

Work with your neighbor. (This will be graded for participation only.)

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1. Write a function `print_keys(d)` that prints the keys in the dictionary `d`. For example, if the dictionary passed in is

```
{"I": 1, "V": 5, "X": 10, "L": 50}
```

then the function prints the following:

```
'I'  
'V'  
'X'  
'L'
```

**ANS:**

```
def print_keys(d):  
    for key in d.keys():  
        print(key)
```

2. Assume that the dictionary `d` and the list `words` are defined as follows:

```
>>> d = {}  
>>> d['one'] = 1  
>>> d['eight'] = 8  
>>> d['two'] = 2  
>>> d['seven'] = 7  
>>> d['five'] = 5  
>>>  
>>> words = ["one", "two", "three", "four", "five", "six", "seven", "eight"]
```

- a) Write a loop that prints the values of `d` that are even.

**ANS:**

```
for value in d.values():  
    if value % 2 == 0:  
        print(value)
```

- b) Write a loop that iterates through `words` and prints `True` for elements that are keys in `d` and `False` otherwise.

**ANS:**

```
for elem in words:  
    print(elem in d)
```

3. Write a function `key_of_max_value(adict)` that finds the maximum of all the values in the dictionary `adict` and returns the corresponding key. For example, if the dictionary passed in is

```
{"hello" : 34, "sunny" : 51, "the" : 82, "street" : 13}
```

then the function returns the key `"the"`. All the dictionary values are  $\geq 0$ .

**Note:** You'll have to iterate through the dictionary and keep track of the maximum value seen so far, but also keep track of the corresponding key for that value.

**ANS:**

```
def key_of_max_value(adict):
    # assumes the dictionary has at least
    # one key

    max_val = 0

    for key in adict.keys():
        if adict[key] >= max_val:
            # replace the max_val and key
            max_val = adict[key]
            key_of_max_val = key

    return key_of_max_val
```

**Note:** What if you didn't have the information that all values in the dictionary are  $\geq 0$ ? You would then need to initialize `max_val` with a value that is in the dictionary:

```
# get a list of all the keys
all_keys = list(adict.keys())

# use the first key in the list to initialize
# the the max key and max value
# assumes there is at least one key in the dictionary
key_of_max_val = all_keys[0]
max_val = adict[key_of_max_val]
```

4. Write a function `identify_unique_words(slist)` that takes a list of strings `slist`. The function returns a dictionary where the keys are the strings in `slist` and the corresponding values are 0, if the string occurred only once in `slist`, and 1 otherwise. For example, if the function is called with the list

```
['here', 'is', 'the', 'root', 'of', 'the', 'root', 'and', 'the']
```

then the dictionary returned is

```
{'here': 0, 'is': 0, 'the': 1, 'root': 1, 'of': 0, 'and': 0}
```

Notice that the strings that are unique in `slist` have a value of 0, and the words that are duplicates have a value of 1.

**ANS:**

```
def identify_unique_strs(slist):  
    all_words = {}  
    for word in slist:  
        if word in all_words:  
            all_words[word] = 1  
        else:  
            all_words[word] = 0  
  
    return all_words
```