AI_Lab_2_Sol

March 22, 2021

```python
[13]: def chickens(count):
        return f"Number of chickens: {count}" if count < 10 else "Number of chickens:␣
      ↪many"
```

```python
[14]: def string_both_ends_3(s):
        return s if len(s) < 3 else s[:3]+s[len(s)-3:]
```

```python
[15]: def first_char_replace(s):
        return s[0]+s[1:].replace(s[0].lower(), '@').replace(s[0].upper(), '@')
```

```python
[16]: def string_jumble(a, b):
        return b[:2]+a[2:]+' '+a[:2]+b[2:]
```

```python
[17]: def match_first_last(words):
          return sum([1 for s in words if len(s) >= 2 and s[0] == s[-1]])
```

```python
[18]: def group_strings(words):
        return sorted(words)
```

```python
[19]: def sort_last(tuples):
        return sorted(tuples, key=lambda x:x[1])
```

```python
[20]: def main():
        print ('Number of chickens')
        print(chickens(4))
        print(chickens(9))
        print(chickens(10))
        print(chickens(99))

        print ('\n3 characters from both ends')
        print(string_both_ends_3('spring'))
        print(string_both_ends_3('Intelligence'))
        print(string_both_ends_3('a'))
        print(string_both_ends_3('xyz'))

        print ('\nReplace occurrences of first character')
        print(first_char_replace('babble'))
        print(first_char_replace('aardvark'))
```

```python
print(first_char_replace('google'))
print(first_char_replace('Ooogle'))

print ('\nString Jumble')
print(string_jumble('mix', 'pod'))
print(string_jumble('dog', 'dinner'))
print(string_jumble('gnash', 'sport'))
print(string_jumble('pezzy', 'firm'))

print ('\nMatching first and last characters')
print(match_first_last(['aba', 'xyz', 'aa', 'a', 'bbb']))
print(match_first_last(['', 'x', 'ay', 'ayx', 'ax']))
print(match_first_last(['aaa', 'be', 'abc', 'aello']))

print ('\nGroup string in a list')
print(group_strings(['bbb', 'ccc', 'axx', 'xzz', 'aaa']))
print(group_strings(['ccc', 'abb', 'aaa', 'xcc', 'aaa']))
print(group_strings(['mix', 'xyz', 'apple', 'xanadu', 'aardvark']))

print ('\nsort_last')
print(sort_last([(1, 3), (3, 2), (2, 1)]))
print(sort_last([(2, 3), (1, 2), (3, 1)]))
print(sort_last([(1, 7), (1, 3), (3, 4, 5), (2, 2)]))
```

[21]:
```python
'''
Python files .py are modules. Modules can define variables, functions, and␣
 ↪classes.
When a Python interpreter reads a Python file, it first sets a few special␣
 ↪variables.
Then it executes the code from the file.

One of those variables is called __name__.

When the interpreter runs a module, the __name__ variable will be set as ␣
 ↪__main__
if the module that is being run is the main program.

If the code is importing the module from another module, then the __name__
variable will be set to that module's name.
'''
# Standard boilerplate to call the main() function.
if __name__ == '__main__':
  main()
```

```
Number of chickens
Number of chickens: 4
Number of chickens: 9
```

```
Number of chickens: many
Number of chickens: many

3 characters from both ends
spring
Intnce
a
xyzxyz

Replace occurrences of first character
ba@@le
a@rdv@rk
goo@le
O@@gle

String Jumble
pox mid
dig donner
spash gnort
fizzy perm

Matching first and last characters
3
0
1

Group string in a list
['aaa', 'axx', 'bbb', 'ccc', 'xzz']
['aaa', 'aaa', 'abb', 'ccc', 'xcc']
['aardvark', 'apple', 'mix', 'xanadu', 'xyz']

sort_last
[(2, 1), (3, 2), (1, 3)]
[(3, 1), (1, 2), (2, 3)]
[(2, 2), (1, 3), (3, 4, 5), (1, 7)]
```
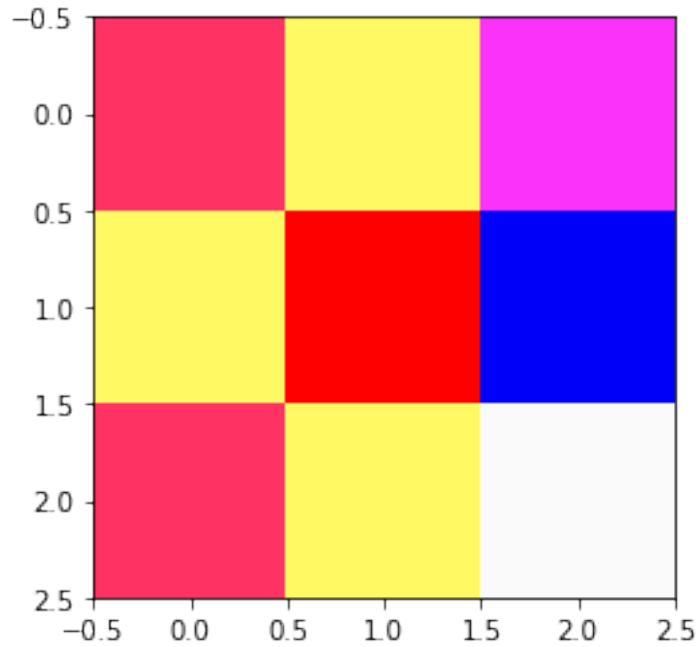
[22]:
```python
#6.8
import numpy as np
import matplotlib.pyplot as plt

def IIIDarrToImage(IIID):
    plt.imshow(IIID)

IIIDarrToImage(np.
 ↪array([[[255,50,100],[255,250,100],[250,50,250]],[[255,250,100],[255,0,0],[0,0,250]],[[255,
```

```
[23]: # 6.9
      import pandas as pd
      df = pd.read_csv('train.csv')

      print("Age between 18 and 30")
      print(len(df[(df['Age'] < 30) & (df['Age'] > 18)]))
```

```
Age between 18 and 30
245
```

```
[24]: print("Females survivers age between 18 and 30")
      print(len(df[(df['Sex'] == 'female')
                & (df['Age'] < 30)
                & (df['Age'] > 18)
                & (df['Survived'] == 1)]))
```

```
Females survivers age between 18 and 30
59
```