Updating Controls from Non-GUI Thread

Here are a couple methods for how to update form controls from a non-GUI thread.

Explicit Setter Method

The following is an example method that can be called by non-GUI thread.

It first checks if running on the GUI thread.

If not, it will invoke a delegate (onto the GUI thread) that calls the same method.

If on the GUI thread, execution drops to the method bottom that does the update, on the GUI thread.

```
private void Append_Update_Status(string msg)
{
   if (this.InvokeRequired)
   {
      this.Invoke((MethodInvoker)delegate
      {
         Append_Update_Status(msg);
      });

      return;
   }

   this.txtUpdateStatus.Text = this.txtUpdateStatus.Text + msg + "" + "\r\n";
}
```

Generic Property Helper

Here's a helper class that you can leverage, to update any Control property from a non-GUI thread.

It will perform the Invoke work for you.

```
private delegate void SetControlPropertyThreadSafeDelegate(Control control,
                                                           string propertyName,
                                                           object propertyValue);

public static void SetControlPropertyThreadSafe(Control control,
                                                 string propertyName,
                                                 object propertyValue)
{
   // See if we are not on the GUI thread.
   if (control.InvokeRequired)
   {
      // Passa message to the GUI thread to update the control.
      control.Invoke(new SetControlPropertyThreadSafeDelegate(SetControlPropertyThreadSafe),
                     new object[] { control, propertyName, propertyValue });
   }
   else
   {
      // We are on the GUI thread.

      // Update the control.
      control.GetType().InvokeMember(propertyName,
                                     System.Reflection.BindingFlags.SetProperty,
                                     null,
                                     control,
                                     new object[] { propertyValue });
   }
}
```

You can call it, like this:

```
static public void Update_Form_Status(string msg)
{
  FormHelpers.SetControlPropertyThreadSafe(formcontrol, nameof(Control.PropertyName), msg);
}
```

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