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using System;
using System.Collections;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Web;
using System.Web.SessionState;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Web.UI.HtmlControls;
using ChartDirector;

namespace CRA.clima.webapplications.gsrاد
{
    /// <summary>
    /// Descrizione di riepilogo per WebForm1.
    /// </summary>
    public class WebForm1 : System.Web.UI.Page
    {
        protected System.Web.UI.WebControls.TextBox TextBox1;
        protected System.Web.UI.WebControls.TextBox TextBox2;
        protected System.Web.UI.WebControls.TextBox TextBox3;
        protected System.Web.UI.WebControls.TextBox TextBox4;
        protected System.Web.UI.WebControls.TextBox TextBox5;
        protected System.Web.UI.WebControls.TextBox TextBox6;
        protected System.Web.UI.WebControls.TextBox TextBox7;
        protected System.Web.UI.WebControls.TextBox TextBox8;
        protected System.Web.UI.WebControls.TextBox TextBox9;
        protected System.Web.UI.WebControls.Label Label2;
        protected System.Web.UI.WebControls.TextBox TextBox10;
        protected System.Web.UI.WebControls.Label Label3;
        protected System.Web.UI.WebControls.Button Button1;
        protected System.Web.UI.WebControls.Label Label4;
        protected System.Web.UI.WebControls.Label Label5;
        protected System.Web.UI.WebControls.Label lblSlope;
        protected System.Web.UI.WebControls.Label lblAspect;
        protected System.Web.UI.WebControls.HyperLink HyperLink1;
        protected System.Web.UI.WebControls.HyperLink HyperLink2;
        protected System.Web.UI.WebControls.HyperLink HyperLink3;
        protected System.Web.UI.WebControls.Image Image1;
        protected ChartDirector.WebChartViewer WebChartViewer1;
    }
}
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protected System.Web.UI.WebControls.Label Label6;
protected System.Web.UI.WebControls.Label Label7;
protected System.Web.UI.WebControls.Label Label8;
protected System.Web.UI.WebControls.TextBox TextBox11;
protected System.Web.UI.WebControls.TextBox TextBox12;
protected System.Web.UI.WebControls.TextBox TextBox13;
protected System.Web.UI.WebControls.Label Label9;
protected System.Web.UI.WebControls.Button Button2;
protected ChartDirector.WebChartViewer WebChartViewer2;
protected System.Web.UI.WebControls.Label Label10;
protected System.Web.UI.WebControls.Label Label11;
protected System.Web.UI.WebControls.Label Label12;
protected System.Web.UI.WebControls.Button Button3;
protected System.Web.UI.WebControls.TextBox TextBox14;
protected System.Web.UI.WebControls.TextBox TextBox15;
protected System.Web.UI.WebControls.Label Label13;
protected System.Web.UI.WebControls.Label Label14;
protected System.Web.UI.WebControls.Label Label15;
protected System.Web.UI.WebControls.TextBox TextBox16;
protected System.Web.UI.WebControls.TextBox TextBox17;
protected System.Web.UI.WebControls.TextBox TextBox18;
protected System.Web.UI.WebControls.Label Label1;

private void Page_Load(object sender, System.EventArgs e)
{
    // Inserire qui il codice utente necessario per inizializzare la pagina.
}

#region Codice generato da Progettazione Web Form
override protected void OnInit(EventArgs e)
{
    //
    // CODEGEN: questa chiamata è richiesta da Progettazione Web Form ASP.NET.
    //
    InitializeComponent();
    base.OnInit(e);
}

/// <summary>
/// Metodo necessario per il supporto della finestra di progettazione. Non modificare
/// il contenuto del metodo con l'editor di codice.
/// </summary>

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private void InitializeComponent()
{
    this.Button1.Click += new System.EventHandler(this.Button1_Click);
    this.Button2.Click += new System.EventHandler(this.Button2_Click);
    this.Button3.Click += new System.EventHandler(this.Button3_Click);
    this.Load += new System.EventHandler(this.Page_Load);
}
#endregion

private void Button1_Click(object sender, System.EventArgs e)
{
    //instance of the web service class
    CRA.clima.webapplications.gsrاد.it.sipeaa.www.CRA_clima_GSRad g = new
        CRA.clima.webapplications.gsrاد.it.sipeaa.www.CRA_clima_GSRad();
    double[] elevation = new double[9];
    elevation[0] = double.Parse(TextBox1.Text);
    elevation[1] = double.Parse(TextBox2.Text);
    elevation[2] = double.Parse(TextBox3.Text);
    elevation[3] = double.Parse(TextBox4.Text);
    elevation[4] = double.Parse(TextBox5.Text);
    elevation[5] = double.Parse(TextBox6.Text);
    elevation[6] = double.Parse(TextBox7.Text);
    elevation[7] = double.Parse(TextBox8.Text);
    elevation[8] = double.Parse(TextBox9.Text);
    double cellSize = double.Parse(TextBox10.Text);
    lblSlope.Text = Math.Round(g.SlopeAspect(cellSize, elevation)[0], 1).ToString();
    lblAspect.Text = Math.Round(g.SlopeAspect(cellSize, elevation)[1], 1).ToString();
}

private void Button2_Click(object sender, System.EventArgs e)
{
    WebChartViewer1.Visible = false;
    WebChartViewer2.Visible = false;

    //instance of the web service class
    CRA.clima.webapplications.gsrاد.it.sipeaa.www.CRA_clima_GSRad g = new
        CRA.clima.webapplications.gsrاد.it.sipeaa.www.CRA_clima_GSRad();

    // data for the graph
    //the data for the line chart
    double[] dataY1 = new double[365];

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double[] dataY2 = new double[365];
double[] dataY3 = new double[365];
double[] dataX = new double[365];

double lat1 = double.Parse(TextBox11.Text);
double lat2 = double.Parse(TextBox12.Text);
double lat3 = double.Parse(TextBox13.Text);

int i = 0;
for (i=0; i<365; i++)
{
    // day of the year
    dataX[i] = i+1;
    // extraterrestrial rad
    dataY1[i] = g.ExtraterrestrialRadiationDaily(i+1, lat1);
    dataY2[i] = g.ExtraterrestrialRadiationDaily(i+1, lat2);
    dataY3[i] = g.ExtraterrestrialRadiationDaily(i+1, lat3);
}

//Create a XYChart object of size 500 x 256 pixels
XYChart c = new XYChart(500, 256);

//Set the plotarea and add grids
c.setPlotArea(50, 25, 440, 180, -1, -1, 0xc0c0c0, 0xc0c0c0, -1);

//Add titles to the top and bottom of the chart using 7.5pt Arial font.
//The text is white 0xffffffff on a deep blue 0x31319C background.
c.addTitle2(Chart.Top, "extraterrestrial solar radiation", "arial.ttf", 10,
    0xffffffff, 0x31319c);

//Add text in the plot area (top left corner of plotarea)
c.addText(50, 26, "daily", "arial.ttf", 10, 0x31319c).setAlignment(Chart.TopLeft);

//Use 10 pts Arial as the y axis label font
c.yAxis().setLabelStyle("", 7.5);
c.yAxis().setTitle("SRad (MJ m-2 d-1)", "arial.ttf", 10);

//Use 7.5 pts Arial as the x axis label font
c.xAxis().setLabelStyle("", 7.5);
c.xAxis().setTitle("day of the year", "arial.ttf", 10);

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//set labels
c.xAxis().setLinearScale(1,365,30);

//Add a red diamonds layer to the chart
c.addLineLayer(dataY1,0xc00000, TextBox11.Text);
c.addLineLayer(dataY2,0x31319c, TextBox12.Text);
c.addLineLayer(dataY3,0x40cf40, TextBox13.Text);

//output the chart
WebChartViewer1.Image = c.makeWebImage(1);

//include tool tip for the chart
WebChartViewer1.ImageMap = c.getHTMLImageMap("clickable", "",
        "title='GSR hourly data'");

WebChartViewer1.Visible = true;
}

private void Button3_Click(object sender, System.EventArgs e)
{
    WebChartViewer2.Visible = false;
    WebChartViewer1.Visible = false;

    //instance of the web service class
    CRA.clima.webapplications.gsrاد.it.sipeaa.www.CRA_clima_GSRاد g = new
        CRA.clima.webapplications.gsrاد.it.sipeaa.www.CRA_clima_GSRاد();

    double lat;
    int DOY;
    double[] extraRadHourly = new double[24];
    double gsrاد;
    double extraRad;
    lat = double.Parse(TextBox15.Text);
    DOY = int.Parse(TextBox14.Text);
    double rangeTD = double.Parse(TextBox16.Text);
    double rangeTM = double.Parse(TextBox17.Text);
    double BC_b = double.Parse(TextBox18.Text);

    //extraterrestrialRadiation
    extraRad = g.ExtraterrestrialRadiationDaily(DOY, lat);
    extraRadHourly = g.ExtraterrestrialRadiationHourly(DOY, lat);
    //GSRاد

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gsrad = g.GlobalSolarRadiationBristowCampbell(1, BC_b,rangeTD, rangeTM, 0.75, extraRad);

// data for the graph
//the data for the line chart
double[] dataY = new double[24];
double[] dataX = new double[24];
dataY = g.HourlyGlobalSolarRadiationDaily(gsrاد, extraRadHourly, extraRad);

int i = 0;
for (i=0; i<23; i++)
{
    dataX[i] = i+1;
}

//Create a XYChart object of size 500 x 256 pixels
XYChart c = new XYChart(500, 256);

//Set the plotarea and add grids
c.setPlotArea(50, 25, 440, 180, -1, -1, 0xc0c0c0, 0xc0c0c0, -1);

//Add titles to the top and bottom of the chart using 7.5pt Arial font.
//The text is white 0xffffffff on a deep blue 0x31319C background.
c.addTitle2(Chart.Top, "hourly values of global solar radiation", "arial.ttf", 10,
    0xffffffff, 0x31319c);

//Add text in the plot area (top left corner of plotarea)
c.addText(50, 26, "hourly", "arial.ttf", 10, 0x31319C).setAlignment(Chart.TopLeft);

//Use 10 pts Arial as the y axis label font
c.yAxis().setLabelStyle("", 7.5);
c.yAxis().setTitle("GSRad (MJ m-2 h-1)", "arial.ttf", 10);

//Use 7.5 pts Arial as the x axis label font
c.xAxis().setLabelStyle("", 7.5);
c.xAxis().setTitle("hour", "arial.ttf", 10);

//set labels
c.xAxis().setLinearScale(0,23,6);

//Add a red diamonds layer to the chart
c.addScatterLayer(dataX, dataY,"hourlyGSRad",
    Chart.DiamondSymbol, 8, 0xc00000);

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//output the chart
WebChartViewer2.Image = c.makeWebImage(1);

//include tool tip for the chart
WebChartViewer2.ImageMap = c.getHTMLImageMap("clickable", "",
    "title='GSR hourly data'");

WebChartViewer2.Visible = true;
```

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}
```

```
}
```

```
}
```