

Raul Rodriguez  
Python intro to data science

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Lab6_1.py > ...
1  '''Exercise 1
2  Given the 2D list from slide 112, convert all values to 255 if they are above a threshold or to 0
3  if they are below. The threshold value is given as input by the user. This is an example of how a
4  grayscale image is converted to a binary (black & white)'''
5  a = [[77,68,86,73],[96,87,89,81],[70,90,86,81]]
6  threshold = int(input("Enter the threshold: "))
7  for row in range(len(a)):
8      for col in range(len(a[row])):
9          if a[row][col]>threshold:
10             a[row][col]=255
11         else:
12             a[row][col]=0
13 print(a)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

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/usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab6_1.py
● s/raulrodriguez/Documents/WorkSpaceVSPython/Lab6_1.py
Enter the threshold: 80
[[0, 0, 255, 0], [255, 255, 255, 255], [0, 255, 255, 255]]
○ raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```

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Lab6_2.py > ...
1  '''Exercise 2
2  Using a single loop, ask user to enter values to 3 different lists, the first one should contain
3  the names of 3 people, the second one should contain the heights of 3 people, and the third one
4  should contain the weights of 3 people. Use the zip function to zip all three lists at the same
5  time; print list'''
6  li=[]
7  li2=[]
8  li3=[]
9  for i in range(3):
10     name=input("Enter name: ")
11     li.append(name)
12     height=input("Enter height of person: ")
13     li2.append(height)
14     weight=input("Enter the weight of person: ")
15     li3.append(weight)
16 joinList=zip(li,li2,li3)
17 print(list(joinList))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

```
● raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython % /usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab6_2.py
Enter name: Raul Rodriguez
Enter height of person: 5'11
Enter the weight of person: 190
Enter name: Bob Wilson
Enter height of person: 5'8
Enter the weight of person: 178
Enter name: Lucy Martinez
Enter height of person: 5'3
Enter the weight of person: 130
[('Raul Rodriguez', '5'11', '190'), ('Bob Wilson', '5'8", '178'), ('Lucy Martinez', '5'3", '130')]
○ raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```

Lab6\_3.py > addFunction

```
1  '''Exercise 3
2  Create a telephone dictionary where the user is asked whether they wish to add, remove,
3  modify, search for a telephone number (given the name), or exit. Use functions for each one of
4  the four different operations. Use an infinite loop'''
5  def addFunction(telephone_book):
6      name=input("Enter name you wish to add: ")
7      number=int(input("Enter number you wish to add: "))
8      telephone_book[name]=number
9      return telephone_book
10 def removeFunction(telephone_book):
11     name=input("Enter name which you would like to remove: ")
12     del telephone_book[name]
13     return telephone_book
14 def modifyFunction(telephone_book):
15     name=input("Enter name which you would like to modify: ")
16     number=int(input("Enter modified number: "))
17     telephone_book[name]=number
18     return telephone_book
19 def searchFunction(telephone_book):
20     name=input("Enter the name you would like to search: ")
21     print(telephone_book[name])
22     return telephone_book
23 telephone_book={'Raul Rodriguez':2544853956,'John Blue':9402853789,'Garret Wilson':2594857424}
24 while True:
25     print(telephone_book)
26     print("1=add,2=remove,3=modify,4=search,5=exit")
27     op=int(input("enter what operation you want to perform: "))
28     if op==1:
29         telephone_book=addFunction(telephone_book)
30     elif op==2:
31         telephone_book=removeFunction(telephone_book)
32     elif op==3:
33         telephone_book=modifyFunction(telephone_book)
34     elif op==4:
35         telephone_book=searchFunction(telephone_book)
36     elif op==5:
37         exit()
38
```

```
/usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab6_3.py
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython % /usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab6_3.py
{'Raul Rodriguez': 2544853956, 'John Blue': 9402853789, 'Garret Wilson': 2594857424}
1=add,2=remove,3=modify,4=search,5=exit
enter what operation you want to perform: 1
Enter name you wish to add: Bob Wilson
Enter number you wish to add: 2545980324
{'Raul Rodriguez': 2544853956, 'John Blue': 9402853789, 'Garret Wilson': 2594857424, 'Bob Wilson': 2545980324}
1=add,2=remove,3=modify,4=search,5=exit
enter what operation you want to perform: 2
Enter name which you would like to remove: Raul Rodriguez
{'John Blue': 9402853789, 'Garret Wilson': 2594857424, 'Bob Wilson': 2545980324}
1=add,2=remove,3=modify,4=search,5=exit
enter what operation you want to perform: 3
Enter name which you would like to modify: John Blue
Enter modified number: 2544853956
{'John Blue': 2544853956, 'Garret Wilson': 2594857424, 'Bob Wilson': 2545980324}
1=add,2=remove,3=modify,4=search,5=exit
enter what operation you want to perform: 4
Enter the name you would like to search: Garret Wilson
2594857424
{'John Blue': 2544853956, 'Garret Wilson': 2594857424, 'Bob Wilson': 2545980324}
1=add,2=remove,3=modify,4=search,5=exit
enter what operation you want to perform: 5
raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```

```
Lab6_4.py > modifyFunction
1  '''Exercise 4
2  Based on Ex. 3, create two more functions where only the names of the telephone directory
3  are listed or only the telephone numbers'''
4  def addFunction(telephone_book):
5      name=input("Enter name you wish to add: ")
6      number=int(input("Enter number you wish to add: "))
7      telephone_book[name]=number
8      return telephone_book
9  def removeFunction(telephone_book):
10     name=input("Enter name which you would like to remove: ")
11     del telephone_book[name]
12     return telephone_book
13  def modifyFunction(telephone_book):
14     name=input("Enter name which you would like to modify: ")
15     number=int(input("Enter modified number: "))
16     telephone_book[name]=number
17     return telephone_book
18  def searchFunction(telephone_book):
19     name=input("Enter the name you would like to search: ")
20     print(telephone_book[name])
21     return telephone_book
22  def printNames(telephone_book):
23     for names in telephone_book.keys():
24         print(names)
25  def printNumbers(telephone_book):
26     for values in telephone_book.values():
27         print(values)
28  telephone_book={'Raul Rodriguez':2544853956,'John Blue':9402853789,'Garret Wilson':2594857424}
29  while True:
30     print(telephone_book)
31     print("1=add,2=remove,3=modify,4=search,5=print names,6=print numbers,7=exit")
32     op=int(input("enter what operation you want to perform: "))
33     if op==1:
34         telephone_book=addFunction(telephone_book)
35     elif op==2:
36         telephone_book=removeFunction(telephone_book)
37     elif op==3:
38         telephone_book=modifyFunction(telephone_book)
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39         elif op==4:
40             telephone_book=searchFunction(telephone_book)
41         elif op==5:
42             printNames(telephone_book)
43         elif op==6:
44             printNumbers(telephone_book)
45         elif op==7:
46             exit()
```

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/usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab6_4.py
● raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython % /usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/Lab6_4.py
{'Raul Rodriguez': 2544853956, 'John Blue': 9402853789, 'Garret Wilson': 2594857424}
1=add,2=remove,3=modify,4=search,5=print names,6=print numbers,7=exit
enter what operation you want to perform: 5
Raul Rodriguez
John Blue
Garret Wilson
{'Raul Rodriguez': 2544853956, 'John Blue': 9402853789, 'Garret Wilson': 2594857424}
1=add,2=remove,3=modify,4=search,5=print names,6=print numbers,7=exit
enter what operation you want to perform: 6
2544853956
9402853789
2594857424
{'Raul Rodriguez': 2544853956, 'John Blue': 9402853789, 'Garret Wilson': 2594857424}
1=add,2=remove,3=modify,4=search,5=print names,6=print numbers,7=exit
enter what operation you want to perform: 7
○ raulrodriguez@Rauls-MacBook-Air WorkSpaceVSPython %
```