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

formula.

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.

**Code:**

class Triangle(object):

def sides(self,a,b,c):

a=float(a)

b=float(b)

c=float(c)

class area(Triangle):

def area(self,perimeter,s):

Perimeter = a + b + c

s = (a + b + c) / 2

Area = (s\*(s-a)\*(s-b)\*(s-c)) \*\* 0.5

a = float(input('Please Enter the First side of a Triangle: '))

b = float(input('Please Enter the Second side of a Triangle: '))

c = float(input('Please Enter the Third side of a Triangle: '))

print("\n The Perimeter of Traiangle = %.2f" %Perimeter);

print(" The Semi Perimeter of Traiangle = %.2f" %s);

print(" The Area of a Triangle is %0.2f" %Area)

**Output:**

Please Enter the First side of a Triangle: 3

Please Enter the Second side of a Triangle: 5

Please Enter the Third side of a Triangle: 4

The Perimeter of Traiangle = 12.00

The Semi Perimeter of Traiangle = 6.00

The Area of a Triangle is 6.00

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.

**Code:**

def filter\_long\_words(wordlist, length):

return (word for word in wordlist if len(word) >= length)

def main():

words = input("Enter words, separated by spaces: ").split()

length = int(input("Minimum length of words to keep: "))

print("Words longer than {} are {}.".format(length,', '.join(filter\_long\_words(words, length))))

main()

**Output:**

Enter words, separated by spaces: as dfd vcsvfvf

Minimum length of words to keep: 2

Words longer than 2 are as, dfd, vcsvfvf.

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.

**Code:**

def map\_list\_to\_len(words):

lengths = []

for word in words:

lengths.append(len(word))

return lengths

if \_\_name\_\_ == "\_\_main\_\_":

words = ['test', 'abc', 'biggest one']

print (map\_list\_to\_len(words))

**Output:**

[4, 3, 11]

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.

**Code:**

def is\_vowel(char):

vowels = ('a', 'e', 'i', 'o', 'u')

if char not in vowels:

return False

return True

if \_\_name\_\_ == "\_\_main\_\_":

print (is\_vowel('a'))

print (is\_vowel('z'))

**Output:**

True

False