Uniform Distribution

In [1]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from scipy import stats
```

In [14]:

```
un = stats.uniform.rvs(loc=1, scale=10, size=1000)
un
```

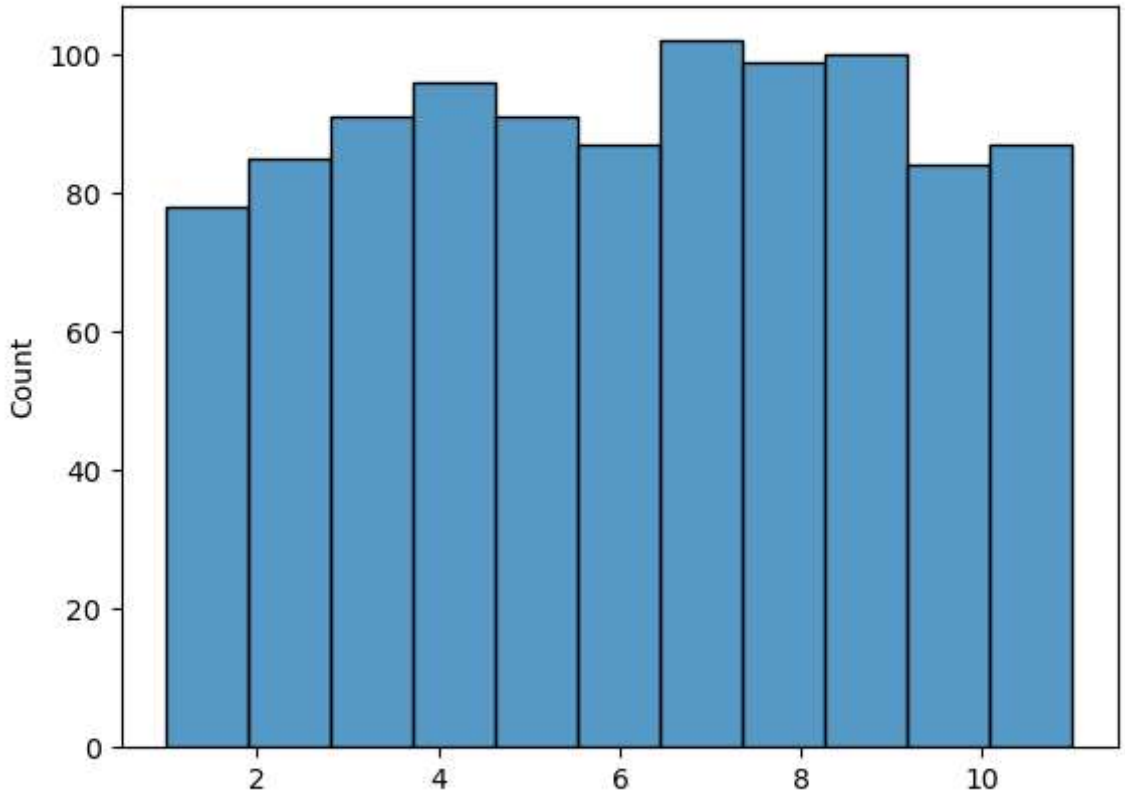
```
array([ 8.07769872,  1.08627097,  3.03027475,  3.11618037, 10.38431507,
        2.4565233 ,  4.19279648,  8.51174359,  5.68710523,  4.45566825,
        9.11887038,  2.70067353,  9.03311654, 10.74699716, 10.6817088 ,
        6.53819052,  7.41817797,  8.77553406,  2.43167681,  7.58640662,
       10.65661302,  3.05311184,  4.74453187, 10.54146402, 10.927516  ,
        3.64015294,  3.84348385,  7.38137189,  8.69372502,  9.14461294,
        6.97993608,  3.79672196,  4.18334954,  3.78436462,  5.65992362,
        8.04421262,  7.59838324,  9.12526683, 10.97448305,  7.19164532,
        7.31717057,  8.95893945,  4.46564008,  1.1663179 ,  3.33007537,
       10.69369689,  3.52764908,  4.92582351,  7.91280613,  5.41652363,
        3.98984174, 10.0619985 ,  6.63888166, 10.13678109,  8.9681322 ,
        4.11590925,  8.19362377,  9.77016951,  3.47667867,  3.97761093,
        6.53813772,  5.70835408,  9.69211717,  8.49641507,  8.52746036,
        6.38436628,  6.89150606,  9.72521041,  4.68109603,  2.62089786,
        8.41432902,  3.067743  ,  6.76214166,  5.50010291,  1.72659352,
        7.73054263,  5.76720376,  8.6985858 ,  4.07555783,  1.58477562,
        3.54548481,  3.43385993,  6.08074462,  9.20741171,  3.08070474,
        8.13920415,  1.75053233,  2.40725553,  7.24841857,  4.8984542 ,
       10.46325925,  2.86982537,  1.93084067, 10.21330293,  2.674324  ,
       10.89123228,  3.26196886,  8.38149732,  3.73184191,  3.69757931,
```

In [15]:

```
sns.histplot(un)
```

Out[15]:

```
<Axes: ylabel='Count'>
```

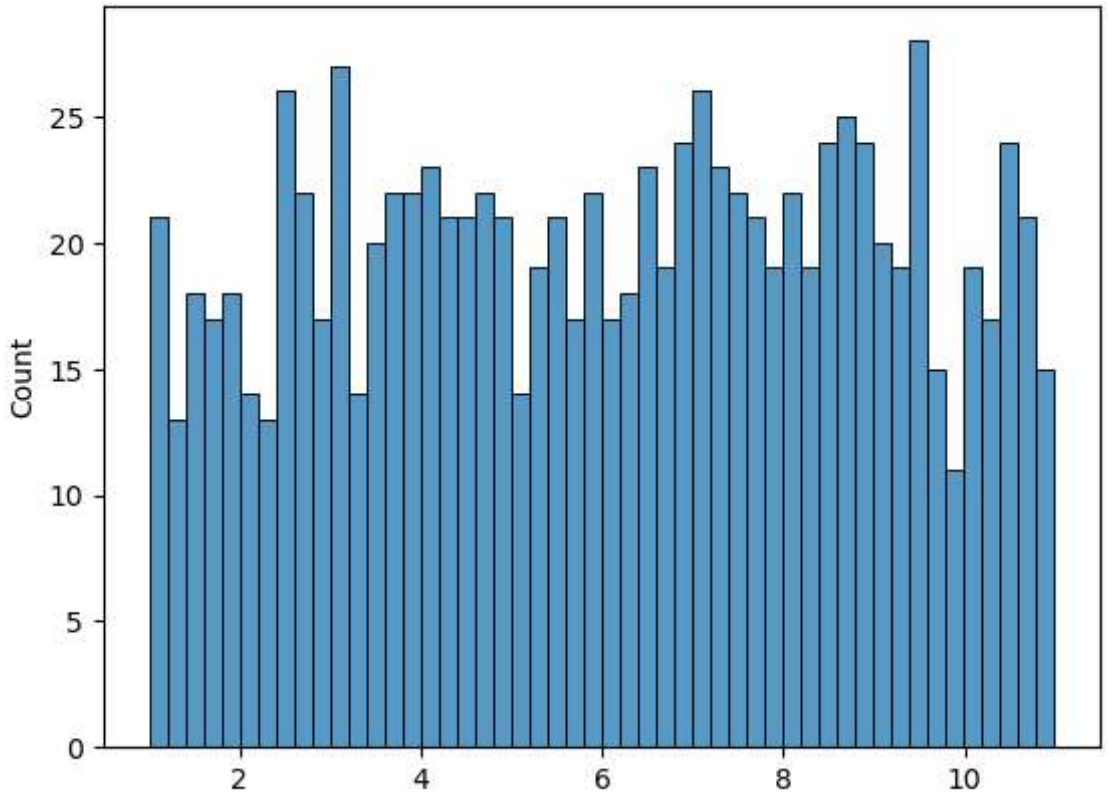


In [16]:

```
sns.histplot(un,bins=50)
```

Out[16]:

```
<Axes: ylabel='Count'>
```

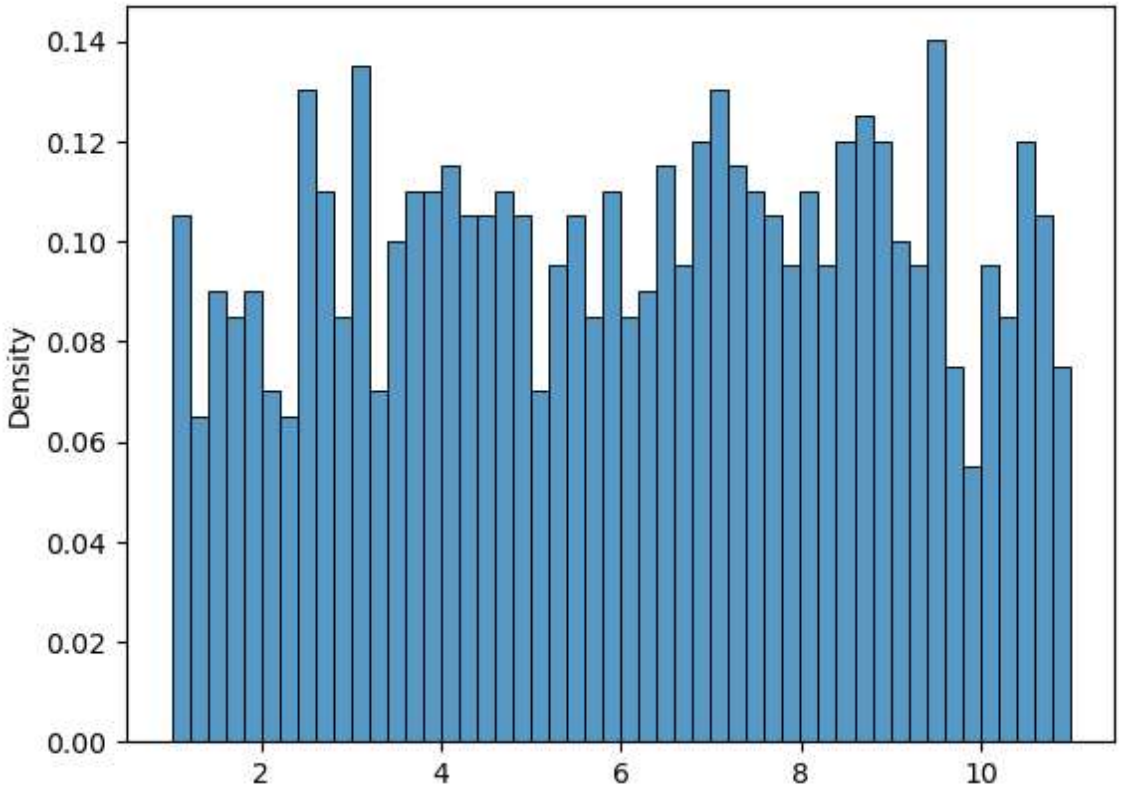


In [17]:

```
sns.histplot(un,bins=50,stat='density')
```

Out[17]:

```
<Axes: ylabel='Density'>
```



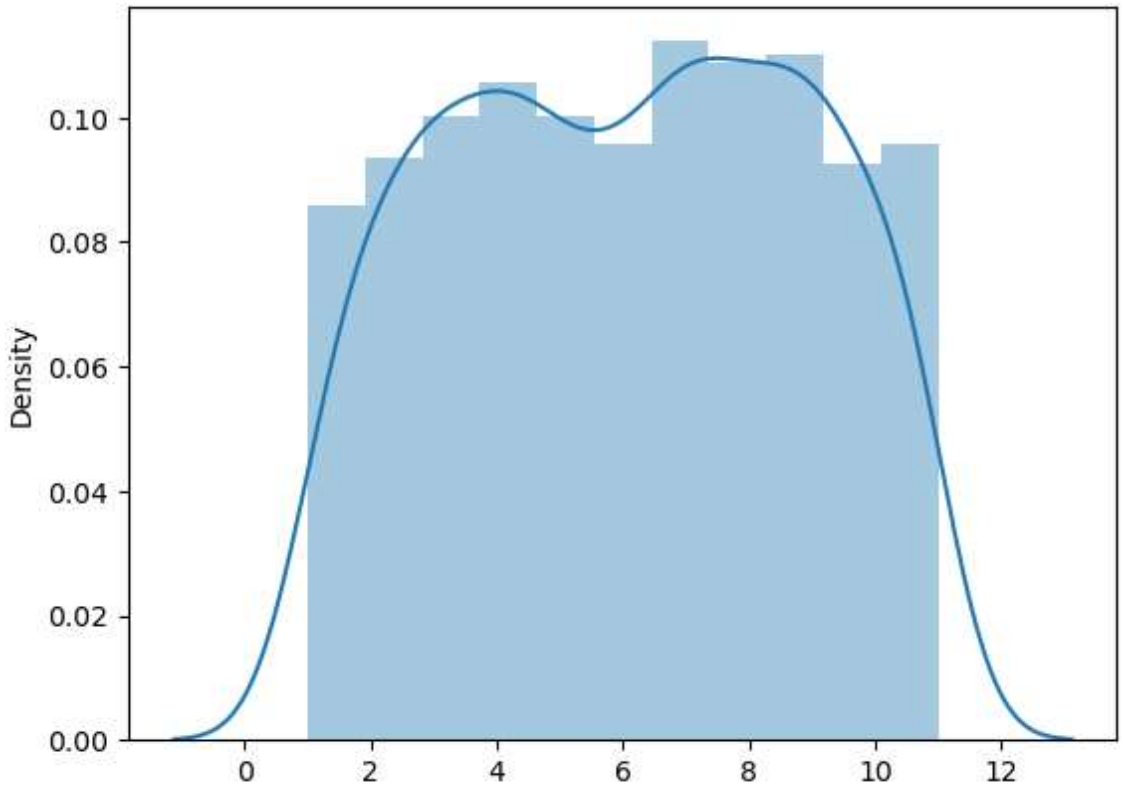
In [18]:

```
sns.distplot(un)
```

```
C:\Users\ROSY\AppData\Local\Temp\ipykernel_3180\2318805507.py:1: UserWarni
ng:

`distplot` is a deprecated function and will be removed in seaborn v0.14.
0.

Please adapt your code to use either `displot` (a figure-level function wi
th
similar flexibility) or `histplot` (an axes-level function for histogram
s).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751 (https://
gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751)

  sns.distplot(un)
```

Out[18]:

```
<Axes: ylabel='Density'>
```

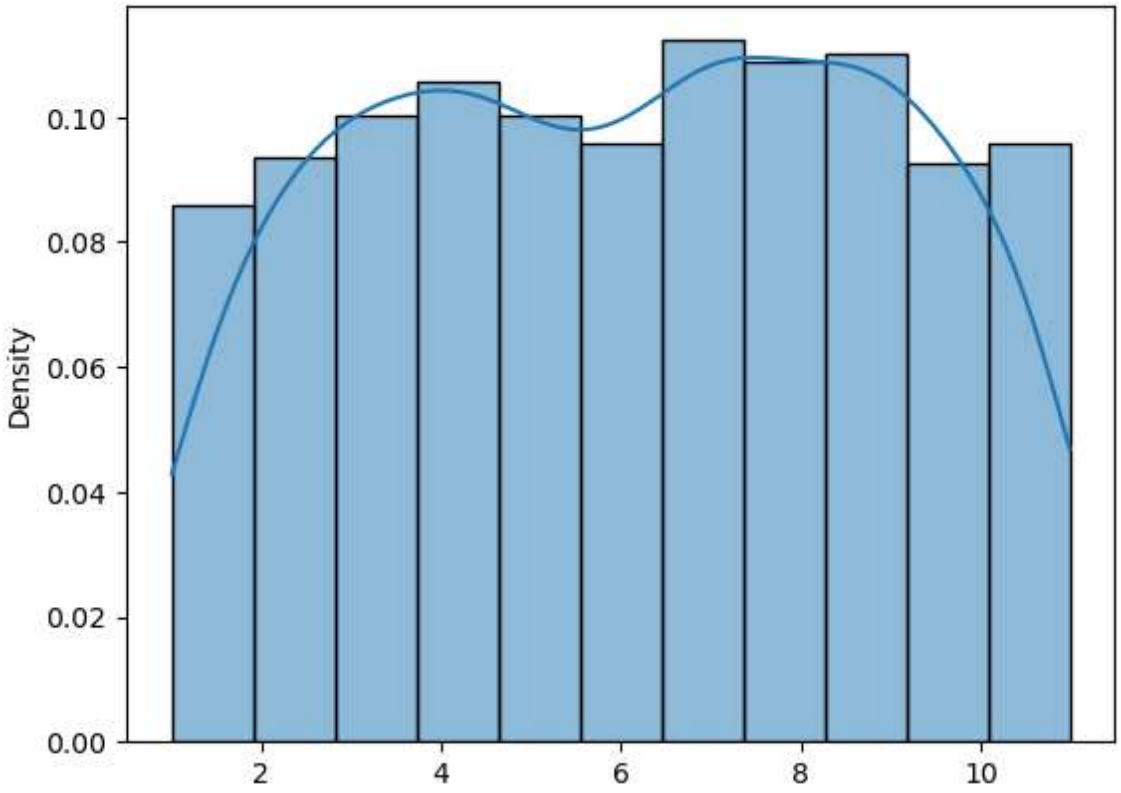


In [19]:

```
sns.histplot(un,kde= True,stat="density")
```

Out[19]:

```
<Axes: ylabel='Density'>
```

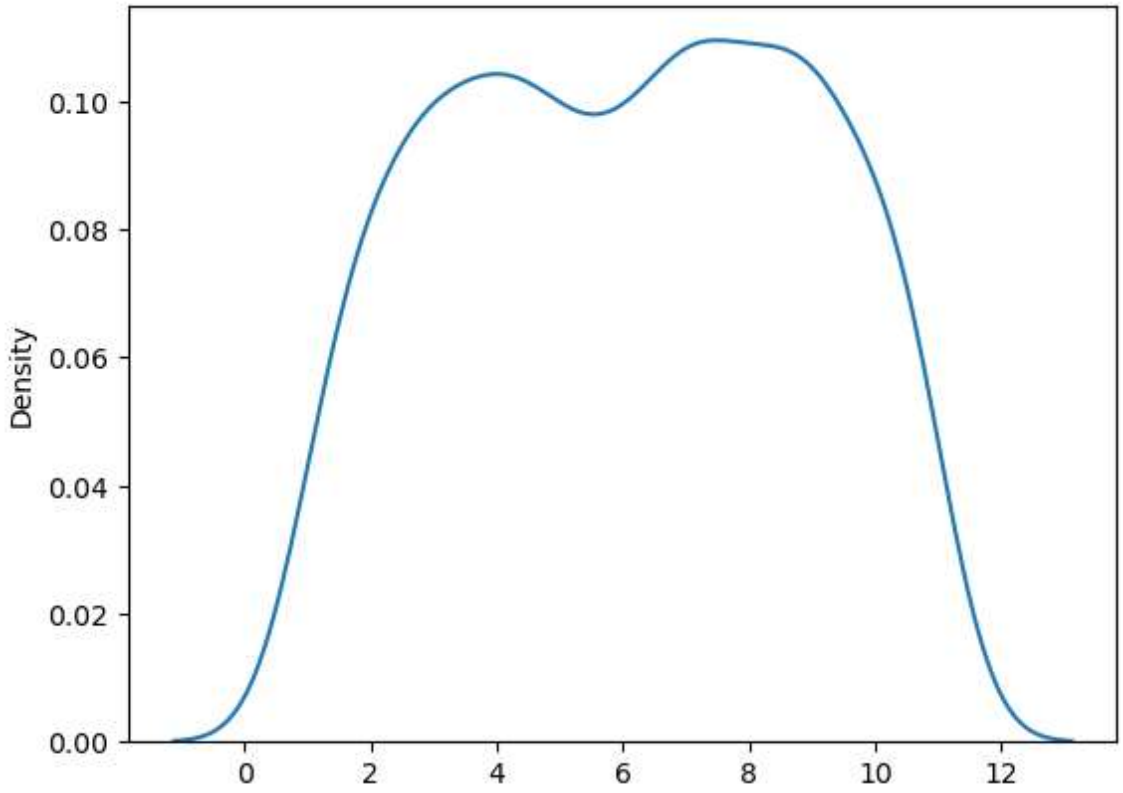


In [20]:

```
sns.kdeplot(un)
```

Out[20]:

```
<Axes: ylabel='Density'>
```



In [21]:

```
stats.uniform.pdf(-10, loc=1, scale=100)
```

Out[21]:

```
0.0
```

In [22]:

```
stats.uniform.cdf(20, loc=1, scale=100)
```

Out[22]:

```
0.19
```

In [24]:

```
x=np.arange(-40,140,1)
x
```

Out[24]:

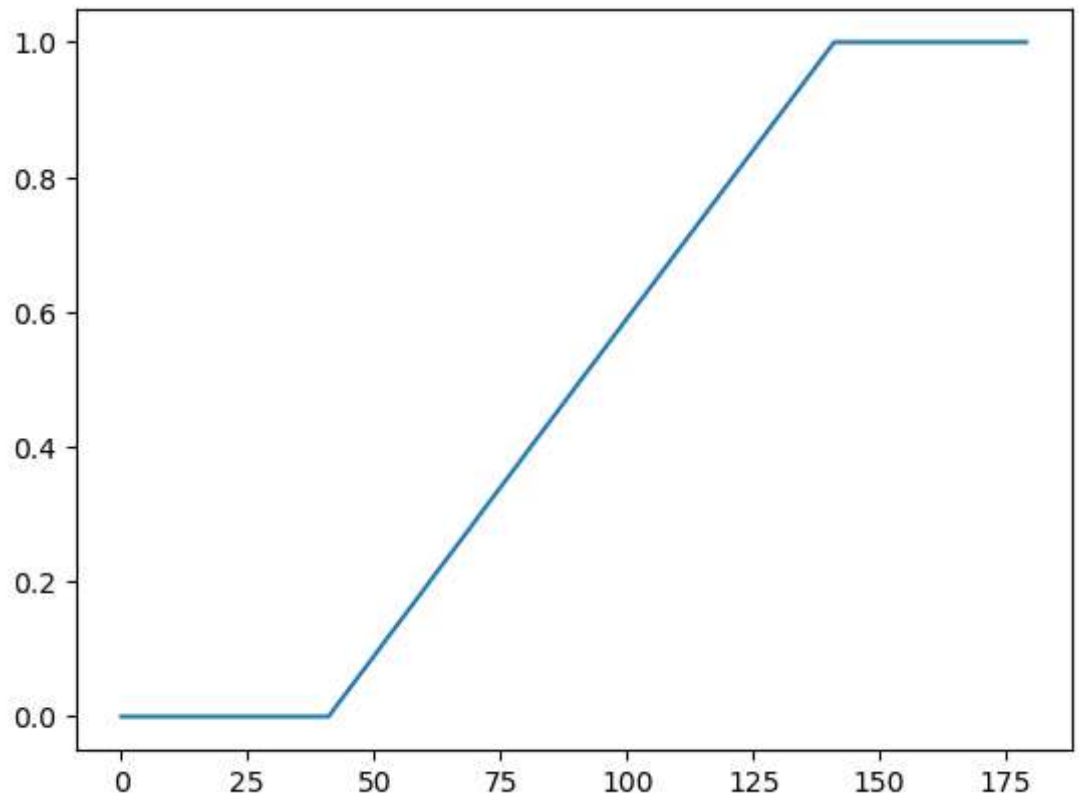
```
array([-40, -39, -38, -37, -36, -35, -34, -33, -32, -31, -30, -29, -28,
       -27, -26, -25, -24, -23, -22, -21, -20, -19, -18, -17, -16, -15,
       -14, -13, -12, -11, -10,  -9,  -8,  -7,  -6,  -5,  -4,  -3,  -2,
        -1,   0,   1,   2,   3,   4,   5,   6,   7,   8,   9,  10,  11,
        12,  13,  14,  15,  16,  17,  18,  19,  20,  21,  22,  23,  24,
        25,  26,  27,  28,  29,  30,  31,  32,  33,  34,  35,  36,  37,
        38,  39,  40,  41,  42,  43,  44,  45,  46,  47,  48,  49,  50,
        51,  52,  53,  54,  55,  56,  57,  58,  59,  60,  61,  62,  63,
        64,  65,  66,  67,  68,  69,  70,  71,  72,  73,  74,  75,  76,
        77,  78,  79,  80,  81,  82,  83,  84,  85,  86,  87,  88,  89,
        90,  91,  92,  93,  94,  95,  96,  97,  98,  99, 100, 101, 102,
       103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115,
       116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128,
       129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139])
```

In [25]:

```
cdf_un = stats.uniform.cdf(x,loc=1 , scale=100)
cdf_un
plt.plot(cdf_un)
```

Out[25]:

```
[<matplotlib.lines.Line2D at 0x10d36466b60>]
```



In [ ]: