

Assignment 4

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1.1 Write a Python Program(with class concepts) to find the area of the triangle using the below formula.

$$\text{area} = (s*(s-a)*(s-b)*(s-c))^{0.5}$$

Function to take the length of the sides of triangle from user should be defined in the parent class and function to calculate the area should be defined in subclass.

```
In [1]: class sqarea:
        def __init__(self,a,b,c):
            self.a = a
            self.b = b
            self.c = c

            s = (a+b+c)/2
            area = (s*(s-a)*(s-b)*(s-c)) ** 0.5
            return print(area)

        class sqarea2(sqarea):
            def __init__(self,*args):
                super(sqarea2,self).__init__(*args)
```

```
In [3]: sqarea2(4,5,6)

9.921567416492215
```

```
Out[3]: <__main__.sqarea2 at 0x1eb9fd2f748>
```

1.2 Write a function `filter_long_words()` that takes a list of words and an integer `n` and returns the list of words that are longer than `n`.

```
In [8]: def filter_long_words(words,n):  
        list =[]  
        a= words.split(" ")  
        for i in a:  
            if len(i)>n:  
                list.append(i)  
        return list
```

```
In [10]: filter_long_words("India is my country",4)
```

```
Out[10]: ['India', 'country']
```

2.1 Write a Python program using function concept that maps list of words into a list of integers representing the lengths of the corresponding words.

Hint: If a list `[ab,cde,erty]` is passed on to the python function output should come as `[2,3,4]`

Here 2,3 and 4 are the lengths of the words in the list.

```
[10] def map_list_words(text):  
    l = []  
    for i in text:  
        l.append(len(i))  
    return l
```

```
▶ text = ['now', 'we', 'will', 'transition', 'to', 'data', 'science']  
map_list_words(text)
```

```
↳ [3, 2, 4, 10, 2, 4, 7]
```

2.2 Write a Python function which takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.

```
▶ def isvowel(input):  
    vowel = ['a', 'e', 'i', 'o', 'u']  
    if input in vowel:  
        return True  
    else:  
        return False
```

```
▶ isvowel('j')
```

```
↳ False
```