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public ILayer m_pCurrentLayer; // 定义当前选中的图层对象
// 列表框选择事件
private void comboBoxLayer_SelectedIndexChanged(object sender, EventArgs e)
{
    // 遍历所有图层, 查找与列表框选择项匹配的图层
    for (int i = 0; i < axMapControl1.LayerCount; i++)
        if (axMapControl1.get_Layer(i).Name == comboBoxLayer.Text)
        {
            // 更新当前选中的图层
            m_pCurrentLayer = axMapControl1.get_Layer(i);
            IFeatureLayer pLyr = (IFeatureLayer)m_pCurrentLayer;

            comboBoxField1.Items.Clear(); // 清空字段列表框
            // 遍历当前图层的所有字段, 添加字段名到列表框
            for (int j = 0; j < pLyr.FeatureClass.Fields.FieldCount; j++)
            {
                comboBoxField1.Items.Add(pLyr.FeatureClass.Fields.get_Field(j).Name);
            }
            comboBoxField1.SelectedIndex = 0; // 默认选择第一个字段
        }
    axMapControl1.Focus(); // 设置地图控件获得焦点
}
// 复杂标注功能
private void btnComplexAnnotation_Click(object sender, EventArgs e)
{
    // 检查是否有选中的图层
    if (m_pCurrentLayer == null)
    {
        MessageBox.Show("当前地图中没有地图! 请检查后再试", "提示");
        return;
    }
    IGeoFeatureLayer pGeoFeat = (IGeoFeatureLayer)m_pCurrentLayer;
    // 对点图层进行标注
    if (pGeoFeat.FeatureClass.ShapeType == esriGeometryType.esriGeometryPoint)
    {
        IPointPlacementPriorities pPtPlaceProp = new PointPlacementPriorities();
        pPtPlaceProp.AboveCenter = 0; pPtPlaceProp.AboveLeft = 0; pPtPlaceProp.AboveRight = 1;
        pPtPlaceProp.BelowCenter = 0; pPtPlaceProp.BelowLeft = 0; pPtPlaceProp.BelowRight = 2;
        pPtPlaceProp.CenterLeft = 4; pPtPlaceProp.CenterRight = 3;

        IBasicOverposterLayerProperties pBasicProp = new BasicOverposterLayerProperties();
        pBasicProp.FeatureType = esriBasicOverposterFeatureType.esriOverposterPoint;
        pBasicProp.PointPlacementOnTop = false;
        pBasicProp.PointPlacementPriorities = pPtPlaceProp;
    }
}

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        ILabelEngineLayerProperties pLabelProp = (ILabelEngineLayerProperties)new LabelEngineLayer
Properties();
        pLabelProp.BasicOverposterLayerProperties = pBasicProp;
        pLabelProp.Expression = "[" + comboBoxField1.Text + "]";
        pLabelProp.IsExpressionSimple = true;
        IAnnotateLayerProperties pAnnLyrProp = (IAnnotateLayerProperties)pLabelProp;
        IAnnotateLayerPropertiesCollection pAnnLyrPropCol = pGeoFeat.AnnotationProperties;
        pAnnLyrPropCol.Clear(); // 清空现有标注属性
        pAnnLyrPropCol.Add(pAnnLyrProp); // 添加新的标注属性
        pGeoFeat.DisplayAnnotation = true; // 启用标注显示
    }
    // 对线图层进行标注
    if (pGeoFeat.FeatureClass.ShapeType == esriGeometryType.esriGeometryPolyline)
    {
        ILineLabelPosition pLnPosition = new LineLabelPosition();
        pLnPosition.Horizontal = false; pLnPosition.Above = true;
        pLnPosition.Below = true; pLnPosition.AtStart = false;
        pLnPosition.InLine = true; pLnPosition.Left = false;
        pLnPosition.OnTop = true; pLnPosition.Right = false;
        pLnPosition.AtEnd = false; pLnPosition.Parallel = true;
        pLnPosition.Perpendicular = false; pLnPosition.ProduceCurvedLabels = false;

        IBasicOverposterLayerProperties pBasicProp = new BasicOverposterLayerProperties();
        pBasicProp.FeatureType = esriBasicOverposterFeatureType.esriOverposterPolyline;
        pBasicProp.LineLabelPosition = pLnPosition;

        ILabelEngineLayerProperties pLabelProp = (ILabelEngineLayerProperties)new LabelEngineLayer
Properties();
        pLabelProp.BasicOverposterLayerProperties = pBasicProp;
        pLabelProp.Expression = "[" + comboBoxField1.Text + "]";
        pLabelProp.IsExpressionSimple = true;

        IAnnotateLayerProperties pAnnLyrProp = (IAnnotateLayerProperties)pLabelProp;
        IAnnotateLayerPropertiesCollection pAnnLyrPropCol = pGeoFeat.AnnotationProperties;
        pAnnLyrPropCol.Clear(); // 清空现有标注属性
        pAnnLyrPropCol.Add(pAnnLyrProp); // 添加新的标注属性
        pGeoFeat.DisplayAnnotation = true; // 启用标注显示
    }
    // 对多边形图层进行标注

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if (pGeoFeat.FeatureClass.ShapeType == esriGeometryType.esriGeometryPolygon)
{
    IPointPlacementPriorities pPtPlaceProp = new PointPlacementPriorities();
    pPtPlaceProp.AboveCenter = 0; pPtPlaceProp.AboveLeft = 0; pPtPlaceProp.AboveRight = 1;
    pPtPlaceProp.BelowCenter = 0; pPtPlaceProp.BelowLeft = 0; pPtPlaceProp.BelowRight = 2;
    pPtPlaceProp.CenterLeft = 4; pPtPlaceProp.CenterRight = 3;

    IBasicOverposterLayerProperties pBasicProp = new BasicOverposterLayerProperties();
    pBasicProp.FeatureType = esriBasicOverposterFeatureType.esriOverposterPolygon;
    pBasicProp.PointPlacementOnTop = false;
    pBasicProp.PointPlacementPriorities = pPtPlaceProp;

    ILabelEngineLayerProperties pLabelProp = (ILabelEngineLayerProperties)new LabelEngineLayer
Properties();
    pLabelProp.BasicOverposterLayerProperties = pBasicProp;
    pLabelProp.Expression = "[" + comboBoxField1.Text + "]";
    pLabelProp.IsExpressionSimple = true;

    IAnnotateLayerProperties pAnnLyrProp = (IAnnotateLayerProperties)pLabelProp;
    IAnnotateLayerPropertiesCollection pAnnLyrPropCol = pGeoFeat.AnnotationProperties;
    pAnnLyrPropCol.Clear(); // 清空现有标注属性
    pAnnLyrPropCol.Add(pAnnLyrProp); // 添加新的标注属性
    pGeoFeat.DisplayAnnotation = true; // 启用标注显示
}
axMapControl1.Refresh(); // 刷新地图控件
}
// 清除注记
private void btnClearAnnotation_Click(object sender, EventArgs e)
{
    // 遍历地图控件中的所有图层
    for (int i = 0; i < axMapControl1.LayerCount; i++)
    {
        IGeoFeatureLayer pLayer = (IGeoFeatureLayer)this.axMapControl1.get_Layer(i);
        // 如果图层启用了注记, 则关闭注记显示
        if (pLayer.DisplayAnnotation == true)
            pLayer.DisplayAnnotation = false;
    }
    axMapControl1.Refresh(); // 刷新地图控件
}

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