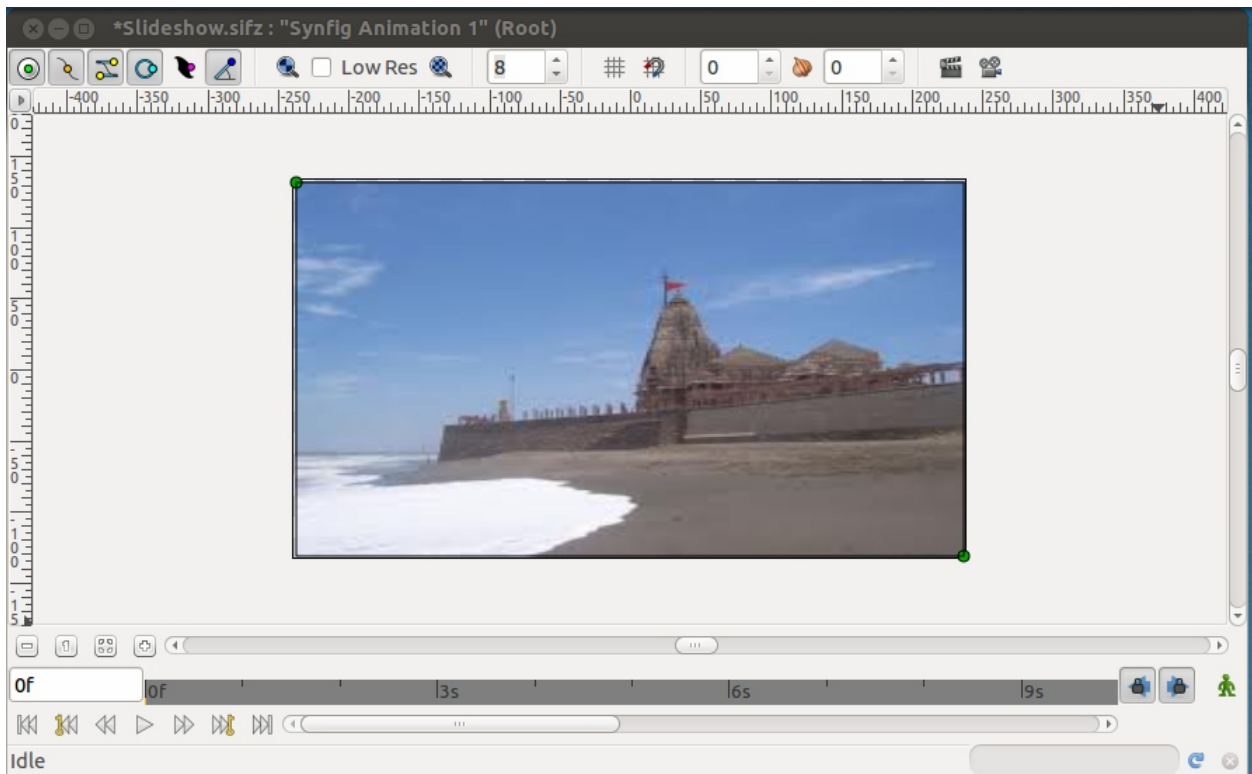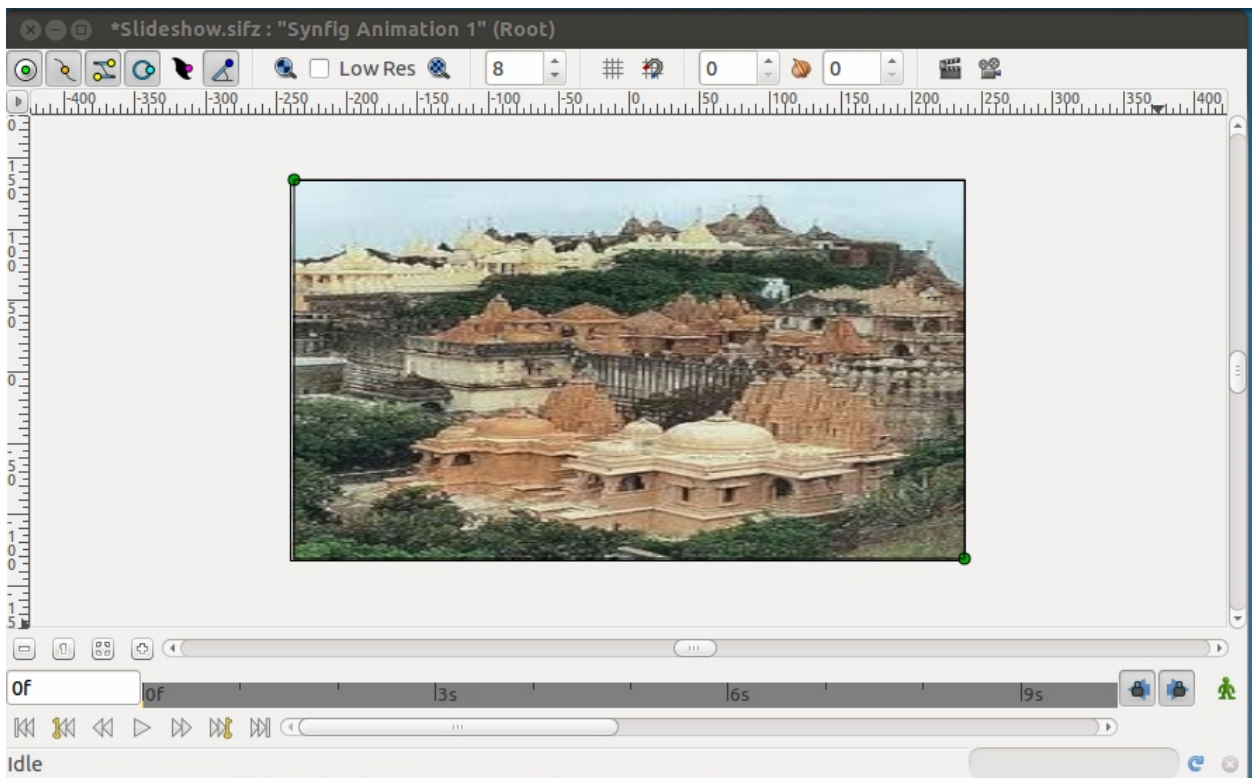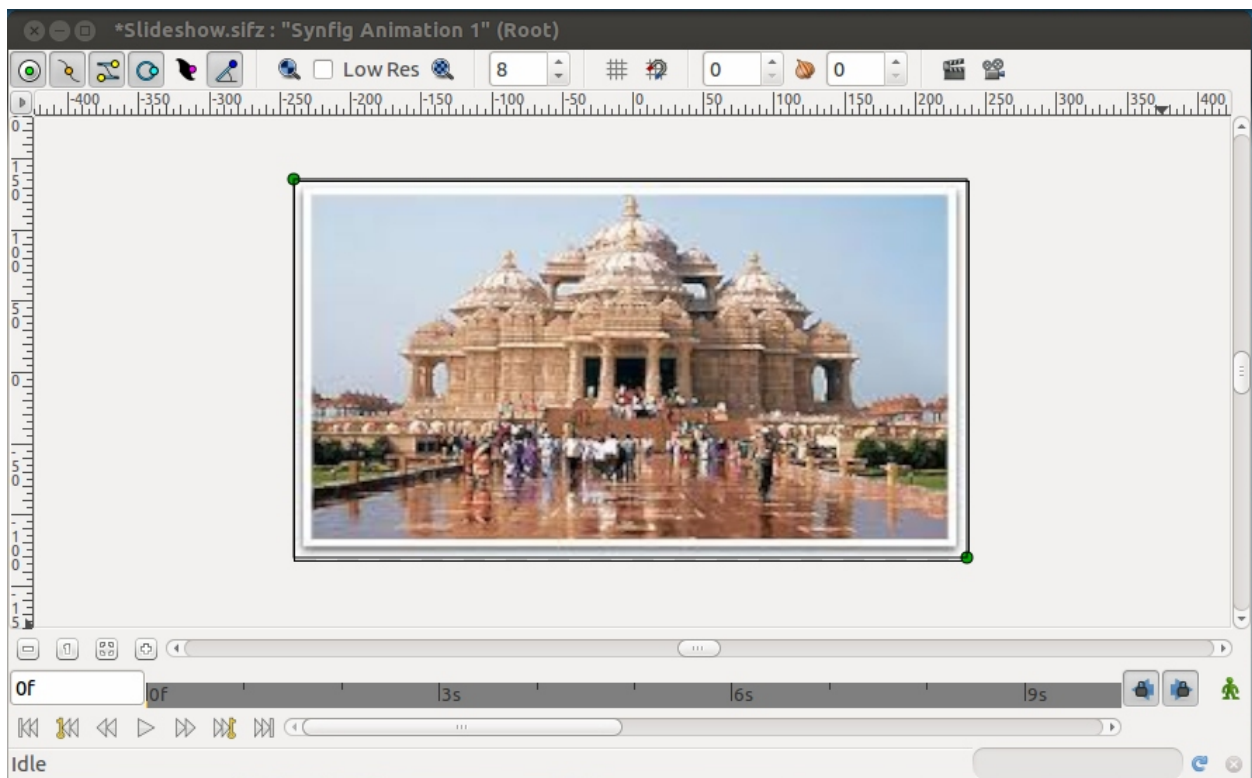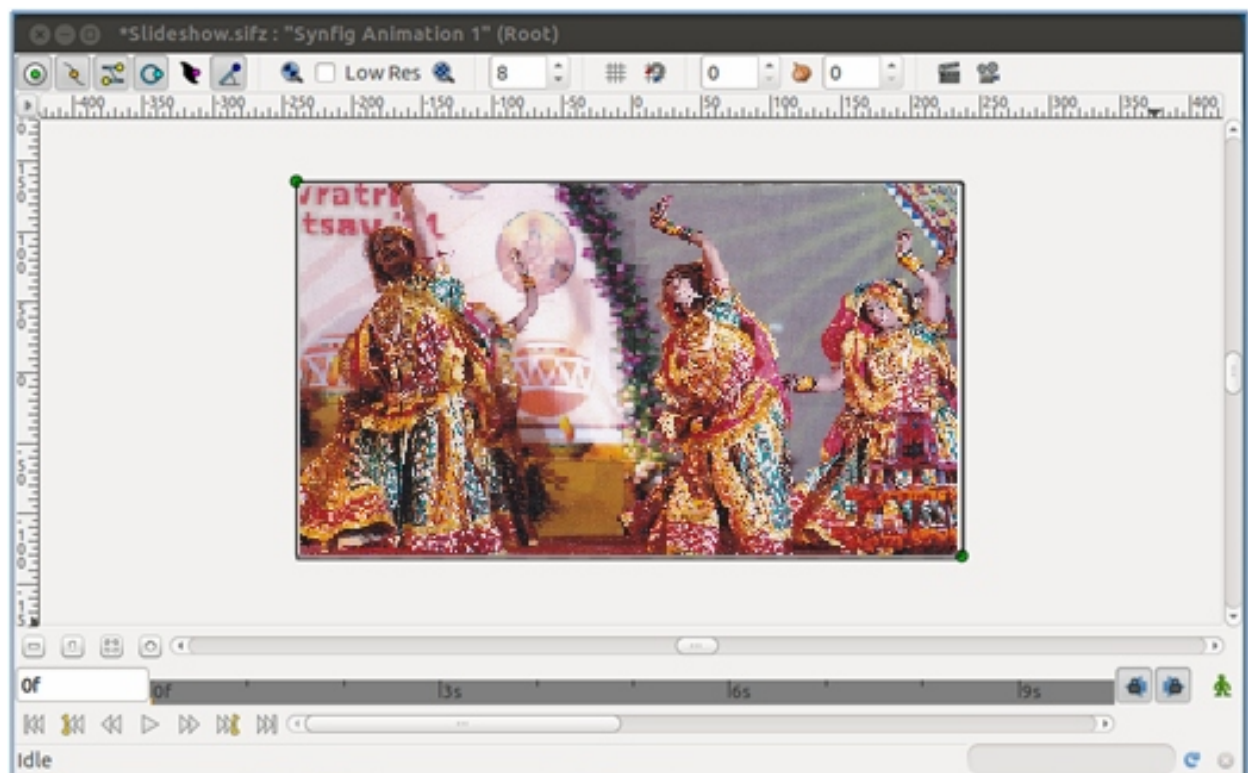
Figure 5.31(c) : Imported Somnath image

Figure 5.31(d) : Imported Palitana image

Figure 5.31(e) : Imported Akshardham image

Figure 5.31(f): Imported Navratri image

● Press shift key and select all the images in the layers panel. Go to parameters panel and change the blend method to 'straight' for all the images as shown in figure 5.32.
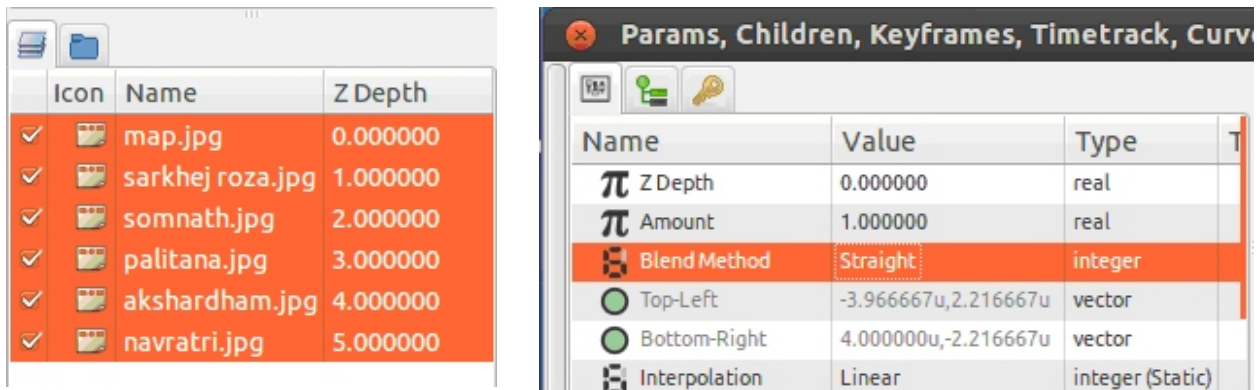
Figure 5.32 : Select the images and change blend method to straight

- After setting the blend method property we now need to work with the amount parameter. But like blend method, the amount parameter cannot be set collectively for all the layers. We need to work with amount property for each layer individually. Here we need to convert the amount property to 'Timed swap'.

- Select the topmost map layer as shown in figure 5.33 and in the parameters panel select the amount parameter and right click. Right clicking will open a context menu. Select Convert → Timed swap. Convert specifies that the parameter is controlled automatically in different ways. Each parameter can be converted and contains different options. Figure 5.34 shows the amount property Timed swap. This will add new sub parameters: Before, After, Time and Length to the amount property as shown in figure 5.35. These options specify the visibility of the image, swapping it from 'before' to 'after' parameter using 'length' and finishing the swap at the specified 'time'.
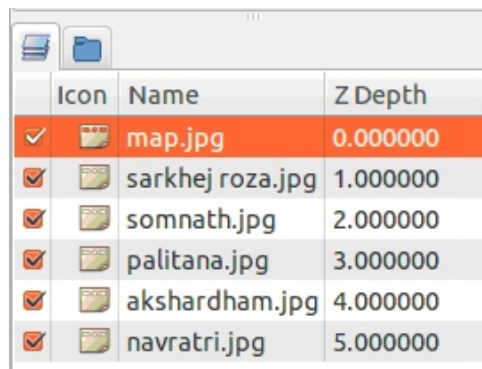
Figure 5.33 : Select the topmost image layer
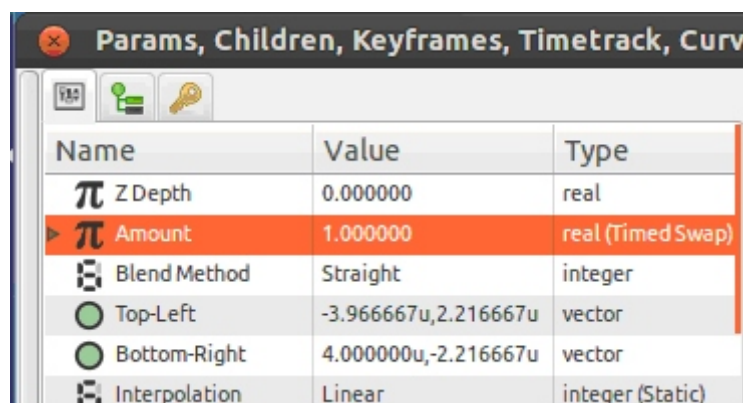
Figure 5.34 : Change the amount parameter to Timed swap

Figure 5.35 : Newly added parameters to the amount parameter

- Set the parameter 'before' to 1.0 and 'after' to 0.0. The parameter before set to 1.0 indicates the layer will be visible before the 'time' specified and after set to 0.0 indicates that the layer will be invisible after the specified 'time'. If you want the images to display for 5 seconds using 1 second transition between each image then change the length to '1s' and time to '5s'. After 5 seconds the image will be invisible. Figure 5.36 shows the settings applied to amount parameter.

Figure 5.36 : Map layer Sub parameters settings

- Select the next image layer. Make it timed swap just like we did in earlier layer. Set the parameter 'before' to 1.0, 'after' to 0.0 and length to 1s. Set time to 10s. The swapping will be done at 10s. And image will be invisible after 10s. Likewise for the next image

Figure 5.37(a) :
Time setting for Sarkhej Roza layer

Figure 5.37(b) :
Time setting for Somnath layer

Figure 5.37(c) :
Time setting for Palitana layer

Figure 5.37(d) :
Time setting for Akshardham layer

layers change the time to 15s, 20s, 25s and so on. Figure 5.37 (a), (b), (c), (d) and (e) shows the settings for all the image layers.

Figure 5.37(e) : Time setting for Navratri layer

- Click on Caret → Edit → Properties. Select the time tab and set the end time equal to the last image layers time value. In our case the last image layer time is 30s. You can set the end time a little more than 30s if you want a blank screen in the end. Figure 5.38 shows the end time setting.

Figure 5.38 : End time set to 30s

- Click the play button to preview the presentation.

- Save and render the file. Figure 5.39 shows the output in web browser.
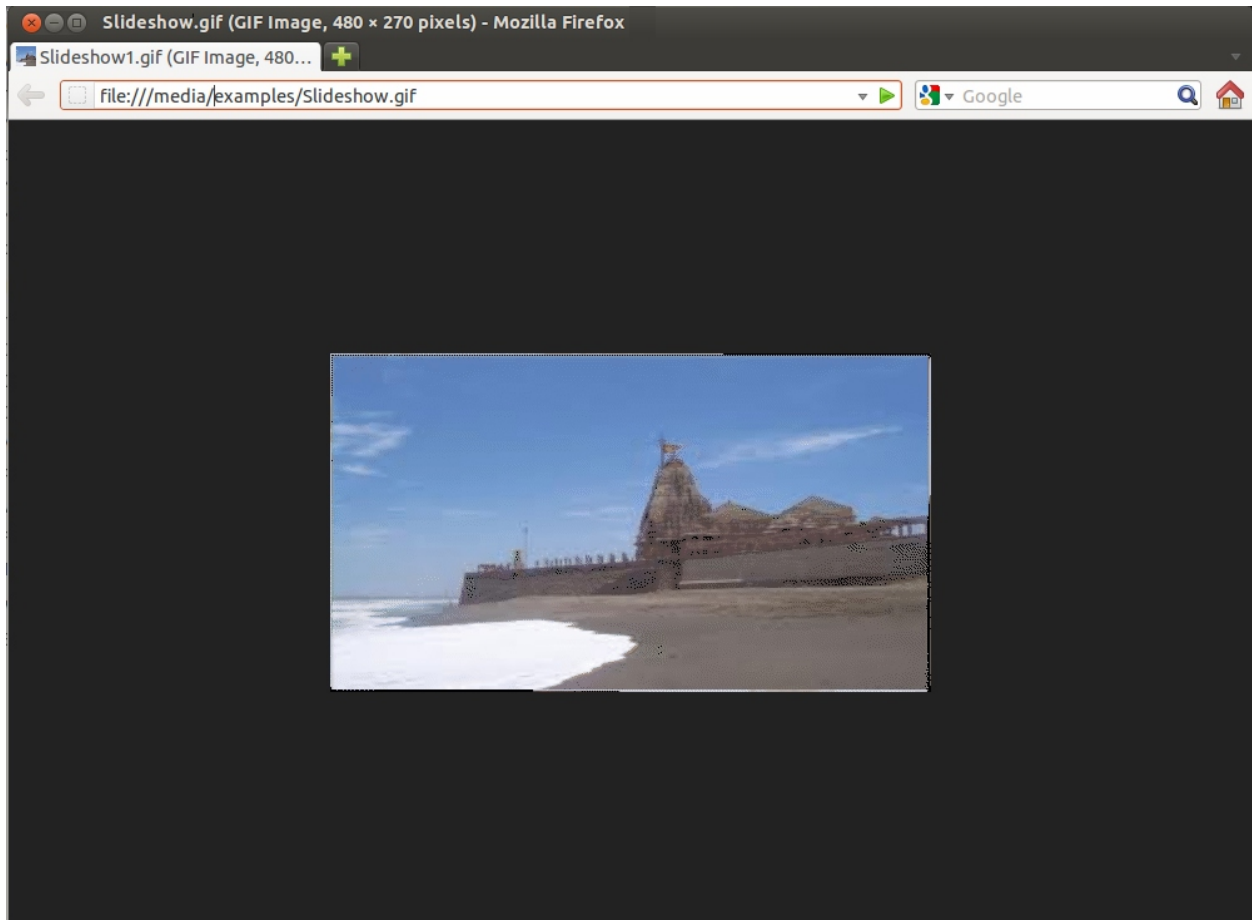
Figure 5.39 : Output displayed in web browser

If you want to place a background in the slideshow then encapsulate all the image layers. Place the background as the bottommost layer. The blend and amount parameters will be applied only in the encapsulated layer. We can also add text to the images and display the text during the slideshow.

Interactivity

Sometimes in animation, you need to move according to the choice of the user. Also the user might want to skip a particular portion of the animation and move further. These actions used for interactivity in animation software are known as action scripts. Action scripts are used to add flexibility to the animation programs. The term action script signifies the use of scripting language to add flexibility to the actions performed during the animation. It helps the user to either play the animation on a particular action or move as per his choice during the animation.

As of now, Synfig studio does not support action scripting directly in the animation software. But we can use javascript or java to add interactivity to our animation. It may not be possible here to discuss in detail the use of javascript or java to our animation. But let us discuss an example wherein we have used javascript to add interactivity to our animation.

Assume that you want to play the animation only when the user takes the mouse over the image. To achieve this, first we take two images. One of the images is the static image. In our example the static image is static-ball.gif. The second image is the animated image. In our example the animated image is animated-ball.gif. The animated image is the rendered file from Synfig in a format like gif, jpeg or bmp. The listed options are available when we render the files in Synfig as discussed in the earlier chapters. When the user opens the web browser, static image will be displayed. After he/she takes the mouse over the image, the animated image will be displayed using the javascript code. When the user moves the mouse away from the image the animation will stop. Follow the steps as mentioned:

- Create a new file in Gedit and write the code given:

```
<html>

<head>

<title>Rollover with a Mouse Events</title>

<script type="text/javascript">
if( document.images ){
    var image1 = new Image();        // Preload an image
    image1.src = "static-ball.gif";
    var image2 = new Image();        // Preload second image
    image2.src = "animated-ball.gif";
}
</script>

</head>

<body>

<a href="#" onMouseOver="document.myImage.src=image2.src" onMouseOut="document.myImage.src=image1.src">

<img name="myImage" src="static-ball.gif" />

</a>

</body>

</html>
```

- Save the file with extension .html.

- Open the file in a web browser to see the output. Figure 5.40 shows the output when the page loads. Taking the mouse over the image will animate it. Figure 5.41 shows the animated image.
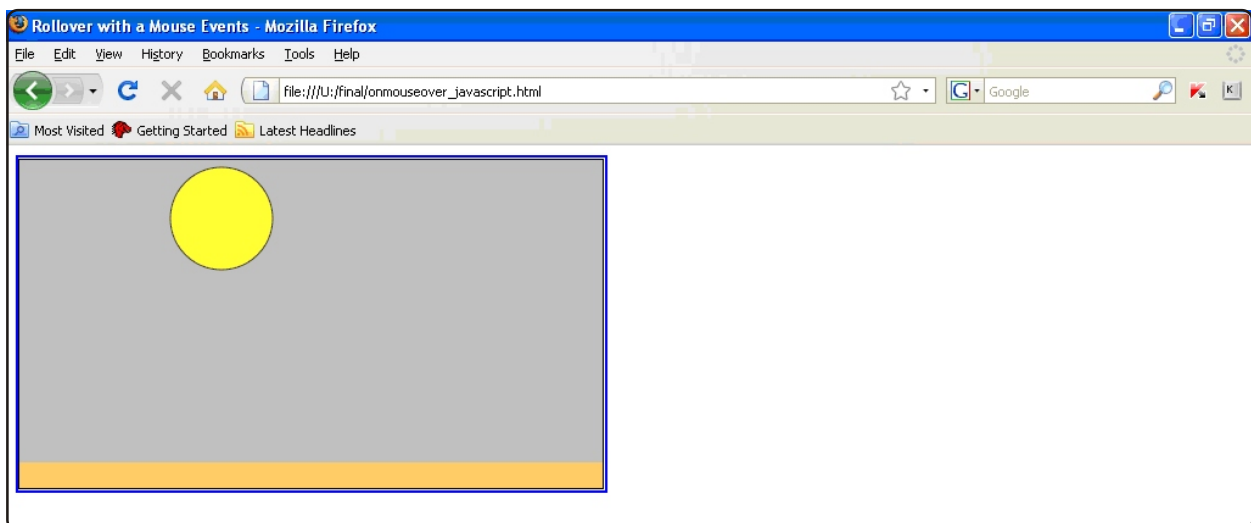
Figure 5.40 : Image displayed when the page loads.
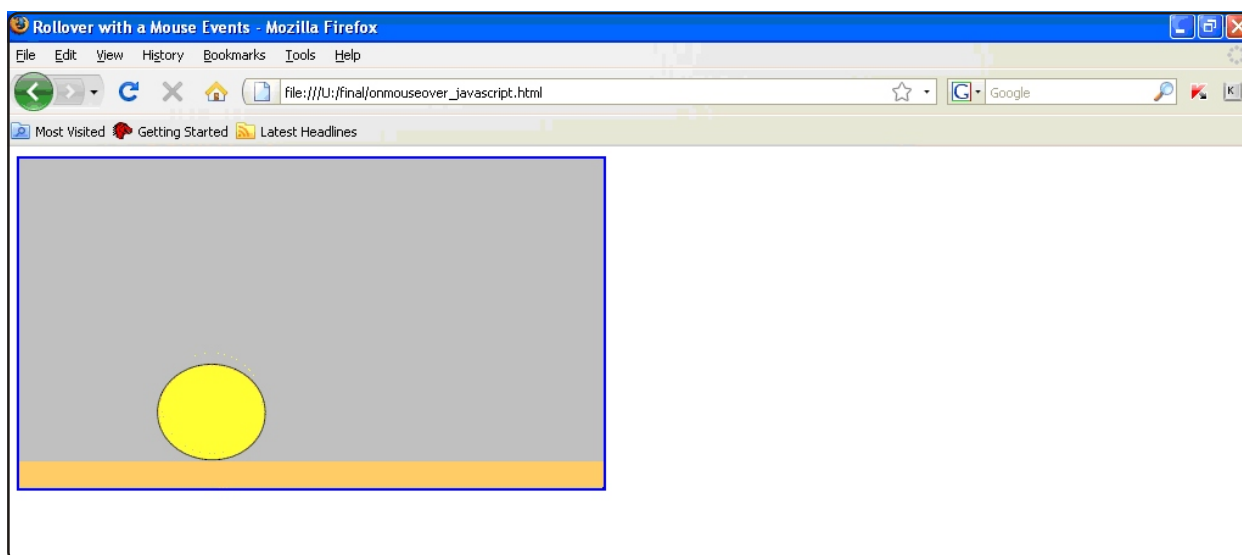
Figure 5.41 : Animated image displayed when the mouse is over the image.

Thus, using javascript we added interactivity to the animation.

Portability of files

The animation files created using particular animation software can be converted into Adobe Flash files (SWF files) for further manipulation. SWFTOOLS is an open source software tool suite which provides the conversion of various file formats into swf files. SWF is an Adobe flash file format used for vector graphics animation. After converting the files into swf format they can be further manipulated or created using Adobe Flash animation software. The tool includes programs for reading SWF files, combining them, and creating them from other content like images, sound or video file. Table 5.1 shows some of the programs used for conversion of files into swf format.

Program	Description
GIF2SWF	Converts gif files into swf files
PNG2SWF	Converts png files into swf files
JPEG2SWF	Converts jpeg files into swf files
PDF2SWF	Converts pdf files into swf files
WAV2SWF	Converts wav audio files into swf files
AVI2SWF	Converts avi animation files into swf files
FONT2SWF	Converts font files to swf files
SWFExtract	Extracts images, sounds and movie clips from swf files

Table 5.1 : List of programs supported in SWFTOOLS

Using the programs listed in the table 5.1, we can also convert the gif or jpeg files created using Synfig to Adobe Flash files (swf) for further manipulation.

Summary

In this chapter we learned how to insert pictures and work with them. Pictures like any other object created in Synfig can be rotated, transformed or scaled. We also discussed to hide or reveal an object using the concept of masking. We can also create a slideshow of images by working with the blend method and timed swap parameter. Adding interactivity to the animation can be provided by using javascript or java.

EXERCISE

1. What is masking?

2. Explain the use of timed swap option.

3. What is action script? Why do we need it?

4. **Choose the most appropriate option from those given below :**

    (1) Which of the following commands is used as a shortcut key to import image?

    (a) CTRL + a   (b) CTRL + m

    (c) CTRL + i   (d) CTRL + n

    (2) Which of the following colour represents the points used to change the size of the image?

    (a) green   (b) yellow

    (c) blue   (d) red

    (3) Which of the following amount value signifies that the layer is fully visible?

    (a) 1   (b) 0

    (c) 2   (d) -1

    (4) Which of the following is used to add actions as a part of interactivity in animation software?

    (a) action script   (b) java script

    (c) action programs   (d) java actions

    (5) Which of the following is a feature used to hide or reveal areas of a layer?

    (a) tweening   (b) masking

    (c) morphing   (d) encapsulation

    (6) The visibility of the images is handled by which of the following parameters?

    (a) blend, amount   (b) mask, amount

    (c) blend, import   (d) mask, blend

(7) Which of the following blend method is used to reveal or hide the object?

(a) composite   (b) alpha over

(c) straight onto   (d) straight

(8) Timed swap property adds which of the following sub parameters?

(a) up, down, time, length   (b) before, after, size, shape

(c) before, after, time, length   (d) top, bottoms, time, length

<div style="text-align:center">

LABORATORIES EXERCISES

</div>

1. Create a slideshow on the theme of "Khushboo Gujarat ki".

2. Create a slideshow on the theme of "Festivals of India". Use text to display name of each festival.

3. Insert an image showing scenery with sky and mountains. Using masking show the sunrise in the image.

◆