Dynamic Line Chart

Author： Yun Shi

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website： http://blog.csdn.net/whshiyun

https://github.com/whshiyun

Email： whshiyungift@gmail.com

2999049@qq.com

The Dynamic Line Chart is a GUI control, which can draw a line chart in real-time with the input data, and it can be used easily as well.

Features:

- **Draw Line Chart：** Curves can be plotted in real time based on continuously entered data. You can draw multiple Curves simultaneously, each curve can be hidden or displayed independently.

- **Chart Zooming：** The Line Chart can be zoomed through the mouse wheel.

- **Chart Moving：** You can move the chart by dragging the mouse, and view the various parts of the chart.

Control Window:

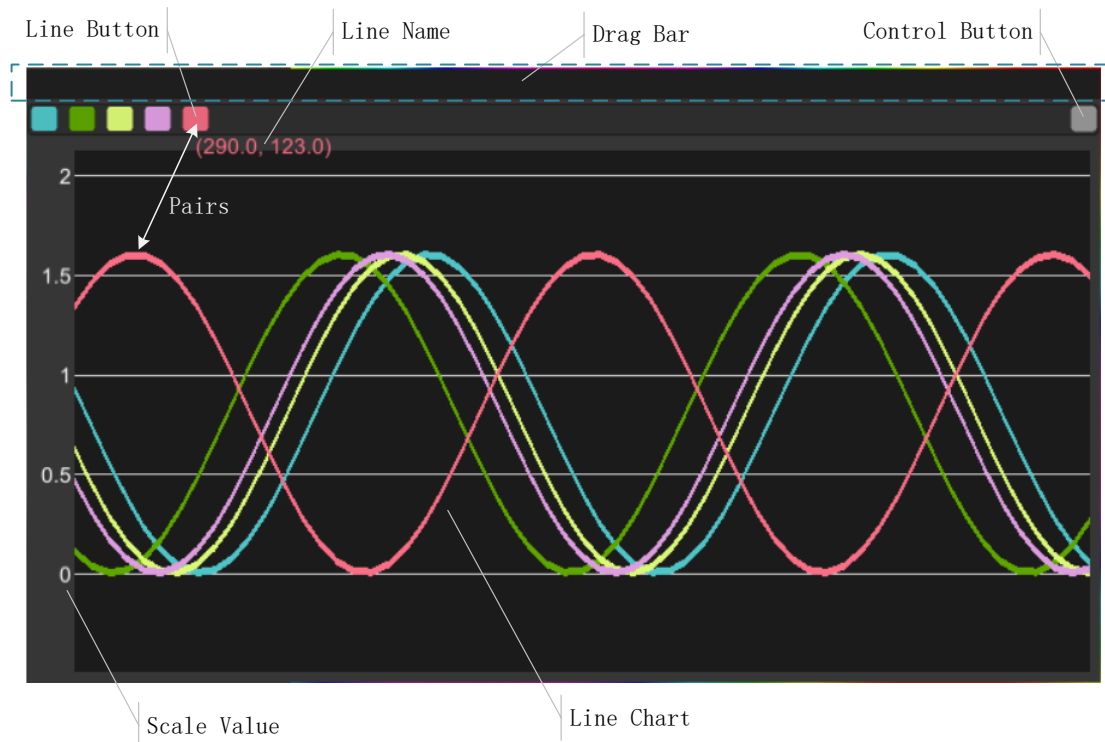The Dynamic Line Chart control is shown in Figure 1.

Figure 1 Dynamic Line Chart control

- **Line Chart：** The line chart plotted according to the input data. The value of the Y axis is the value of the input data, and the value of the X axis is automatically generated by the control in the order of each point, the larger the serial number, the greater the value of the X axis. It is calculated as: x = sn * d, where the "sn" is the ordinal number of the point, and the "d" is a configurable constant.

- **Graduation Value：** The corresponding values for each coordinate scale of the Y axis.

- **Line Button：** Correspond with the Line chart one by one, and by clicking the left mouse button to control each Line Chart display or hide. If clicking the left mouse button while pressing the control key, then the Line chart will be deleted.

- **Line Name：** The name of line chart, specified when creating this Line Chart. When the mouse hovering over the Line Button, the line name of the Line Chart will be displayed in the lower right corner of the Line Button.

- **Drag Bar：** Hold the left mouse button on the Drag Bar allows the control to follow the mouse. Drag Bar is automatically hidden when the parent of the control is not a Canvas.

- **Control Button：** You can switch the parent of the control by clicking on Control Button. If the current parent of the control is not Canvas, then the parent of the control will be set to Canvas after clicking, if the current parent of the control is Canvas, then click to set the parent value of the control as the original parent.

How to use:

You can use this control as the same as a common UI control, before using this control, you need to ensure that at least one UI Canvas in the scene, and then by clicking GameObject->UI->DataDiagram in the MenuItem, you can create a Dynamic Line Chart control in your Canvas. As shown in Figure 2.
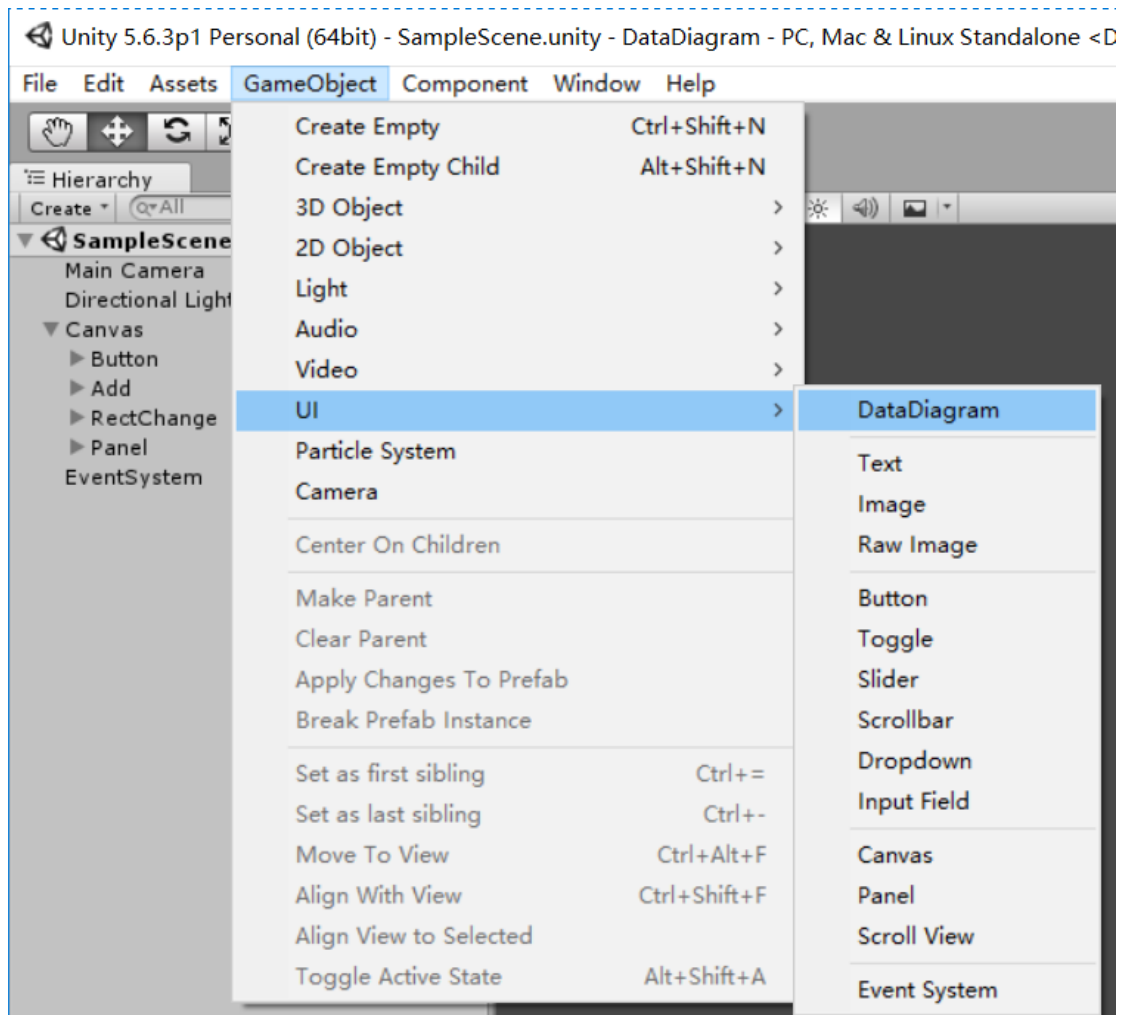
Figure 2 Create a Dynamic Line Chart control 1

Can also be in the Hierarchy, right-click a UI control, in the pop-up menu, select UI-> DataDiagram, then you can create a dynamic curve control, As shown in Figure 3.
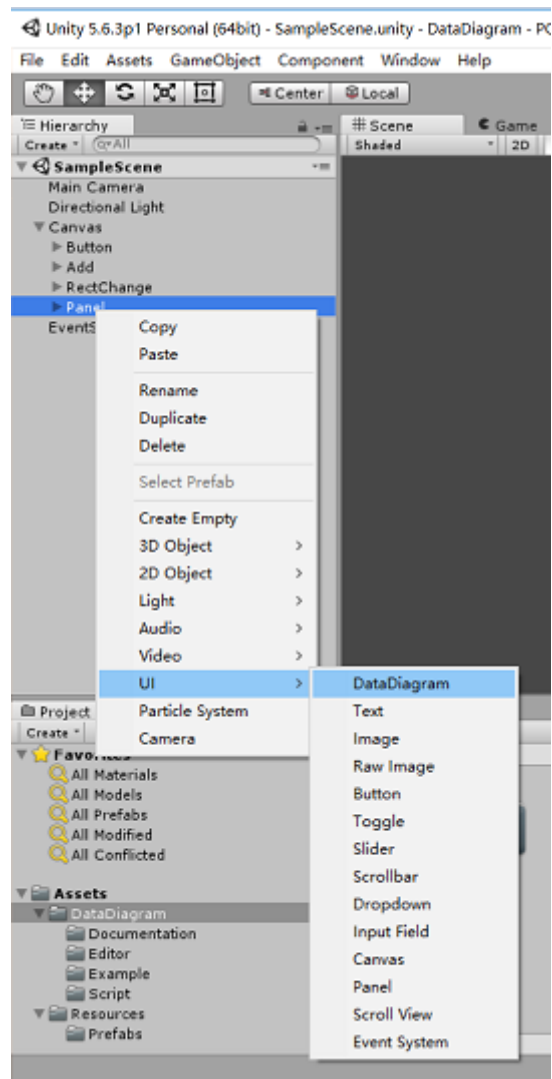
Figure 3 Create a Dynamic Line Chart control 2

This control has five parameters can be set in the Inspector interface, as shown in Figure 4.
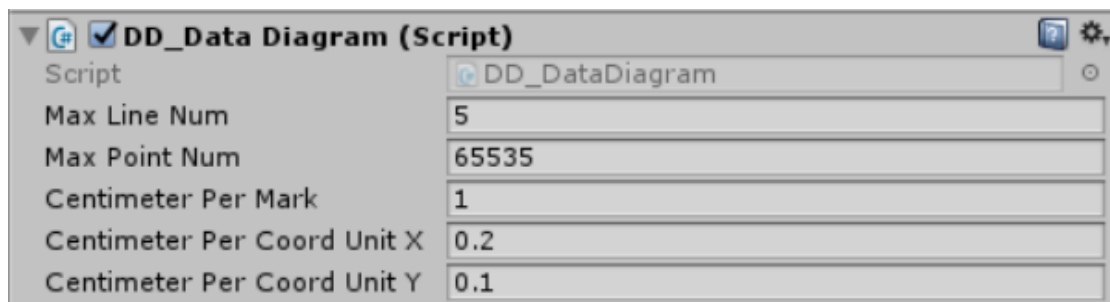

Figure 4 Inspector interface

- **Max Line Num ：** The maximum number of Line Chart that can be displayed.

- **Max Point Num ：** The maximum number of the input data that can be cached per Line Chart， if the value is exceeded, the oldest value will be removed from the Line Chart.

- **Centimeter Per Mark ：** The distance between two scales when drawing the coordinate scale.

- **Centimeter Per Coord Unit x ：** Conversion coefficient of x-axis data value and coordinate scale in initial state. You can change the Scale Value for the x-axis by changing this value.

- **Centimeter Per Coord Unit y ：** Conversion coefficient of y-axis data value and coordinate scale in initial state. You can change the Scale Value for the y-axis by changing this value.

Software Interface:

- **DD_DataDiagram.AddLine(string name, Color color)**

  - **Function :** Create a new Line Chart.

  - **Return value :** This method will return a GameObject type variable, which is the newly added Line Chart's entity.

  - **Name :** The name of the new Line Chart.

  - **Color :** The color of the new Line Chart and Line Button.

- **DD_DataDiagram.InputPoint(GameObject line, Vector2 point)**

  - **Function :** Input a data to the specified Line Chart.

  - **Return value :** None.

➢ **Line :** The specified Line Chart entity, as returned by the AddLine () method.

➢ **Point :** point.x is the scaling value of the curve on the x-axis, which is 1 if there is no scaling, point.y is the input data value.

- **DD_DataDiagram.PreDestroyLineEvent**

There is an event will be generated before a Line Chart is destroyed, and the event will indicate which Line Chart will be destroyed.