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# Bernoulli-Kette
# Paul Hapke 2015

import random
from tkinter import*

def Versuch():
    w.create_rectangle(0,0,1000,550,fill='white',outline='white')
    n=int(Anzahl.get())
    X=[0 for k in range(0,n+1)]
    wieder=int(Wiederholungen.get())
    p=float(prob.get())
    for k in range(0,wieder):
        randlist=[random.random() for k in range(0,n)]
        count=0
        for k in range(0,n):
            if randlist[k]<=p:
                count+=1
        X[count]=X[count]+1

    w.create_line(20,520,910,520,fill='black')

    for k in range(0,n+1):
        w.create_rectangle(10+(990/(n+1))*k,520,10+(990/(n+1))*(k+1),520-(500/max(X))*X[k])
        w.create_text(10+(990/(n+1))*(k+0.5),530,text=k)
        w.create_text(10+(990/(n+1))*(k+0.5),510-(500/max(X))*X[k],text=X[k])

master=Tk()
w=Canvas(master,height=550,width=1000,bg='white')
w.pack()

Wahr=Label(master,text='Wahrscheinlichkeit')
Wahr.pack(side=LEFT)
prob=Entry(master,width=10)
prob.pack(side=LEFT)

Zahl=Label(master,text='Länge n')
Zahl.pack(side=LEFT)
Anzahl=Entry(master,width=10)
Anzahl.pack(side=LEFT)

Versuche=Label(master,text='Versuche')
Versuche.pack(side=LEFT)
Wiederholungen=Entry(master,width=10)
Wiederholungen.pack(side=LEFT)

Enter=Button(master,text='Ausführen',command=Versuch)
Enter.pack(side=LEFT)

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