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Osnove programiranja u Python programskom jeziku

Matrice

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Zadatak 58

Sastaviti program koji štampa generisanu matricu 3x3.

programski kôd

```
1 #Zadatak 58
2
3 mat=[[1,2,3], [4,5,6], [7,8,9]]
4
5 print("\nMATRICA") #prvi nacin
6 print(mat)
7
8 print("\nMATRICA") #drugi nacin
9 for i in range(0,3):
10     print(mat[i])
11
12 print("\nMATRICA") #treći nacin
13 for red in mat:
14     for element in red:
15         print(element, ' ', end='')
16     print()
17
18 print("\nMATRICA") #četvrti nacin
19 for i in range(0,3):
20     for j in range(0,3):
21         print(mat[i][j], ' ', end='')
22     print()
```

test programa

```
MATRICA
[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
```

```
MATRICA
[1, 2, 3]
[4, 5, 6]
[7, 8, 9]
```

```
MATRICA
1 2 3
4 5 6
7 8 9
```

```
MATRICA
1 2 3
4 5 6
7 8 9
>>>
```

Drugi način zapisa matrice:

```
3 mat=[]
4 mat.append([1,2,3])
5 mat.append([4,5,6])
6 mat.append([7,8,9])
```

Zadatak 59

Sastaviti program koji učitava, a zatim ispisuje elemente matrice $m \times n$. Elementi matrice su celi brojevi.

programski kôd

```
1 #Zadatak 59
2
3 mat=list()
4 m=int(input("Broj vrsta m= "))
5 n=int(input("Broj kolona n= "))
6 print("Unesite elemente matrice A:")
7 for i in range(0,m):
8     red=list()
9     for j in range(0,n):
10         print("A",i,j,"= ",end='')
11         red.append(int(input()))
12     mat.append(red)
13
14 print("\nMATRICA") #prvi nacin
15 print(mat)
16
17 print("\nMATRICA") #drugi nacin
18 for i in range(0,m):
19     print(mat[i])
```

```
20
21 print("\nMATRICA") #treći nacin
22 for red in mat:
23     for element in red:
24         print(element, ' ',end='')
25     print()
26
27 print("\nMATRICA") #četvrti nacin
28 for i in range(0,m):
29     for j in range(0,n):
30         print(mat[i][j], ' ',end='')
31     print()
```

Drugi način unosa matrice:

```
7 for i in range(0,m):
8     mat.append([])
9     for j in range(0,n):
10         print("A",i,j,"= ",end='')
11         mat[i].append(int(input()))
```



Zadatak 59

test programa

```
Broj vrsta m= 3  
Broj kolona n= 4  
Unesite elemente matrice A:
```

```
A 0 0 = 2  
A 0 1 = 3  
A 0 2 = 4  
A 0 3 = 8  
A 1 0 = 9  
A 1 1 = 0  
A 1 2 = 8  
A 1 3 = 5  
A 2 0 = 6  
A 2 1 = 7  
A 2 2 = 7  
A 2 3 = 7
```

```
MATRICA  
[[2, 3, 4, 8], [9, 0, 8, 5], [6, 7, 7, 7]]
```

```
MATRICA  
[2, 3, 4, 8]  
[9, 0, 8, 5]  
[6, 7, 7, 7]
```

```
MATRICA  
2 3 4 8  
9 0 8 5  
6 7 7 7
```

```
MATRICA  
2 3 4 8  
9 0 8 5  
6 7 7 7  
>>>
```



Zadatak 60

Sastaviti program koji učitava matricu celih dimenzije mhn, a zatim vrši sabiranje pozitivnih i negativnih elemenata.

programski kôd

```
1 #Zadatak 60
2
3 mat=list()
4 m=int(input("Broj vrsta m= "))
5 n=int(input("Broj kolona n= "))
6 print("Unesite elemente matrice A:")
7 for i in range(0,m):
8     red=list()
9     for j in range(0,n):
10         print("A",i,j,"= ",end='')
11         red.append(int(input()))
12     mat.append(red)
13 print("\nMATRICA")
14 for i in range(0,m):
15     for j in range(0,n):
16         print(mat[i][j], ' ',end='')
17     print()
18 sp=sn=0
19 for i in range(0,m):
20     for j in range(0,n):
21         if mat[i][j]>0:
22             sp=sp+mat[i][j]
23         else:
24             sn=sn+mat[i][j]
25 print("Suma pozitivnih:", sp)
26 print("Suma negativnih:", sn)
```

test programa

```
Broj vrsta m= 3
Broj kolona n= 2
Unesite elemente matrice A:
A 0 0 = 1
A 0 1 = 4
A 1 0 = 7
A 1 1 = -2
A 2 0 = 6
A 2 1 = -6

MATRICA
1  4
7 -2
6 -6
Suma pozitivnih: 18
Suma negativnih: -8
>>>
```



Zadatak 61

Sastaviti program koji učitava dve matrice celih brojeva, A i V, obe dimenzija mhn, a zatim vrši sabiranje ove dve matrice i ispisuje novu matricu C. Matrice se sabiraju tako što se sabiraju elementi matrica sa istim indeksima.

test programa

```
Broj vrsta m= 3
Broj kolona n= 3
Unesite elemente matrice A:
A 0 0 = 2
A 0 1 = 3
A 0 2 = 4
A 1 0 = 7
A 1 1 = 8
A 1 2 = 0
A 2 0 = 9
A 2 1 = 2
A 2 2 = 4
Unesite elemente matrice B:
B 0 0 = 6
B 0 1 = 8
B 0 2 = 0
B 1 0 = 0
B 1 1 = 3
B 1 2 = 2
B 2 0 = 1
B 2 1 = 3
B 2 2 = 1
```

MATRICA A

```
2 3 4
7 8 0
9 2 4
```

MATRICA B

```
6 8 0
0 3 2
1 3 1
```

MATRICA C

```
8 11 4
7 11 2
10 5 5
>>>
```



Zadatak 61

programski kôd

```
1 #Zadatak 61
2
3 matA=list()
4 matB=list()
5 matC=list()
6 m=int(input("Broj vrsta m= "))
7 n=int(input("Broj kolona n= "))
8
9 print("Unesite elemente matrice A:")
10 for i in range(0,m):
11     red=list()
12     for j in range(0,n):
13         print("A",i,j,"= ",end='')
14         red.append(int(input()))
15     matA.append(red)
16
17 print("Unesite elemente matrice B:")
18 for i in range(0,m):
19     red=list()
20     for j in range(0,n):
21         print("B",i,j,"= ",end='')
22         red.append(int(input()))
23     matB.append(red)
```

```
24
25 for i in range(0,m):
26     red=list()
27     for j in range(0,n):
28         red.append(matA[i][j]+matB[i][j])
29     matC.append(red)
30
31 print("\nMATRICA A")
32 for i in range(0,m):
33     for j in range(0,n):
34         print(matA[i][j], ' ',end='')
35     print()
36
37 print("\nMATRICA B")
38 for i in range(0,m):
39     for j in range(0,n):
40         print(matB[i][j], ' ',end='')
41     print()
42
43 print("\nMATRICA C")
44 for i in range(0,m):
45     for j in range(0,n):
46         print(matC[i][j], ' ',end='')
47     print()
```


Zadatak 62

Sastaviti program koji će učitati matricu celih brojeva dimenzije $n \times n$, ispisati matricu u obliku tablice, a zatim sumu elemenata na glavnoj, sporednoj, iznad glavne i ispod glavne dijagonale.

programski kôd

```

1 #Zadatak 62
2
3 mat=list()
4 n=int(input("n= "))
5 print("Unesite elemente matrice:")
6 for i in range(0,n):
7     red=list()
8     for j in range(0,n):
9         print("A",i,j,"= ",end='')
10        red.append(int(input()))
11    mat.append(red)
12 print("\nMATRICA")
13 for i in range(0,n):
14     for j in range(0,n):
15         print(mat[i][j], ' ',end='')
16     print()
17 sg=ss=iznad=ispod=0
18 for i in range(0,n):
19     for j in range(0,n):
20         if i==j: sg=sg+mat[i][j]
21         if i+j==n-1: ss=ss+mat[i][j]
22         if i<j: iznad=iznad+mat[i][j]
23         if i>j: ispod=ispod+mat[i][j]
24 print("Suma na glavnoj dijagonali:",sg)
25 print("Suma na sporednoj dijagonali:",ss)
26 print("Suma iznad glavne dijagonale:",iznad)
27 print("Suma ispod glavne dijagonale:",ispod)

```

test programa

```

n= 3
Unesite elemente matrice:
A 0 0 = 2
A 0 1 = 3
A 0 2 = 4
A 1 0 = 1
A 1 1 = 7
A 1 2 = 8
A 2 0 = 9
A 2 1 = 0
A 2 2 = 2

MATRICA
2 3 4
1 7 8
9 0 2
Suma na glavnoj dijagonali: 11
Suma na sporednoj dijagonali: 20
Suma iznad glavne dijagonale: 15
Suma ispod glavne dijagonale: 10
>>>

```



Pitanja i odgovori

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