

Abuurista liisaska Python

Computing

Unit Barnaamijyada Python ee xogta taxan



Natiijo

Waxaan abuuri karaa liis (list) Python waxaanan u isticmaali karaa xulasho (selection) si aan u helo oo u muujiyo walxaha liiska.

Erayada muhiimka ah

xulasho (selection)

loo isticmaalo marka ay jiraan wax ka badan hal waddo oo barnaamijku raaci karo

liis (list)

qaab-dhismeed xogeed firfircoon oo ka koobnaan kara walxo noocyo kala duwan

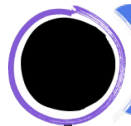
qaab-dhismeed xogeed (data structure)

hab lagu abaabulo oo lagu kaydiyo xogta kombuyuutarka

tixraac (index)

goobta walxaha ama curiyeyaasha (elements) ee liiska, safka, ama xarigga

Abuurista liisaska Python



Isticmaal weedho xulasho (selection) si aad u xakamayso socodka barnaamijka



Kaydi oo hel walxaha ku jira liiska

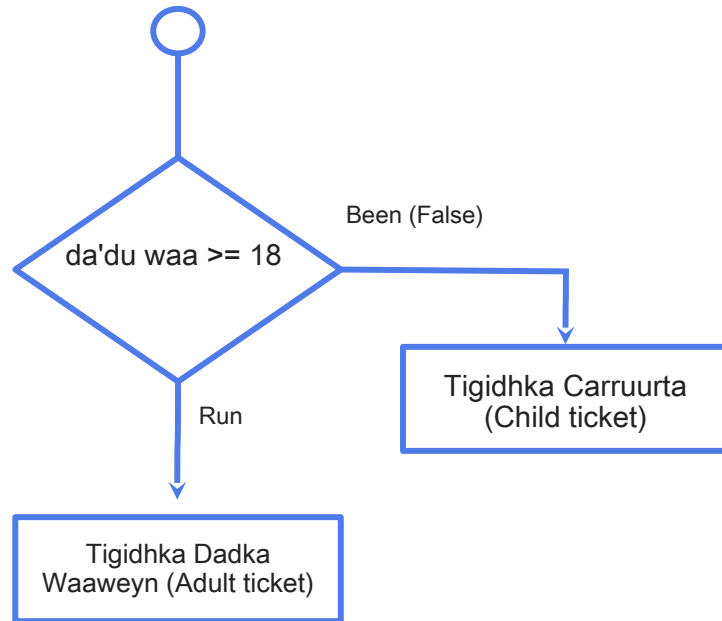


Isticmaal xulasho (selection) si aad u muujiso walxaha liiska

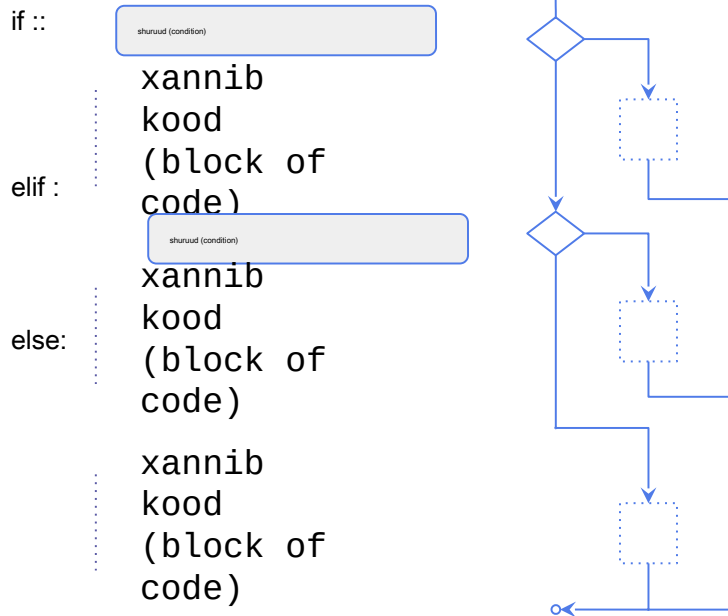
Xulashada (selection) waxaa loo isticmaalaa marka ay jiraan wax ka badan hal waddo oo barnaamijku raaci karo.

Waxay u ogolaataa barnaamijka inuu ku socodsiiyo taxanayaal kood ah iyadoo ku xiran haddii shardiigu qiime (value) yahay Run (True) ama Been (False).

Barnaamijku wuxuu hubiyaa shardiga wuxuuna doortaa waddada ficilka.



Barnaamijyada, xulashada (selection) waxaa lagu fuliyaa iyadoo la isticmaalayo odhaahyo 'if' (if statements).



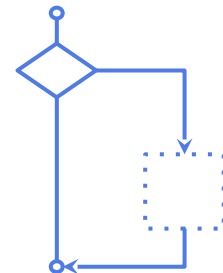
```
1 haddii (if) shuruud (condition):  
2 xannib kood (block of code)  
3 haddii kale haddii (elif) shuruud (condition):  
4 xannib kood (block of code)  
5 haddii kale (else):  
6 xannib kood (block of code)
```

Qoraalka 'if' wuxuu hubinayaa shuruudda (condition):

- Haddii ay tahay Run (True), waxay wadaa koodka ku jira xannibaaddeeda, taasoo matalaysa dariiq ka mid ah socodka barnaamijka.
- Haddii ay tahay Been (False), block-ka code-ka ee hoos yimaada shuruudda waa la iska dhaafaa, barnaamijkuna wuu sii socdaa.

haddii shuruud (if condition):

block-ka code-ka



Wadiiq kasta oo suurtoagal ah ee barnaamijka, waxaad u baahan doontaa qoraal xulasho (selection statement).

```
1 haddii shuruud (if condition):  
2 block-ka code-ka  
3 haddii kale haddii shuruud (elif condition):  
4 block-ka code-ka  
5 haddii kale haddii shuruud (elif condition):  
6 block-ka code-ka  
7 haddii kale (else):  
8 block-ka code-ka
```

Waxaad yeelan kartaa inta aad rabto ee qoraalada 'elif'.

Run mise been?

Waxaad yeelan kartaa kaliya hal qoraal 'elif' gudaha qoraal xulasho (selection statement).



Run



Been



Sababta?

Waxaad yeelan kartaa inta aad rabto ee qoraalada 'elif', iyadoo ku xiran inta wadiiq ee aad u baahan tahay barnaamijkaaga.

Maxaad samayn kartaa si aad u kordhiso barnaamijkan si uu u daabaco farriinta “Waa maalin shaqo” haddii maalintu tahay inta u dhaxaysa 0 iyo 4 iyo “Waa maalin fasax” haddii maalintu tahay 5 ama 6?

```
1 print("What day is it today?")  
2 day = int(input())
```

Fiiro gaar ah: Barnaamijku wuxuu isticmaalaa tiro (integer) maalin kasta oo toddobaadka ah, oo u dhexaysa 0 (Isniin) ilaa 6 (Axad).

Waxaan ku dari karaa qaar if statements.



Cali



haddii doorsoomaha (variable) day uu ka yar yahay ama la eg yahay 4, farriinta (message), "It's a weekday" waa la daabacaa.

haddii kale farriinta (message), "It's the weekend!" waa la daabacaa.

```
1 print("What day is it today?")
2 day = int(input())
3
4 if day <= 4:
5     print("It's a weekday")
6 else:
7     print("It's the weekend!")
```



Maxaa la daabici lahaa haddii isticmaaluhu uu galiyo 4 marka barnaamijkan la shubayo?

```
1 print("What day is it today?")
2 day = int(input())
3
4 if day <= 4:
5     print("It's a weekday")
6 else:
7     print("It's the weekend!")
```

Barnaamijku wuxuu daabici doonaa, "It's a weekday" maadaama bayaanka xulashada (selection statement) uu ka yar yahay ama la eg yahay 4.

Python-ka, haddii aad rabto inaad ku biiriso qoraal iyo qiime (value) ku jira variable-ka gudaha print statement, waxaad isticmaali kartaa formatted string (f-string):

```
1 print("Maanta waa maalintee?")
2 day = input()
3
4 print(f"Waa fiican tahay, {day} waa maalintayda aan jeclahay")
```

ku qor f

ku rid {} agagaarka magaca variable-ka

- 1) Fur barnaamijka bilowga ah `oak.link/days-of-week`
- 2) Dhammeystir line 5 si qiimaha (value) remaining uu noqdo tirada maalmaha ee ka hadhay ilaa usbuuca (oo ay ku jirto maanta).
- 3) Geli line-ka hoose barnaamijkaaga, meel kasta oo aad u qumman tahay inaad ku muujiso tirada maalmaha ee hadhay.

```
print(f'{remaining} maalmood ayaa ka hadhay usbuuca')
```

- 4) Kordhi barnaamijka si Jimcaha (day 4) loo daweeyo si ka duwan, iyadoo farriin ka duwan lagu muujinayo inta kale ee maalmaha shaqada. Farriinta waa in la muujiyo waa:

“Waa Jimce, hal maalin ayaa ka hadhay usbuuca”

Talo: Waxaad u baahan doontaa inaad isticmaasho if, elif, else, maxaa yeelay hadda waxaa jiri doona saddex waddo oo suurtagal ah barnaamijkaaga.

oak.link/days-of-week-solution

```
1 print("Maanta waa maalintee?")
2 day = int(input())
3 haddii day <= 3:
4     print("Waa maalin shaqo")
5     haddii hadhay = 5-maalin
6     daabac(f'{haddhay} maalmood oo ka hadhay usbuuca dhammaadkiisa')
7     haddii maalin == 4:
8     daabac("Waa Jimce, hal maalin oo keliya ayaa ka hadhay usbuuca dhammaadkiisa")
9     haddii kale:
10    daabac("Waa usbuuca dhammaadkiisa!")
```

Abuurista liisaska (lists) ee Python



Isticmaal weedho xulasho (selection statements) si aad u maamusho socodka barnaamijka (program flow)



Kaydi oo hel shay (items) ku jira liis (list)



Isticmaal xulasho (selection) si aad u soo bandhigto shay (items) ka mid ah liis (list)

Liis (list) waa qaab-dhismeed xog (data structure).

Qaab-dhismeedka xogta (data structures) waa ururro xog oo habaysan. Tani waxay ka kooban tahay urur shay (data items) ama curiyayaal (elements) oo isku xigxiga, mid ka mid ah kan kale.

Liis (list) waa qaab-dhismeed xog (data structure) oo firfircoon oo kori kara ama yaraansan kara markaad ku darto ama ka saarto shay (items).

Shay kasta (item) oo ku jira liiska (list) wuxuu leeyahay boos loo yaqaan tusaha (index), oo ka bilaabmaya 0.

Tusaha (Index)

Qiimaha (Value)

0	1	2
Isniin	Talaado	Arbaco

Kaydi oo hel shay (items) ku jira liis (list)

Python-ka, syntax-ka list waa liis qiimayaal (items) oo kala go'ay, oo ku dhex jira xagal laba jibaaran:

```
1 days = ["Monday", "Tuesday",  
2 "Wednesday", "Thursday",  
3 "Friday", "Saturday",  
4 "Sunday"]
```

Tusaalahan, shayga list waa xarfo (string literals), marka waxay u baahan yihiin inay ku jiraan xigashooyin. Fiiro: List-ku wuxuu dhaafaa hal sadar sababtoo ah dhererka shayga.

Marka barnaamijku shaqeeyo, waa sida list-ku u ekaan doono marka lagu kaydiyo xusuusta:

```
1 days = ["Monday", "Tuesday",  
2 "Wednesday", "Thursday",  
3 "Friday", "Saturday",  
4 "Sunday"]
```



Shayga koowaad ee liiska wuxuu ku jiraa booska 0, ma aha 1!

maalmaha (days)

0	"Monday"
1	"Tuesday"
2	"Wednesday"
3	"Thursday"
4	"Friday"
5	"Saturday"
6	"Sunday"

Kaydi oo geli shayada ku jira liis (list)

Barnaamijka dhexdiisa, maalintee ayaa ku jirta booska tusaha (index) 1?

a Isniin (Monday)

b Talaado (Tuesday) ✓

c Arbaco (Wednesday)

```
1 maalmaha = ["Isniin", "Talaado",  
2 "Arbaco", "Khamiis",  
3 "Jimco", "Sabti",  
4 "Axad"]
```

Si aad u hesho shay ku jira liis (list), waa inaad caddeysaa tusaha (index) (booska) ee shayga haya.

```
1 maalmaha = ["Isniin", "Talaado",  
2 "Arbaco", "Khamiis",  
3 "Jimco", "Sabti",  
4 "Axad"]  
5 daabac(maalmaha[1])
```

Marka tani waxay daabaci doontaa Isniin.



Cali

Maya! Xusuusnow, liisaska waxay isticmaalaan tixraac eber-ku-saleysan, marka tani waxay daabici doontaa Talaado.



Saciid

Kaydi oo hel shayyada ku jira liis

Si aad u hesho shay ku jira liis, waxaad u baahan tahay inaad qeexo index (booska) curiyaha (element) ee haysta shayga.

```
1 days = ["Monday", "Tuesday",  
2 "Wednesday", "Thursday",  
3 "Friday", "Saturday",  
4 "Sunday"]  
5 print(days[7])
```

Maxay tani daabici doontaa?



Cali

Tani waxay soo celin doontaa `IndexError`, sababtoo ah ma jiro shay ku jira booska `days[7]` ee liiska.



Saciid

Kaydi oo hel shayyada ku jira liis

Tibaaxaha (Expressions) sidoo kale waxaa loo isticmaali karaa in lagu helo shayyada liiska ilaa ay qiimeeyaan (evaluate) tiro-dhammaystiran.

```
1 days = ["Monday", "Tuesday",  
2 "Wednesday", "Thursday",  
3 "Friday", "Saturday",  
4 "Sunday"]  
5 day = 3  
6 print(days[day-1])
```

Maalintee usbuuca ayaa la daabici doonaa?

Arbaca

maalmaha

0	Isniin
1	Talaado
2	Arbaco
3	Khamiis
4	Jimce
5	Sabti
6	Axad

Waa kee code aad ku dari lahayd line 5 haddii aad rabto inaad daabacdo qoraalka Jimce?

a

daabac(days[3])

b

daabac(days[5])

c

daabac(days[4])



```
1 days = ["Isniin", "Talaado",  
2 "Arbaco", "Khamiis",  
3 "Jimce", "Sabti",  
4 "Axad"]  
5
```

Kaydi oo hel shay ku jira liis (list)

Maxay daabici doontaa `print(days[7])`?

a

Axad

b

IndexError



1
2
3
4
5

```
maalmaha = ["Isniin", "Talaado",  
"Arbaco", "Khamiis",  
"Jimce", "Sabti",  
"Axad"]
```

c

`daabac(days[7])`

- 1) Fur barnaamijka bilowga ah `oak.link/seasons`
- 2) U qoondee liis (list) bilaha safka 1 oo ku buuxi liiska 12 bilood ee sanadka (liiskani wuxuu dhaafi karaa dhowr saf).
- 3) Dhammeystir safafka 7, 8 iyo 9 oo leh tiro (integer) si barnaamijku u muujiyo magacyada bilaha xagaaga.

```
1 bilaha =  
2  
3 daabac("Kuwani waa bilaha xagaaga:")  
4 daabac(bilaha[ ])  
5 daabac(bilaha[ ])  
6 daabac(bilaha[ ])  
7  
8  
9
```



```
Soo saarista qoraalka  
(text output)  
Kuwani waa bilaha  
xagaaga: Juun  
  
Luuliyo
```

- 4) Fur barnaamijka bilowga ah `oak.link/months`
- 4) Dhammeystir safka 8 oo leh tibaax (expression) si barnaamijku u muujiyo magaca bisha hadda jirta.

```
1 bilaha = ["Janaayo", "Febraayo",  
2 "Maarso", "Abriil", "Maajo",  
3 "June", "July", "August",  
4 "September", "October", "November",  
5 "December"]  
6 print("Waa bil intee? (1-12)")  
7 month = int(input())  
8 print(f"Waa {months[ ]} ")
```

oak.link/seasons-solution

```
1 months = ["January", "February",  
2 "March", "April", "May",  
3 "June", "July", "August",  
4 "September", "October", "November",  
5 "December"]  
6 print("Kuwani waa bilaha xagaaga:")  
7 print(months[5])  
8 print(months[6])  
9 print(months[7])
```

oak.link/months-solution

```
1 months = ["January", "February",  
2 "March", "April", "May",  
3 "June", "July", "August",  
4 "Sebtembar", "Oktoobar", "Nofembar",  
5 "Disembar"]  
6 daabac("Waa bil maanta? (1-12)")  
7 bil = int(input())  
8 daabac(f"Waa {months[bil-1]}")
```

[bil-1] waa la isticmaalaa sababtoo ah isticmaaluhu wuxuu galiyayaa nambarka bisha laga bilaabo 1, halka index-ka liisku uu ka bilaabmayo 0.

Abuurista liisaska (lists) ee Python



Isticmaal weedho xulasho (selection) si aad u xakamayso socodka barnaamijka



Kaydi oo hel alaabta ku jirta liis (list)



Isticmaal xulasho (selection) si aad u muujiso alaabta liiska

Waxaad aragtay sida loo isticmaalo xulashada (selection) iyadoo la adeegsanayo weedho if.

Waxaad sidoo kale aragtay sida loo kaydiyo oo loo helo alaabta liiska (list).

Hadda waxaad isku dari doontaa labadan xirfadood.

Immisa xilli ayaa jira sanadka?

Waxaa jira afar xilli sanadka: jiilaal, gu', xagaa iyo dayr.



Saciid

Barnaamijku wuxuu isticmaalaa xulasho (selection) si uu u daabaco farriin kala duwan xilli kasta. Immisa weedh elif ayaa loo baahan yahay?

a 1

Laba weedh oo elif ah ayaa loo baahan yahay sababtoo ah waxaa jira afar xilli iyo weedha xulashada (selection) waxay sidoo kale ku dari doontaa if iyo else.

b 2 

c 3

Barnaamijku wuxuu weydiisaa isticmaalaha inuu galiyo lambarka bisha laga bilaabo 1 ilaa 12, iyadoo 1 ay tahay Janaayo iyo wixii la mid ah. Bilaha jiilaalku waa Diseembar, Janaayo iyo Febraayo. Waa maxay bayaanka xulashada (selection) ee si sax ah u hubin kara in isticmaaluhu uu galay bil jiilaal?

a

haddii (if) bisha (month) ay ka weyn tahay ama la mid tahay 11:

b

haddii (if) bisha (month) ay la mid tahay 1 ama bisha (month) ay la mid tahay 12:

c

haddii (if) bisha (month) ay ka yar tahay ama la mid tahay 2 ama bisha (month) ay la mid tahay 12:



Bilaha jiilaalku ma aha kuwo isku xiga, marka waa inaad hubisaa bilaha 1, 2 iyo 12.

- 1) Fur barnaamijka bilowga ah oak.link/season-selection
- 2) Dhammeystir barnaamijka si uu u hubiyo qiimaha (value) doorsoomaha bisha (month) oo uu u qoondeeyo qiime (value) ku habboon xilliga (season).
- 3) Barnaamijku waa inuu markaas daabacaa 'Waa' oo ay ku xigto magaca xilliga (jiilaal, guga, xagaaga ama dayrta).

Soo-saarka qoraalka (Text

Output)

Waa maxay bishu? (1-12)

3

Waa Guga

- 4) Halkii laga weydiin lahaa isticmaalaha inuu galiyo bisha hadda, barnaamijku wuxuu soo saari karaa bisha hadda, isagoo isticmaalaya module-ka datetime.

Ku beddel sadarrada codsada oo hela gelinta isticmaalaha (laga calaamadeeyay -) sadarrada soo saaraya bisha hadda (laga calaamadeeyay +).

-	daabac("Waa maxay bishu? (1-12)")
-	bish = int(input())
+	laga soo bilaabo datetime soo deji datetime
+	bish = datetime.now().month

oak.link/season-selection-solution

```
1 xilliyada = ["Jiilaal", "Guga",  
2 "Xagaa", "Dayr"]  
3 print("Waa maxay bisha? (1-12)")  
4 month = int(input())  
5 haddii month <= 2 ama month == 12:  
6     season = 0  
7     haddii kale month <= 5:  
8         season = 1  
9         haddii kale month <= 8:  
10             season = 2  
11             haddii kale:  
12                 season = 3  
13 print(f"Waa {seasons[season]}")
```

```
1 seasons = ["Jiilaal", "Gu",  
2 "Xagaa", "Dayr"]  
3 from datetime import datetime  
4 month = datetime.now().month  
5 haddii month <= 2 ama month == 12:  
6 season = 0  
7 haddii kale month <= 5:  
8 season = 1  
9 haddii kale month <= 8:  
10 season = 2  
11 else:  
12 season = 3  
13 print(f"Waa {seasons[season]}")
```

Xariiq kood oo
la beddelay

Xulasho (Selection) waxaa la isticmaalaa marka ay jiraan wax ka badan hal waddo oo suurtagal ah oo barnaamijku raaci karo.

Liisaska (Lists) waa qaab-dhismeedka xogta (data structures) oo kaydin kara walxo badan oo isku xidhan gudaha Python.

Qiimayaasha (Values) ku jira liis (list) waxaa loo habeeyaa lambarka tusaha (index number), iyadoo shayga koowaad ee liiska ku jira uu ku kaydsan yahay tusaha [0] (index [0]). Walxaha liiska (list items) si toos ah ayaa loo heli karaa iyadoo la sheegayo qiimaha tusaha (index value).