SAYISAL İŞARET İŞLEME DERSİ ÖDEV1

Öğrenci İsmi ve Numarası:

İlker Bedir - 16011036

Ders Sorumlusu: Doç.Dr. Gökhan BİLGİN

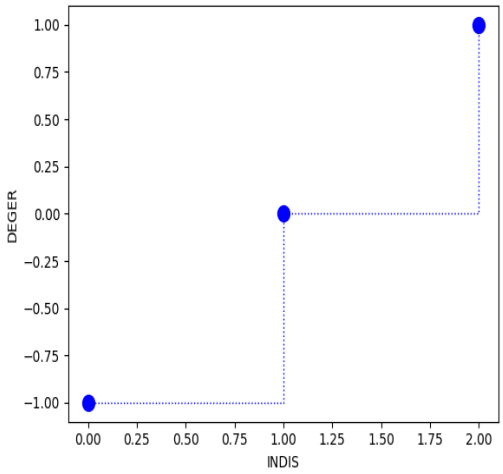
Teslim Tarihi: 12.03.2020

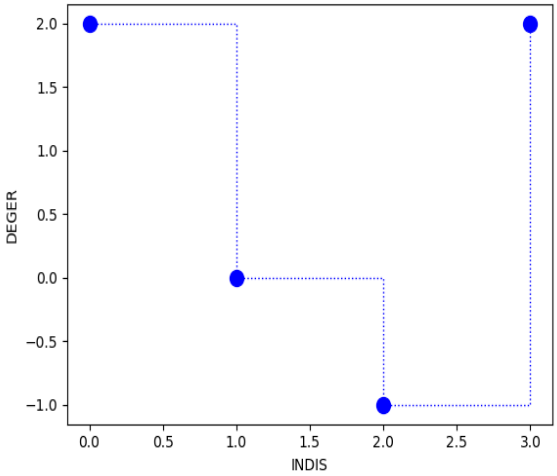
Ödev Konusu: Konvolüsyon

ÖDEV KODU:

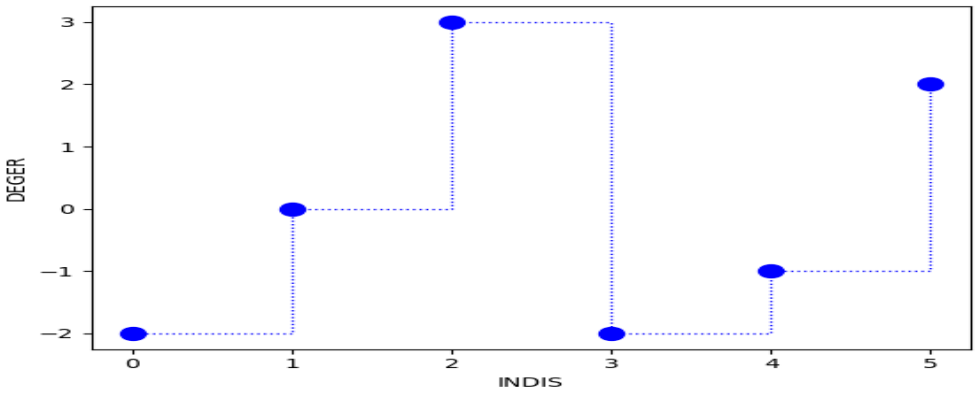
```
import matplotlib.pyplot as plt
from scipy import signal
x = []
h = []
a = int(input("Size of first array:"))
b = int(input("Size of second array:"))

for i in range(a):
   x.append(int(input("Elements of first array ")))
for i in range(b):
   h.append(int(input("Elements of second array ")))

plt.plot( x, 'bo',linestyle='dotted',drawstyle='steps-post',markersize=10,linewidth=1)
plt.xlabel('INDIS')
plt.ylabel('DEGER')
plt.show()

plt.plot( h, 'bo',linestyle='dotted',drawstyle='steps-post',markersize=10,linewidth=1)
plt.xlabel('INDIS')
plt.ylabel('DEGER')
plt.show()

y=signal.convolve(x,h,mode='full',method='direct')

plt.plot( y, 'ro',linestyle='dotted',drawstyle='steps-post',markersize=10,linewidth=1)
plt.xlabel('INDIS')
plt.ylabel('DEGER')
plt.show()

def my_convolution(x,h):
   y=[]
   cnt=0;
   for i in range(len(h)+len(x)-1):
      y.append(0)
   for i in range(len(h)):
      cnt=i
      for j in range(len(x)):
         y[cnt]=x[j]*h[i]+y[cnt]
         cnt=cnt+1
   return y

z=my_convolution(x,h)
plt.plot( z, 'bo',linestyle='dotted',drawstyle='steps-post',markersize=10,linewidth=1)
plt.xlabel('INDIS')
plt.ylabel('DEGER')
plt.show()
```

ÖRNEK1 ;

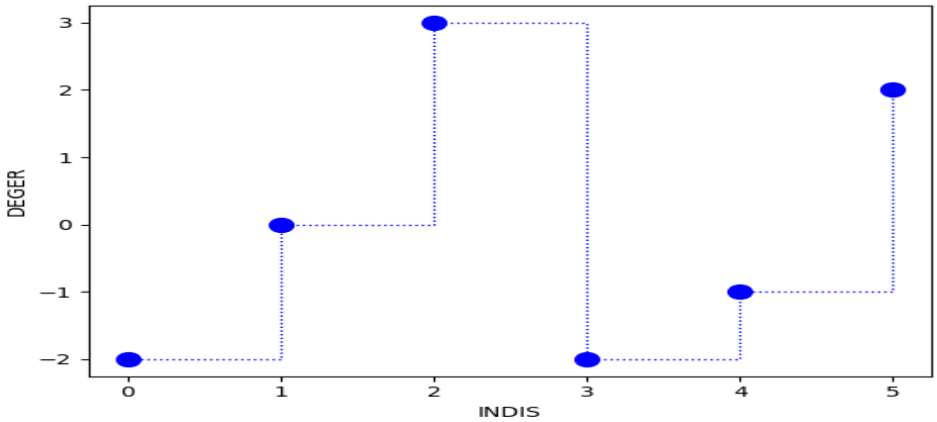




X SİNYALİ Y sinyali



HAZIR KONVOLÜSYON



KENDİ OLUŞTURDUĞUM KONVOLÜSYON

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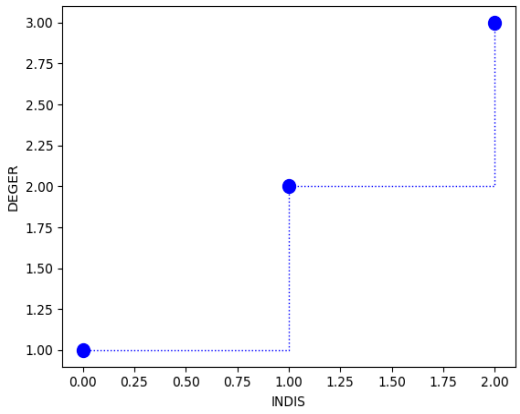
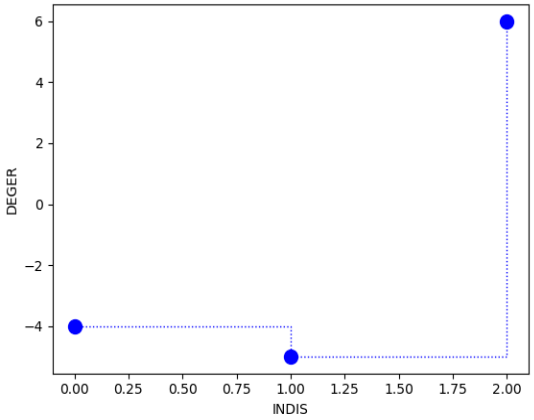


X SİNYALİ



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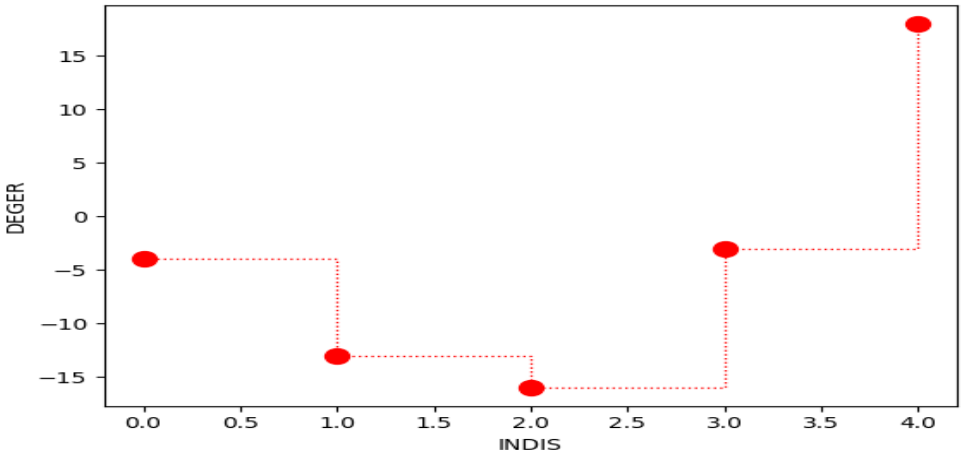

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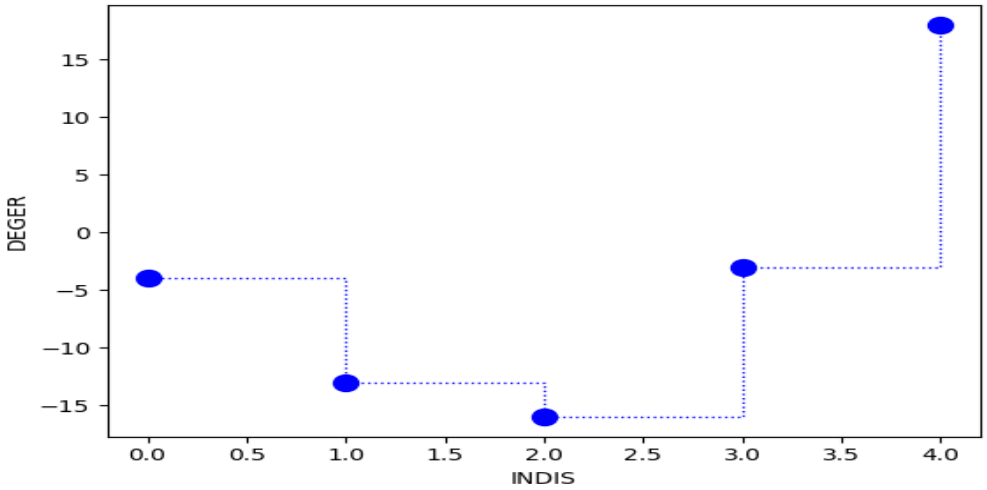

KENDİ OLUŞTURDUĞUM KONVOLÜSYON

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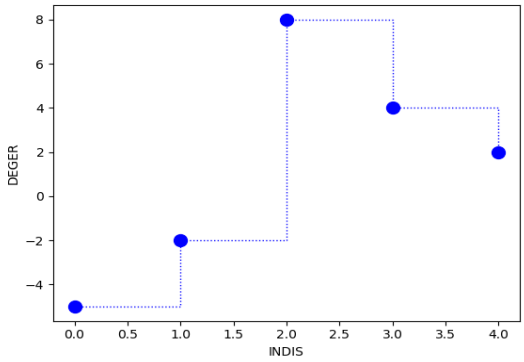

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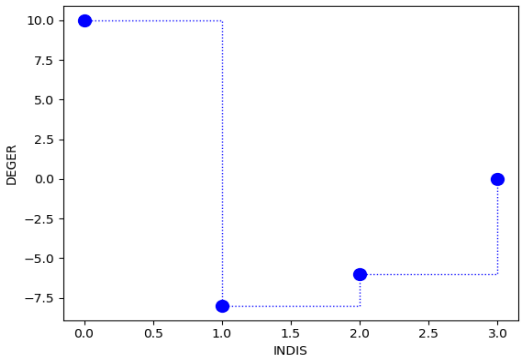

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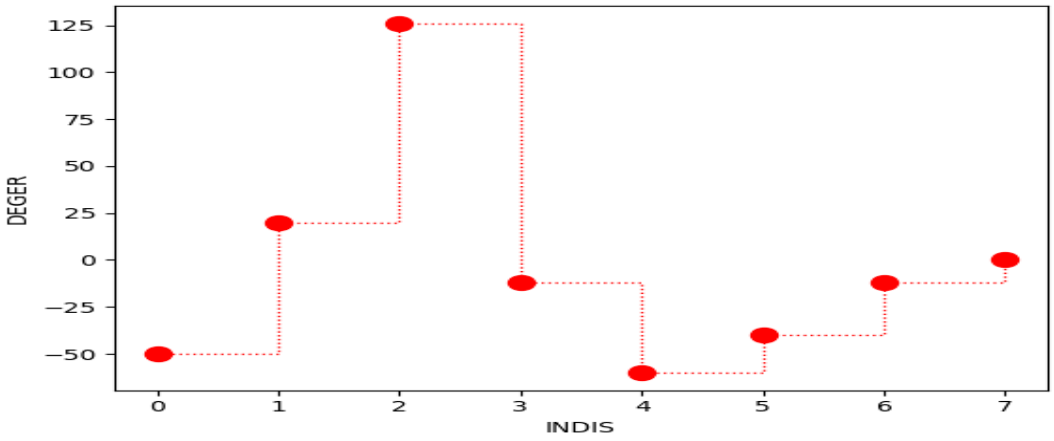

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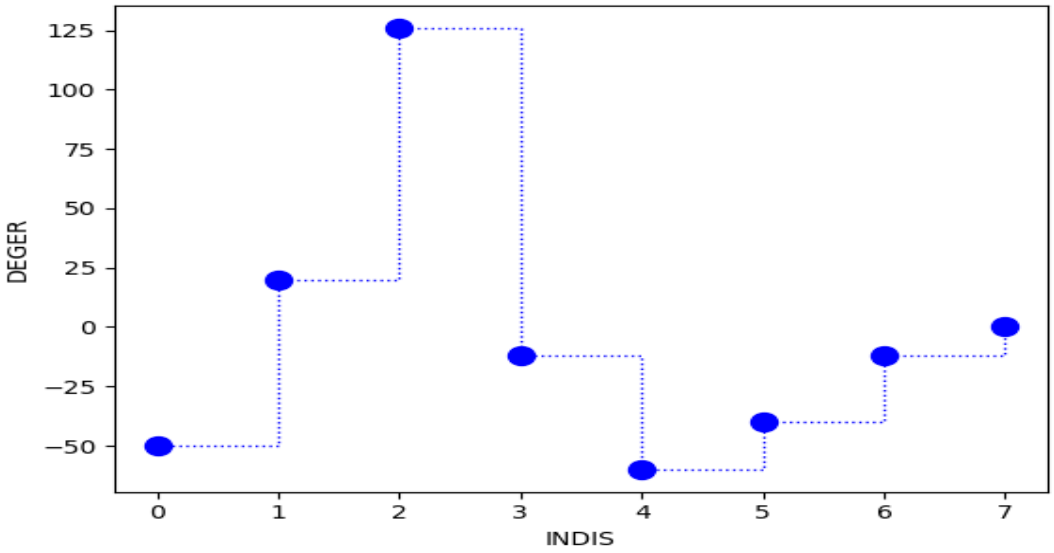

KENDİ OLUŞTURDUĞUM KONVOLÜSYON