

```
<< Graphics`Spline`

resample[points_, samples_] :=
  Part[points, Map[Round, Range[1, Length[points],  $\frac{\text{Length}[\text{points}] - 1}{\text{samples} - 1}$ ]]]
```

■ Initialize

```
Needs["GUIKit`"]

userInputWindow = Widget["Panel",
  {Widget["MathPanel",
    {"preferredSize" → Widget["Dimension", {"width" → 300, "height" → 300}],

    BindEvent[
      "mouseDragged",

      Script[
        mouseDraggedFunc[
          PropertyValue[{"#", "x"}], PropertyValue[{"#", "y"}]];
        ]
      ],

      BindEvent["endModal", Script[returnPts]],
    },

    Name → "canvas",
    WidgetLayout → {"Stretching" → {Maximize, Maximize}}
  ],

  Script[
    pts = {{0, 0}};

    createGraphics[] :=
      If[
        WidgetReference["g"] === Null,

        InvokeMethod[
          {"canvas", "createImage"},
          PropertyValue[{"canvas", "width"}],
          PropertyValue[{"canvas", "height"}],
          Name -> "offscreen"
        ];

        PropertyValue[{"offscreen", "graphics"}, Name -> "g"];
        SetPropertyValue[{"g", "color"}, Widget["Color", InitialArguments → {0, 0, 0}]];
      ];

    mouseDraggedFunc[x_, y_] := (
      createGraphics[];
```

```

        InvokeMethod[{"g", "drawLine"}, pts[[-1, 1]], pts[[-1, 2]], x, y];
        SetPropertyValue[{"canvas", "image"}, WidgetReference["offscreen"]];
        InvokeMethod[{"canvas", "repaintNow"}];
        AppendTo[pts, {x, y}];
        (*Print["{"x", "y"}"];*)
    );

    returnPts := pts;

]
}
];

openInputWindow[] := GUIRunModal[userInputWindow];

```

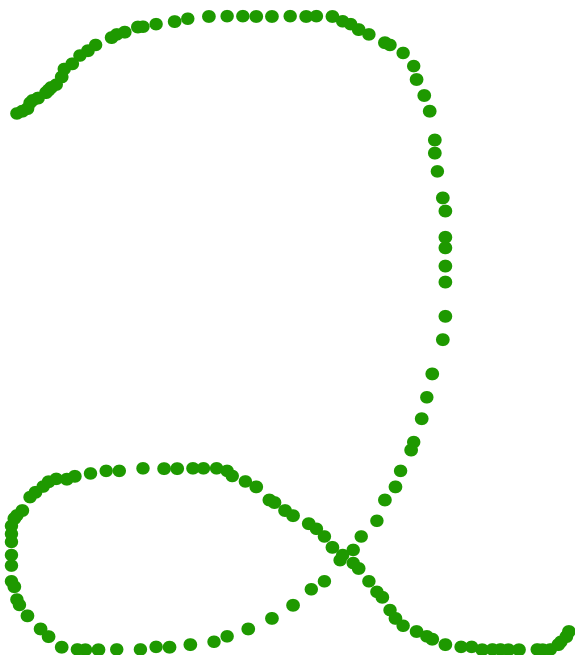
■ Evaluate

```

points = openInputWindow[]; points = {#, -#2} & @@@ points;

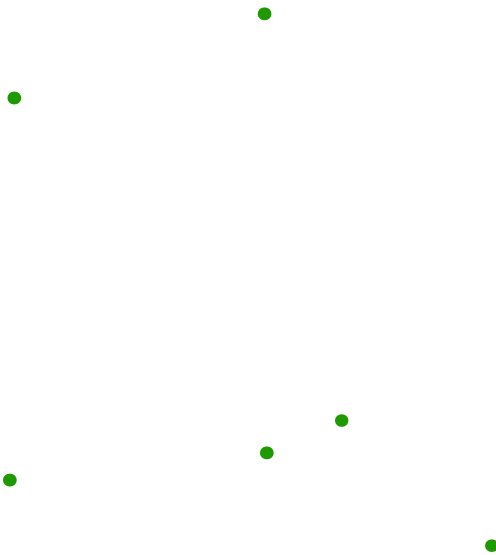
Show[Graphics[{Hue[0.3, 1, .6], AbsolutePointSize[6], Point /@ Rest[points]}],
     PlotRange → All, AspectRatio → Automatic]

```



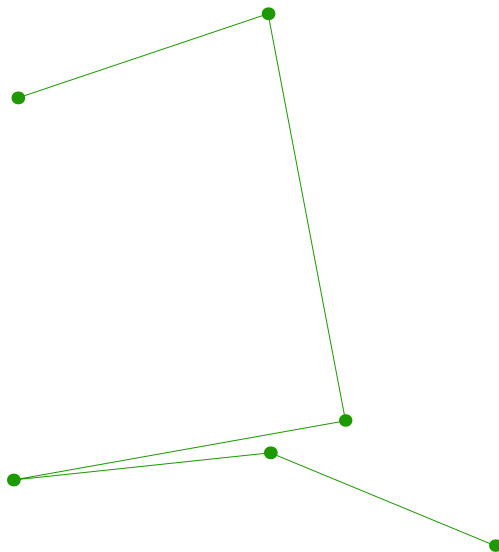
- Graphics -

```
Show[
  Graphics[{Hue[0.3, 1, .6], AbsolutePointSize[6], Point /@ resample[Rest[points], 6]}],
  PlotRange -> All, AspectRatio -> Automatic]
```



- Graphics -

```
Show[Graphics[{Hue[0.3, 1, .6], AbsolutePointSize[6], Point /@ resample[Rest[points], 6],
  Line[resample[Rest[points], 6]]}], PlotRange -> All, AspectRatio -> Automatic]
```



- Graphics -

```
resample[Rest[points], 6] // MatrixForm
```

$$\begin{pmatrix} 58 & -64 \\ 168 & -27 \\ 202 & -206 \\ 56 & -232 \\ 169 & -220 \\ 268 & -261 \end{pmatrix}$$