Lab Assignment 8

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CODE

```
namespace FlickrViewer
{
   public partial class FlickrViewerForm : Form
   {
      // Use your Flickr API key here--you can get one at:
      // http://www.flickr.com/services/apps/create/apply
       private const string KEY = "19cb7365cfe33d8aa665a20fb5d705c3";
        //Flickr Viewer
        //Key:    19cb7365cfe33d8aa665a20fb5d705c3
        //Secret: 44b23122aa80cb8d

      // object used to invoke Flickr web service
      private WebClient flickrClient = new WebClient();

      Task<string> flickrTask = null; // Task<string> that queries Flickr

      public FlickrViewerForm()
      {
         InitializeComponent();
      } // end constructor

      // initiate asynchronous Flickr search query;
      // display results when query completes
      private async void searchButton_Click( object sender, EventArgs e )
      {
         // if flickrTask already running, prompt user
         if ( flickrTask != null &&
            flickrTask.Status != TaskStatus.RanToCompletion )
         {
            var result = MessageBox.Show(
      "Cancel the current Flickr search?",
      "Are you sure?", MessageBoxButtons.YesNo,
      MessageBoxIcon.Question );

   // determine whether user wants to cancel prior search
   if ( result == DialogResult.No )
       return;
   else
       flickrClient.CancelAsync(); // cancel current search
} // end if

// Flickr's web service URL for searches
var flickrURL = string.Format( "https://api.flickr.com/services" +
   "/rest/?method=flickr.photos.search&api_key={0}&tags={1}" +
   "&tag_mode=all&per_page=500&privacy_filter=1", KEY,
   inputTextBox.Text.Replace( " ", "," ) );

imagesListBox.DataSource = null; // remove prior data source
imagesListBox.Items.Clear(); // clear imagesListBox
pictureBox.Image = null; // clear pictureBox
imagesListBox.Items.Add( "Loading..." ); // display Loading...

try
{
   // invoke Flickr web service to search Flick with user's tags
   flickrTask =
      flickrClient.DownloadStringTaskAsync( flickrURL );

   // await flickrTask then parse results with XDocument and LINQ
   XDocument flickrXML = XDocument.Parse( await flickrTask );

   // gather information on all photos
   var flickrPhotos =
      from photo in flickrXML.Descendants( "photo" )
      let id = photo.Attribute( "id" ).Value
      let title = photo.Attribute( "title" ).Value
      let secret = photo.Attribute( "secret" ).Value
      let server = photo.Attribute( "server" ).Value
      let farm = photo.Attribute( "farm" ).Value
      select new FlickrResult
      {
         Title = title,
            URL = string.Format(
               "http://farm{0}.staticflickr.com/{1}/{2}_{3}.jpg",
               farm, server, id, secret )
         };
      imagesListBox.Items.Clear(); // clear imagesListBox
      // set ListBox properties only if results were found
      if ( flickrPhotos.Any() )
      {
         imagesListBox.DataSource = flickrPhotos.ToList();
         imagesListBox.DisplayMember = "Title";
      } // end if
      else // no matches were found
         imagesListBox.Items.Add( "No matches" );
   } // end try
   catch ( WebException )
   {
      // check whether Task failed
      if ( flickrTask.Status == TaskStatus.Faulted )
         MessageBox.Show( "Unable to get results from Flickr",
            "Flickr Error", MessageBoxButtons.OK,
            MessageBoxIcon.Error );
      imagesListBox.Items.Clear(); // clear imagesListBox
      imagesListBox.Items.Add( "Error occurred" );
   } // end catch
} // end method searchButton_Click

// display selected image
private async void imagesListBox_SelectedIndexChanged(
   object sender, EventArgs e )
{
   if ( imagesListBox.SelectedItem != null )
   {
      string selectedURL =
         ( ( FlickrResult ) imagesListBox.SelectedItem ).URL;

      // use WebClient to get selected image's bytes asynchronously
      WebClient imageClient = new WebClient();
      byte[] imageBytes = await imageClient.DownloadDataTaskAsync(
         selectedURL );

      // display downloaded image in pictureBox
      MemoryStream memoryStream = new MemoryStream( imageBytes );
```

```
            pictureBox.Image = Image.FromStream( memoryStream );
         } // end if
      } // end method imagesListBox_SelectedIndexChanged
   } // end class FlickrViewerForm
} // end namespace FlickrViewer
```