In[◦]:=

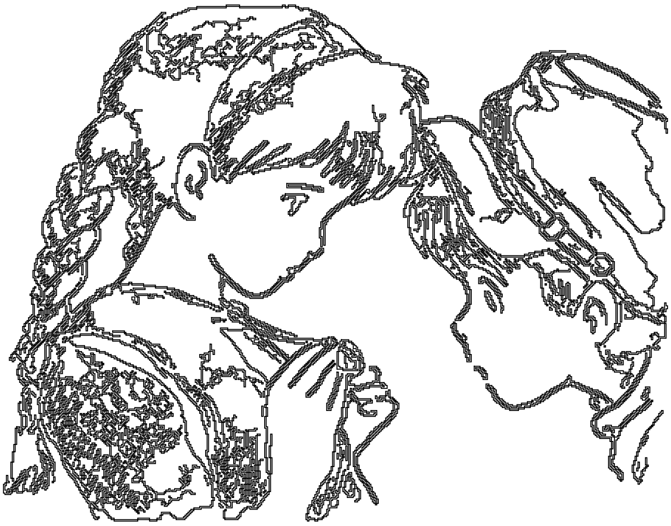
```
img = Import["E:\\MISC\\Image\\99fb3cad6e3566c962ab10c969ae6720.jpg"]
      ⌊导入      ⌊自然常数     ⌊图像
```

Out[◦]=

In[◦]:=

```
el = ImageMeasurements[EdgeDetect[img], "Contours"];
     ⌊图像度量                ⌊边缘检测              ⌊等高线
Graphics[el]
⌊图形
```

Out[◦]=



In[◦]:=

```
dft[c_, n_] := (z = Fourier[Complex @@@ c];
                    ⌊傅立叶   ⌊复数
  k = Ceiling[Min[Length[c] / 2, n] / 2];
    ⌊向上取整 ⌊…  ⌊长度
  z[[k ;; -k]] = 0;
  rc = ReIm@InverseFourier[z];
       ⌊实…  ⌊离散傅立叶逆变换
  Append[rc, rc[[1]]])
  ⌊追加
```

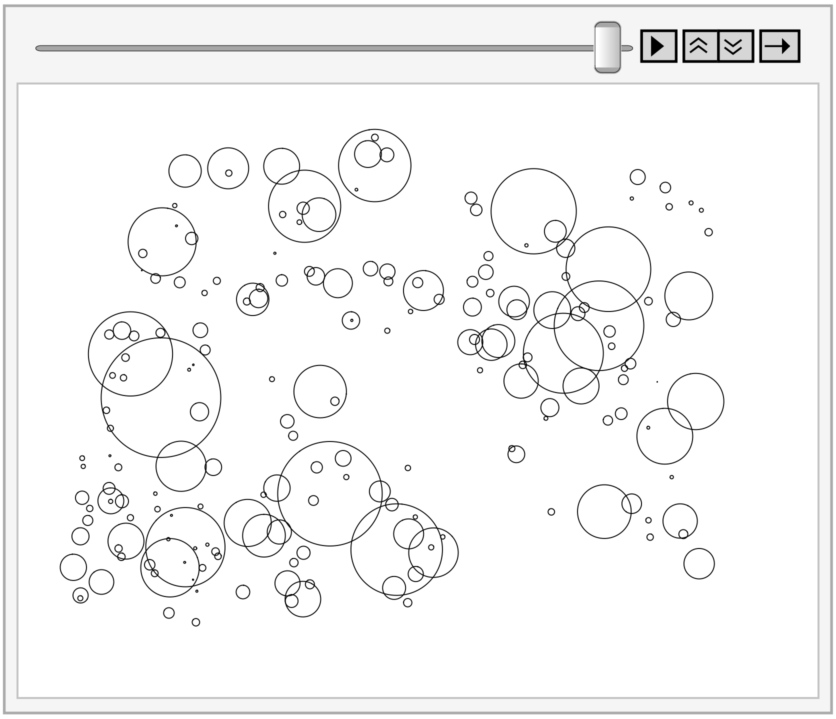
```
In[∘]:=  dftLine[lines_, n_] := Line[dft[#[[1]], n] & /@ lines]
                                 线段
```

预先计算从3到40步长为1的DFT变换

```
In[∘]:=  tn = Table[Select[el, Length@#[[1]] > 30 &] ~dftLine~ n, {n, 3, 40, 1}];
              表格   选择           长度
```

```
In[∘]:=  animation = ListAnimate@(Graphics /@ tn)
                     列表帧动画      图形
```

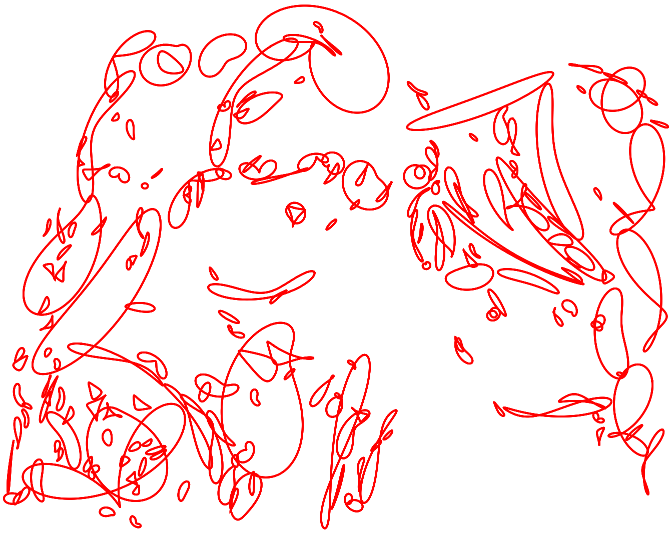
Out[∘]=



```
In[∘]:=  Export["E:\\Mathematica\\DFT.gif", Graphics /@ tn]
         导出    自然常数                        图形
```

```
Out[∘]=
         E:\Mathematica\DFT.gif
```

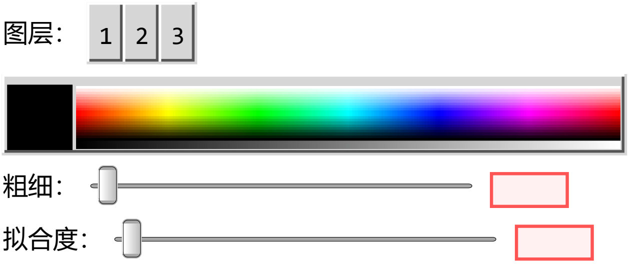
```
In[◦]:=  m = {{Red, 1, 6}, {Red, 1, 6}, {Red, 1, 6}}
               └红色          └红色          └红色
         rl = {#⟦1⟧, AbsoluteThickness[#⟦2⟧], tn⟦(#⟦3⟧ - 3) + 1⟧} & /@m;
                     └绝对粗细
         Graphics@rl
         └图形
Out[◦]=
         {{🟥, 1, 6}, {🟥, 1, 6}, {🟥, 1, 6}}
Out[◦]=
```



In[ ]:=

```
Column[{Labeled[SetterBar[Dynamic[layer, (layer = #;
⌊列     ⌊标记    ⌊设置按钮条  ⌊动态
       {color, thickness, n} = m〚#〛) &], {1, 2, 3}], "图层： ", Left],
                                                      ⌊左
  ColorSlider[
  ⌊颜色滑动条
   Dynamic[color, (m〚layer, 1〛 = rl〚layer, 1〛 = color = #) &], ImageSize → Large],
   ⌊动态                                                ⌊图像尺寸      ⌊大
  Labeled[Slider[Dynamic[thickness, (rl〚layer, 2〛 = AbsoluteThickness[#];
  ⌊标记    ⌊滑动条 ⌊动态                          ⌊绝对粗细
       m〚layer, 2〛 = #;
       thickness = #) &], {0.5, 12}, Appearance → "Labeled"], "粗细： ", Left],
                                ⌊外观        ⌊标记             ⌊左
  Labeled[Slider[Dynamic[n, (rl〚layer, 3〛 = tn〚# - 2〛;
  ⌊标记    ⌊滑动条 ⌊动态
       m〚layer, 3〛 = #;
       n = #) &], {3, 40, 1}, Appearance → "Labeled"], "拟合度： ", Left]}]
                         ⌊外观        ⌊标记               ⌊左
Dynamic[Graphics@rl]
⌊动态     ⌊图形
Dynamic[m]
⌊动态
```

Out[ ]=



图层： 1 2 3

粗细：

拟合度：

Out[ ]=

Out[ ]=