

# Pythonda kalkulyator dasturini yaratish.

## Kirish.

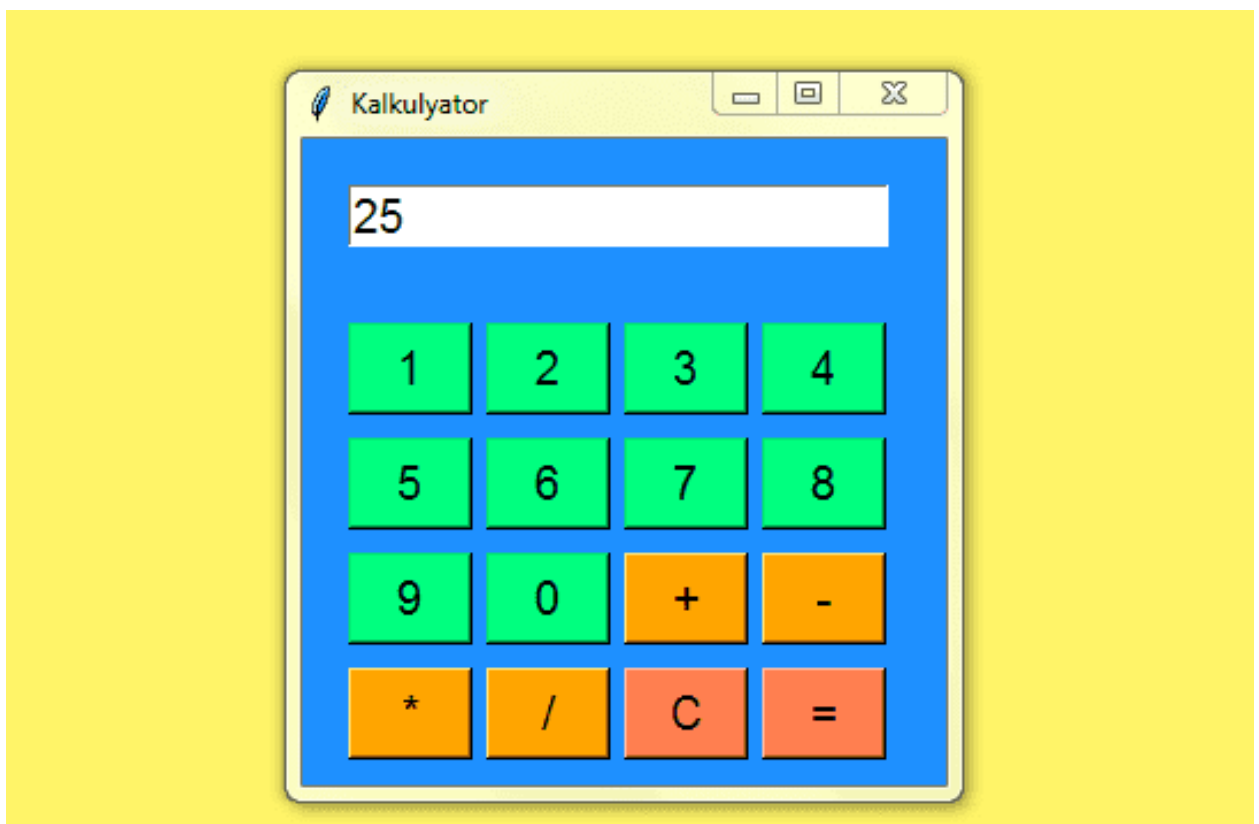
Pythonning tkinter moduli yordamida qiziqarli dasturlar yaratish mumkin. Bu maqolamda tkinter yordamida kalkulyator yaratishni o'rganamiz. Boshqa ko'plab dasturlash tillari kabi pythonda ham interfeysli kalkulyator dasturini yaratish mumkin.

Birinchi dastur oynasini yaratib olamiz:

```
oyna=Tk()
oyna.title("Kalkulyator")
oyna.geometry("280x350")
oyna.configure(bg="dodger blue")
```

bu yerda **oyna**- dasturimiz oynasi. **title**-dastur sarlavhasi. **geometry**-dastur oynasi o'lchamlari. **configure(bg="dodger blue")**-dastur fon rangini belgilash.

Barcha vidjetlar uchun bir xil matn o'lchamini berib olish kerak. Buning uchun **myfont=Font(size=15)**-o'zgaruvchisini yaratib olamiz. Kalkulyatorimizning eng asosiy vidjetlaridan biri bu ma'lumotlarni kirituvchi va natijani ko'rsatuvchi ekran **Entry** vidjetidir. Uni quyidagicha yaratamiz: **n=Entry(oyna, width=21, font=myfont)** bu yerda oyna-vidjetimiz o'zagi ya'ni ajdodi, width-uzunligi, font-matn shrifti va ma'lumot olish va joylashtirish uchun **n** o'zgaruvchiga o'zlashtiramiz. Har bir tugma bosilganda amal bajarishi uchun funksiya yaratib, **command** buyrug'i orqali biriktiramiz.



Dastur interfeysi.

Bular qo'shish, ayirish, ko'paytirish va bo'lish vazifasini bajaruvchi funksiyalar.

```
def tp():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="+"
    return
def tm():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="-"
    return
def tk():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="*"
    return
def tb():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="/"
    return
```

Kalkulyatorimizga tugmalarni joylashtirishimiz kerak. **Button** vidjetini joylashtirib chiqamiz. **Button(oyna, text="1", width=4, font=myfont, bg="spring green", command=t1).place(x=20, y=80)** bu yerda oyna-vidjet ajdodi, text-tugma ustidagi matn, width-tugma uzunligi, font-matn shrifti, bg-tugma rangi, command-tugma bosilganda bajariladigan funksiya, place-tugmaning joylashadigan kordinatalari. Kalkulyator ekranini tozalash uchun quyidagicha funksiya yozamiz:

```
def tc():
    return n.delete(0,END)
```

Eng asosiysi, natijani hisoblovchi funksiyamiz quyidagicha bo'ladi:

```
def nat():
    global s,k,l
    if s=="+":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k+l))
    if s=="-":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k-l))
    if s=="*":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k*l))
    if s=="/":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k/l))
    return
```

Kalkulyatorimiz funksiyalari ishlashi quyidagicha bo'ladi. Raqamli tugmalar bosilganda Entry ga shu raqam qo'shib yoziladi. Arifmetik amal tugmalari bosilganda Entrydagi qiymat **k** o'zgaruvchiga o'zlashtiriladi va arifmetik amal belgisi **s** o'zgaruvchiga tenglashtiriladi. Barobar tugmasi bosilganda s o'zgaruvchining qiymati shart operatori tomonidan tekshiriladi va Entry bilan k o'zgaruvchisi o'rtasida shartga qarab amal bajariladi.

#### Dasturning to'liq kodi:

```
from tkinter import *
from tkinter.font import *
oyna=Tk()
oyna.title("Kalkulyator")
oyna.geometry("280x350")
oyna.configure(bg="dodger blue")
myfont=Font(size=15)
n=Entry(oyna, width=21, font=myfont)
n.grid(row=0, column=0)
n.place(x=20, y=20)
k=0
l=0
s=""
def t1():
    return n.insert(END,"1")
def t2():
    return n.insert(END,"2")
def t3():
    return n.insert(END,"3")
def t4():
    return n.insert(END,"4")
def t5():
    return n.insert(END,"5")
def t6():
    return n.insert(END,"6")
def t7():
    return n.insert(END,"7")
def t8():
    return n.insert(END,"8")
def t9():
    return n.insert(END,"9")
def t0():
    return n.insert(END,"0")
def tp():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="+"
    return
def tm():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="-"
    return
def tk():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="*"
    return
```

```

def tb():
    global s,k
    k=int(n.get())
    n.delete(0,END)
    s="/"
    return
def tc():
    return n.delete(0,END)
def nat():
    global s,k,l
    if s=="+":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k+l))
    if s=="-":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k-l))
    if s=="*":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k*l))
    if s=="/":
        l=int(n.get())
        n.delete(0,END)
        n.insert(END,str(k/l))
    return
Button(oyna, text="1", width=4, font=myfont, bg="spring green",
command=t1).place(x=20, y=80)
Button(oyna, text="2", width=4, font=myfont, bg="spring green",
command=t2).place(x=80, y=80)
Button(oyna, text="3", width=4, font=myfont, bg="spring green",
command=t3).place(x=140, y=80)
Button(oyna, text="4", width=4, font=myfont, bg="spring green",
command=t4).place(x=200, y=80)
Button(oyna, text="5", width=4, font=myfont, bg="spring green",
command=t5).place(x=20, y=130)
Button(oyna, text="6", width=4, font=myfont, bg="spring green",
command=t6).place(x=80, y=130)
Button(oyna, text="7", width=4, font=myfont, bg="spring green",
command=t7).place(x=140, y=130)
Button(oyna, text="8", width=4, font=myfont, bg="spring green",
command=t8).place(x=200, y=130)
Button(oyna, text="9", width=4, font=myfont, bg="spring green",
command=t9).place(x=20, y=180)
Button(oyna, text="0", width=4, font=myfont, bg="spring green",
command=t0).place(x=80, y=180)
Button(oyna, text="+", width=4, font=myfont, bg="orange",
command=tp).place(x=140, y=180)
Button(oyna, text="-", width=4, font=myfont, bg="orange",
command=tm).place(x=200, y=180)
Button(oyna, text="*", width=4, font=myfont, bg="orange",
command=tk).place(x=20, y=230)
Button(oyna, text="/", width=4, font=myfont, bg="orange",
command=tb).place(x=80, y=230)
Button(oyna, text="C", width=4, font=myfont, bg="coral",
command=tc).place(x=140, y=230)
Button(oyna, text="=", width=4, font=myfont, bg="coral",
command=nat).place(x=200, y=230)
oyna.mainloop()

```

Dasturni tekshirib ko'ramiz.

### **Xulosa.**

Python dasturlash tilini o'rganayotganlar interfeysli dasturlar yaratishga qiziqishadi va ular qanday yaratish kerakligini so'rashadi. Hozirda maktab informatika darsligida ham python dasturlash tili o'tilmoqda. Darslarda interfeysli dasturlar yaratib ko'rsatish o'quvchilarning dasturlashga bo'lgan qiziqishini yanada oshiradi. Keyingi maqolalarimda ham pythonda GUI dasturlar yaratishni davom etirishga harakat qilaman.

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