**Mitsubishi Electric - Software Developer Candidate exercise**

Develop a **C# Console Application** for a simple drawing app that renders different shapes known as widgets on a canvas. A widget represents a shape that can be drawn on a canvas within the application. The system will comprise of different widgets, each able to render their unique features.

**Widgets**

Widgets have the following attributes:

* Name - a string giving a widget a unique name e.g. square, circle.
* X Coordinate - an integer that horizontally positioning the widget.
* Y Coordinate - an integer that horizontally positioning the widget.
* Size - an integer value that determines a simple size value for the widget.

Widgets also need to provide a Draw() method which can handle how a particular widget renders itself.

**Shapes**

The application needs to provide the following shapes derived from widgets described above:

**Square**

* Positioned using X and Y coordinates.
* Has its own size.
* Renders size and X/Y positions via its Draw method

**Rectangle**

* Positioned using X and Y coordinates.
* Has its own size.
* Has height and width attributes unique to rectangles.
* Renders size, height, width and X/Y positions via its Draw method

**Circle**

* Positioned using X and Y coordinates.
* Has its own size.
* Renders size, and X/Y position via its Draw method

**Ellipse**

* Positioned using X and Y coordinates.
* Has its own size.
* Has a horizontal and vertical diameter unique to ellipses.
* Renders size, horizontal diameter, vertical diameter and X/Y positions via its Draw method

**Text Box**

* Derives from rectangle.
* Has a background colour.
* Provides a Text attribute allowing string data to be set as the rendered content of the rectangle.
* Renders size, height, width, X/Y positions, background colour and text content via its Draw method.
* If no text content has been supplied, the background colour defaults to red when the Draw method provides background colour as part of its output.

**Canvas**

The application will provide a Canvas for displaying the rendered content of widgets which will have:

* Ability to add multiple widgets to the canvas so each can be rendered according to the unique rendering of each widget.
* Ability to print to the console the rendered output of each widget added to the canvas.

**As this is a simple Console Application, you are not expected to render any graphical output or write code to actually draw the widgets. Simple text displaying the widget output will suffice, for example:**

Square (x:10, y:10) height=50 width=50

When complete, please either send us a link to a public repository such as Github containing your solution, or send us a zip file containing your solution as a Visual Studio project. Please remove any compiled output from your project such as .exe and .dll files as most email virus scanners will block this content.