

PRACTICE 13: IMAGES



Picture This!

A picture's worth a thousand words, but it only takes a few lines of code to retrieve!

Learning Goals

- Enhance current skills in graphics on using images, including Flickr and ImageList for Small Basic.
- Gain experience on retrieving, displaying, and interacting with images.
- Learn how to fetch and utilize content from the Web.

Images

From your Facebook profile to the screensaver on your computer, we surrounded by images. In computer science, images can be grouped under graphics. Previously, you've created your own graphics using Small Basic's **GraphicWindows** library. In this lesson, you will learn about how to use images in your Small Basic Program using the **Flickr** and **ImageList** object.

Images are frequently being used, uploaded, and downloaded from the Internet. Flickr, Facebook, and photo-sharing websites have users loading images from their personal computer to their sites. Hospitality sites, like AirBnB and Yelp, allow users to upload images of their stay for travelers to peruse. Conversely, we download images, GIFs, and memes from Bing.

Flickr

Flickr shows us how we can retrieve images from the Internet. In Small Basic, the Flickr object has two operations: **GetPictureOfMoment** and **GetRandomPicture**. Let's look at each other these operations:

GetPictureofMoment—returns the URL for Flickr's picture of the moment



GetRandomPicture(string keyword)—returns the URL from Flickr using the keyword that you input.

Let's change the images on your desktop, and havewhere odd numbered pictures using the **GetPictureofMoment** and oddeven numbered pictures use **GetRandomPicture**:

```
img_counter = 0
pic = Flickr.GetRandomPicture("dog") // Set default
For (image = 1 to 10)
    If (img_counter % 2 == 0)
        pic = Flickr.GetRandomPicture("landscape")
    Else
        pic = Flickr.GetPictureofMoment()
    Desktop.SetWallPaper(pic)
    Program.Delay(1000)
EndFor
```

ImageList

Say we want to load our own images. Next we'll look at the **ImageList** object. This object has three operations:

LoadImage - loads the stored image from a local file or the Internet into the memory of your computer. Requires string input of the location of the image on your computer.

```
ImageList.LoadImage(imagePath)
```

GetHeightOfImage and **GetWidthOfImage** - returns the height and width of the stored image respectively. Requires string input of the name of the file.

Challenge: Make your own Photo Album



Using your knowledge of loops, conditionals, and images create your own picture book slideshow.

Here are some tips and reminders to help you start off your program:

1. You're going to need to keep your album in a loop.
2. If you are loading images from your personal computer, you can right-click the image and find its location URL under "Properties."
3. Think about how you can extract properties or manipulate the image, like resizing.
4. Try using both your own images and the images from Flickr, possibly using an if statement
5. Be creative about the theme!

Challenge: Create a Photo Collage

Using your knowledge of images and coordinates to create a photo collage using your own photos or photos from Flickr. Here's a few hints to get you started:

1. `GraphicsWindow.DrawResizedImage(image, x, y, width height)` can be helpful in drawing images with specific size and position.
2. Change background color, add text or borders to your collage. Think of designs that use different sizes of images. Maybe they can be overlapped. Be creative!

Discussion Questions

What are some other applications of using images?

What are some important properties of images?

What are the considerations when using images downloaded from the internet? (Hint: copyright)

Why is it better to return the URL of an image than the actual image? (Hint: think of storage space on the device)



When rendering (or drawing) an image, what do you need to consider to guarantee that the image is not cropped or distorted?

Additional Resources

- [Small Basic: Images](#)
<https://aka.ms/SB-Images>
- [Small Basic Flickr](#)
<https://aka.ms/SB-Flickr>
- [Small Basic ImageList](#)
<https://aka.ms/SB-ImageList>
- [SlideShow example](#)
<https://aka.ms/SB-SlideShowExample>
- [Small Basic: Desktop](#)
<https://aka.ms/SB-Desktop>

