```
#AIM- To Run interpolation program
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#FORRWARD PATH DIFFERNCE


import numpy as np
n=int(input("enter the value of data point ="))
x=np.zeros(n)
y=np.zeros((n,n))

for i in range(n):
    x[i]=float(input("enter the value x["+str(i)+"]="))
    y[i][0]=float(input("enter the value y["+str(i)+"]="))

for i in range(1,n):
    for j in range(0,n-i):
        y[j][i]=y[j+1][i-1]-y[j][i-1]

print("x",end='\t')
print("y",end='\t')
for i in range(1,n):
    print("d"+str(i)+"y",end='\t')
print("\n")

for i in range(0,n):
    print(x[i],end='\t')
    for j in range(0,n-i):
        print(y[i][j],end='\t')
    print("\n")


'''enter the value of data point =5
enter the value x[0]=1
enter the value y[0]=4
enter the value x[1]=2
enter the value y[1]=77
enter the value x[2]=3
enter the value y[2]=12
enter the value x[3]=4
enter the value y[3]=98
enter the value x[4]=5
enter the value y[4]=22
x       y         d1y      d2y      d3y       d4y

1.0    4.0  73.0   -138.0   289.0     -602.0

2.0    77.0     -65.0     151.0   -313.0

3.0    12.0       86.0   -162.0

4.0    98.0     -76.0

5.0    22.0     '''
```