In [1]:
```
# 1. Write a function to count the number of vowels and consonants in a given st

def countVowels(str):
    str = str.lower()
    count = 0
    for c in str:
        if( c == "a" or c == "e" or c == "i" or c == "o" or c == "u"):
            count += 1

    return count

countVowels("hello car")
```

Out[1]: 3

In [11]:
```
# 2. Write a function to return the minimum and maximum elements from a tuple.

def findMinMax(tup):
    minimum = min(tup)
    maximum = max(tup)

    print(f"minimun element = {minimum}")
    print(f"maximum element = {maximum}")

findMinMax((1,3,5,7,8,9,12,45))
```

```
minimun element = 1
maximum element = 45
```

In [15]:
```
# 3. Write code to unpack the first two elements and the rest from a tuple of un

def myUnpack(tup):

    a,b,*c = tup
    return (a,b)

myUnpack((1,2,45,76,2,56))
```

Out[15]: (1, 2)

In [19]:
```
# 4. Write a function that takes a string and returns the frequency of each word

def word_count(str):
    counts = dict()
    words = str.split()
    for word in words:
        if word in counts:
            counts[word] += 1
        else:
            counts[word] = 1

    return counts

word_count("learn to grow. learn to play")
```

Out[19]: {'learn': 2, 'to': 2, 'grow.': 1, 'play': 1}

In [21]:
```python
# 5. Write a function to find duplicate elements in a list
def find_duplicates(input_list):
    seen = set()
    duplicates = []
    for item in input_list:
        if item in seen:
            duplicates.append(item)
        else:
            seen.add(item)
    return duplicates

find_duplicates(['this','is', 'duplicate', 'this', 'is', 'good'])
```

Out[21]:
```
['this', 'is']
```

In [23]:
```python
# 6. Use a filter with a lambda function to extract even numbers from a list.

numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

even_numbers = list(filter(lambda x: x % 2 == 0, numbers))

print(even_numbers)
```

```
[2, 4, 6, 8, 10]
```

In [9]:
```python
# 7. Create a Python module named mymath.py with functions
# for addition, subtraction, and multiplication. Import and use it.

# inside myModule.py
# def add(a,b):
#     return a+b

# def sub(a,b):
#     return a-b

# def mul(a,b):
#     return a*b

import myModule as m

print(m.add(5,6))

print(m.sub(34,4))

print(m.mul(6,8))
```

```
11
30
48
```

In [11]:
```python
# 8. Sort a List of Tuples Based on the Second Element
def sortList(list_of_tuples):
    return sorted(list_of_tuples, key=lambda x: x[1])

list_of_tuples = [(1, 5), (3, 2), (2, 8), (4, 1)]
sorted_list = sortList(list_of_tuples)

print(sorted_list)
```

```
[(4, 1), (3, 2), (1, 5), (2, 8)]
```

In [17]:
```
# 9. Write a function to find the symmetric difference (elements not common)
# between two sets.

def findDiff(A, B):
   return set_A ^ set_B

set_A = {"ram", "ajay", "raj", "akash"}
set_B = {"akash", "ajay", "shyam", "ram", "raja"}

findDiff(set_A,set_B)
```

Out[17]:
```
{'raj', 'raja', 'shyam'}
```

In [41]:
```
# 10.Write a function that returns a list of prime numbers up to a given number

def findPrime(x):
    pnums = []
    if(x == 1 or x ==2):
        return x

    for num in range(2,x):
        prime = True
        for i in range(2,num):
            if (num%i==0):
                prime = False
        if prime:
            # print (num)
            pnums.append(num)
    return pnums


findPrime(8)
```

Out[41]:
```
[2, 3, 5, 7]
```

In [ ]: