Areas and Ranges

ExcelApplication offers several methods that allow for the programmatic creation of areas and ranges.

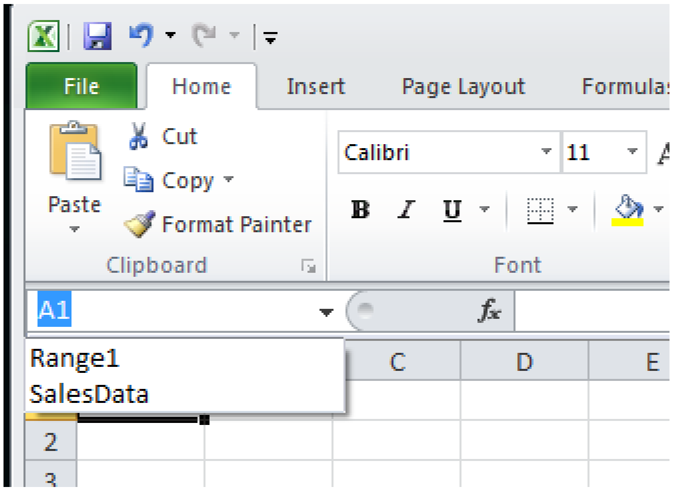
An **Area** object represents a rectangular set of cells. To create an Area object, call one of the following methods:

- Worksheet.CreateArea(Int32, Int32, Int32, Int32) - This method takes the 0-based indexes of the area's first row and column, and the number of rows and columns to include in the area.
- Worksheet.CreateArea(String) - This method takes a formula representing the area, for example, "=A1:G10". The formula is relative to the current worksheet.
- Worksheet.GetColumnProperties(Int32) - Get and edit column properties.
- Worksheet.GetRowProperties(Int32) - Get and edit row properties.

A Range is a collection of areas. The areas in a range may be non-adjacent, and a range can include areas in different worksheets. To create a Range (without a name), call one of the following methods:

- Workbook.CreateRange(String) - This method takes a formula representing the range, for example "=Sheet1\!A1:G10" defines a range containing one area and "=Sheet1\!B$12:$H$21 Sheet1\!$F$18:$K$29 Sheet1\!D$16:$M$21" defines a range containing three areas. The formula must be three-dimensional (i.e., it must specify the sheet or sheets).
- Workbook.CreateRange(Area()) - This method takes an array of Area objects representing the range.
- Worksheet.CreateRange(String) - This method takes a formula representing the range, for example "=Sheet1\!A1:G10" defines a range containing one area and "=Sheet1\!B$12:$H$21 Sheet1\!$F$18:$K$29 Sheet1\!D$16:$M$21" defines a range containing three areas. The formula must be three-dimensional (i.e., it must specify the sheet or sheets).

A **NamedRange** is stored in ExcelWriter's NamedRanges collections (Workbook.NamedRanges and Worksheet.NamedRanges) and is accessible after the workbook is saved. In Excel, named ranges are listed in the name box above the top-left corner of the worksheet.



To create a named range, call one of the following methods:

- Workbook.CreateNamedRange(String, String) - This method takes a formula representing the range, for example "=Sheet1\!A1:G10", and a name for the range. The formula must be three-dimensional (i.e., it must specify the sheet or sheets).
- Workbook.CreateNamedRange(Area(), String) - This method takes an array of [Area] objects representing the range and a name for the range.
- Worksheet.CreateNamedRange(Int32, Int32, Int32, Int32, String) - This method returns a named range that contains one rectangular area.
- Worksheet.CreateNamedRange(String, String) - This method takes a formula representing the range, for example "=Sheet1\!A1:G10", and a name for the range. The formula must be three-dimensional (i.e., it must specify the sheet or sheets).

Importing Data to an Area

You can use an area as a set of target cells for imported data. The Area object's ImportData method allows you to import a block of data from a rectangular array or from an ADO.NET DataTable, DataView, or DataReader. To import data to an area:

1. Create an area in a worksheet.

```
ExcelApplication xla = new ExcelApplication();
Workbook wb = xla.Create();
Worksheet ws = wb.Worksheets[0];
Area targetArea = ws.CreateArea(4, 4, 15, 6);
```

2. Get a rectangular array, DataView, DataReader, or - as in the following example - DataTable to use as the data source.

```
// ADO.NET code to get a DataTable from a query
DataTable employeeDt = new DataTable();
using(SqlConnection conn = new SqlConnection(connString))
{
 string employeeSQL = "SELECT FirstName + ' ' + LastName As Name " +
     "FROM Employee";
 SqlCommand cmdEmployee = new SqlCommand(employeeSQL, conn);
 SqlDataAdapter adptEmployee = new SqlDataAdapter(cmdEmployee);
 adptEmployee.Fill(employeeDt);
}
```

3. Call ImportData to import the data. The method returns a new area containing the imported values.

```
importedValues = targetArea.ImportData(employeeDt);
```

For more information, see Importing Data.

Applying Formatting to Areas and Ranges

Defined styles can be assigned to cells, rows, columns, areas, and ranges. To assign a style to a range or area:

1. Create a style.

```
ExcelApplication xla = new ExcelApplication();
Workbook wb = xla.Create();
Worksheet ws = wb.Worksheets[0];
Style styleTotalRow = wb.CreateStyle();
styleTotalRow.NumberFormat = "$#.##0";
styleTotalRow.Font.Italic = true;
styleTotalRow.Font.Bold = true;
```

2. # Define an area or range, for example:

```
Area areaTotalRow = ws.CreateArea(24, 0, 1, 3);
```

3. Set or apply the style.

```
areaTotalRow.Style = styleTotalRow;
```

For more information on setting and applying styles, see Styles.