>>> customers = {"customer 1":['Firas','Male',31,'Munich','Germany','Arabic','English','German'],  
                 "custumer 2":['Adnan','Male',23,'Damascus','Syria','Arabic','English'],  
                 "customer 3":['Alaa','Male',33,'Stockholm','Sweden','Arabic','English','Swedish'],  
                 "customer 4":['Friend','Male',31,'Damascus','Syria','Arabic']}  
  
>>> def invert\_dict(d):  
     inverse = dict()  
       
     for key in d:  
           
         for i in range(len(d[key])):  
            val = d[key][i]  
            if val not in inverse:  
                inverse[val] = [key]  
                  
            else:  
                inverse[val].append(key)  
                  
     print(d,"\n")  
     return inverse  
>>> # call our function  
>>> print(invert\_dict(customers))

**output:**

**{'customer 1': ['Firas', 'Male', 31, 'Munich', 'Germany', 'Arabic', 'English', 'German'], 'custumer 2': ['Adnan', 'Male', 23, 'Damascus', 'Syria', 'Arabic', 'English'], 'customer 3': ['Alaa', 'Male', 33, 'Stockholm', 'Sweden', 'Arabic', 'English', 'Swedish'], 'customer 4': ['Friend', 'Male', 31, 'Damascus', 'Syria', 'Arabic']}  
{'Firas': ['customer 1'], 'Male': ['customer 1', 'custumer 2', 'customer 3', 'customer 4'], 31: ['customer 1', 'customer 4'], 'Munich': ['customer 1'], 'Germany': ['customer 1'], 'Arabic': ['customer 1', 'custumer 2', 'customer 3', 'customer 4'], 'English': ['customer 1', 'custumer 2', 'customer 3'], 'German': ['customer 1'], 'Adnan': ['custumer 2'], 23: ['custumer 2'], 'Damascus': ['custumer 2', 'customer 4'], 'Syria': ['custumer 2', 'customer 4'], 'Alaa': ['customer 3'], 33: ['customer 3'], 'Stockholm': ['customer 3'], 'Sweden': ['customer 3'], 'Swedish': ['customer 3'], 'Friend': ['customer 4']}**

* **the original Dictionary has the information of each customer: First Name, gender, age, city of residence, country of residence, Spoken languages.**
* **in our inverted dictionary, we can see the common factors between the customers, that's why our inverted dictionaryl will be useful for analytic reasons**