Session_3_Assignment

1.1 Write a Python Program to implement your own myreduce() function which works exactly

like Python's built-in function reduce()

In [1]:

```python
# Writing myreduce function

def myreduce(function, sequence):
    tally = sequence[0]
    for next in sequence[1:]:
        tally = function(tally, next)
    return tally



list = [47,11,42,13,10]
myreduce( lambda x,y: x+y, list)

#print((lambda x, y: x + y), list)
```

Out[1]:

```
123
```

1.2 Write a Python program to implement your own myfilter() function which works exactly like

Python's built-in function filter()

In [2]:

```
def even(X):
    if not X % 2:
        return X
    return False

def myFilter(f, L):
    result = []
    for x in L:
        if f(x):
            result.append(x)
    return result

list = [47,11,42,13,10]

myFilter(even, list)

#myFilter(lambda seq : [ x for x in seq if str(x)[-1] in "02468" ],list)
```

Out[2]:

```
[42, 10]
```

2. Implement List comprehensions to produce the following lists.

In [3]:

```
[x for x in 'ACADGLID' if x !=" "]
```

Out[3]:

```
['A', 'C', 'A', 'D', 'G', 'L', 'I', 'D']
```

In [4]:

```
[x for x in 'AxxxCADGLID' if x in ('x','xx')  ]
```

Out[4]:

```
['x', 'x', 'x']
```

In [5]:

```
#Output = ['x', 'xx', 'xxx', 'xxxx', 'y', 'yy', 'yyy', 'yyyy', 'z', 'zz', 'zzz',

word = [ 'x','y','z']
print([i*j for i in word for j in range(1,5)])
```

```
['x', 'xx', 'xxx', 'xxxx', 'y', 'yy', 'yyy', 'yyyy', 'z', 'zz', 'zzz', 'zzzz']
```

In [6]:

```
#Output = ['x', 'y', 'z', 'xx', 'yy', 'zz', 'xx', 'yy', 'zz', 'xxxx', 'yyyy', 'zz

word = [ 'x','y','z']
print([i*j for j in range(1,5)for i in word ])
```

```
['x', 'y', 'z', 'xx', 'yy', 'zz', 'xxx', 'yyy', 'zzz', 'xxxx', 'yyyy', 'zzzz']
```

In [7]:

```
#Output = [[2], [3], [4], [3], [4], [5], [4], [5], [6]]

number = [ 1,2,3]
print([[i+j] for j in range(1,4)for i in number ])
```

```
[[2], [3], [4], [3], [4], [5], [4], [5], [6]]
```

In [8]:
```
#Output = [[2, 3, 4, 5], [3, 4, 5, 6], [4, 5, 6, 7], [5, 6, 7, 8]]

number = [ 1,2,3,4]
print([[i+j for j in range(1,5)]for i in number ])
```

```
[[2, 3, 4, 5], [3, 4, 5, 6], [4, 5, 6, 7], [5, 6, 7, 8]]
```

In [9]:
```
#Output =  [(1, 1), (2, 1), (3, 1), (1, 2), (2, 2), (3, 2), (1, 3), (2, 3), (3, 3

number1 = (1,2,3)
number2 = (1,2,3)

print([(i,j) for i in number1 for j in number2 ])
```

```
[(1, 1), (1, 2), (1, 3), (2, 1), (2, 2), (2, 3), (3, 1), (3, 2), (3, 3)]
```

3.0 Implement a function longestWord() that takes a list of words and returns the longest one.

In [10]:
```
def longestWord(words_list):
    word_len = []
    for n in words_list:
        word_len.append((len(n), n))
    word_len.sort()
    return word_len[-1][1]

longestWord(['ACADGLID', 'Machine', 'Learn'])
```

Out[10]:
```
'ACADGLID'
```

In [ ]: