iNeuron Assignment 3 Python:

1.1 Write a Python Program to implement your own myreduce() function which works exactly like Python's built-in function reduce()?

Solution:

```python
#Sum of First n Natural numbers , Ask user for Number.


def myreduce(num):
    ''' This functionn will return sum of n Natural numbers'''
    num_list=list(range(1,number+1))
    sum_of_elements=0

    for i in num_list:
        sum_of_elements+=i

    return num_list,sum_of_elements

number=int(input("Please insert the number :"))

#Function Execution
output_value=myreduce(number)

#Output
print("Output:")
```

1.2 Write a Python program to implement your own myfilter() function which works exactly like Python's built-in function filter()?

Solution:

```python
# Filter the even and odd number from list which are multiples  of 5

#Input
number=int(input("Please insert the number: "))

num_list=list(range(1,number+1))


def myfilter(num_list):
    '''This function will filter even and odd numbers from list which are
multiples of 5 '''
    num_even_list=[]
    num_odd_list=[]

    for i in num_list:
        if(i%5==0):
            if(i%2==0):
```

```python
                num_even_list.append(i)
            else:
                num_odd_list.append(i)

    return num_even_list,num_odd_list



#Function Execution
output_value=myfilter(num_list)

#Output

print("Output:")
```

2. Implement List comprehensions to produce the following lists. Write List comprehensions to produce the following Lists?

1.['A', 'C', 'A', 'D', 'G', 'I', 'L', ' D']

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

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

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

5.[4, 5, 6, 7], [5, 6, 7, 8]]

6.[(1, 1), (2, 1), (3, 1), (1, 2), (2, 2), (3, 2), (1, 3), (2, 3), (3, 3)]

Solution:

```python
word="AcadGild"
#list Comprehension
output_list=[w.upper() for w in list(word)]
print("Output:")
print(output_list)

word_1=list('xyz')
#list Comprehension
word_2=[x*n for x in word_1 for n in range(1,5) ]
print(word_2)

#list Comprehension
word_3=[x*n for n in range(1,5) for x in word_1 ]
print(word_3)

number=[2,3,4]
#list Comprehension
number_1=[[x+n] for x in number for n in range(0,3)]
print(number_1)
```

```python
number_2=[2,3,4,5]
#list Comprehension
number_3=[[x+n for n in range(0,4)] for x in number_2 ]
print(number_3)


number_4=[1,2,3]
#list Comprehension
number_5= [(b,a) for a in number_4 for b in number_4]
print(number_5)
```