Assignment-4(RID:001,Name:Madhur Jodhwani)

1.Write a program which contains one lambda function which accepts one parameter and return power of two.

Input : 4 Output : 16

Input : 6 Output : 64

```
ans=lambda no1:no1**2

print("Enter the number whose is square is required")
no=int(input())
print("Square of",no,"is:",ans(no))
```

2.Write a program which contains one lambda function which accepts two parameters and return its multiplication.

Input : 4 3 Output : 12

Input : 6 3 Output : 18

```
ans=lambda no1,no2:no1*no2

print("Enter 1st number")
value1=int(input())
print("enter second number")
value2=int(input())
print(value1,"*",value2,"=",ans(value1,value2))
```

3.Write a program which contains filter(), map() and reduce() in it. Python application which contains one list of numbers. List contains the numbers which are accepted from user. Filter should filter out all such numbers which greater than or equal to 70 and less than or equal to 90. Map function will increase each number by 10. Reduce will return product of all that numbers.

Input List = [4, 34, 36, 76, 68, 24, 89, 23, 86, 90, 45, 70]

List after filter = [76, 89, 86, 90, 70]

List after map = [86, 99, 96, 100, 80]

Output of reduce = 6538752000

```
def Filter(values):
```

```
    i=0
    while i < len(values):
        if values[i]>=70 and values[i]<=90:
            brr.append(values[i])
        i=i+1


def Map(data):
    i=0
    while i < len(data):
        data[i]=data[i]+10
        i=i+1



def Reduce(data):
    product=1
    i=0
    while i<len(data):
        product=product*data[i]
        i=i+1
    return product

arr=[]
brr=[]
print("Enter number of elements in the list")
no=int(input())
i=0
while i < no:
    print("Enter value for element no:",i+1)
    arr.append(int(input()))
    i+=1
print("Entered data is:",arr)
Filter(arr)
print("Data after Filter is:",brr)
Map(brr)
print("Data after Map is:",brr)
print("Data after Reduce is",Reduce(brr))
```

4.Write a program which contains filter(), map() and reduce() in it. Python application which contains one list of numbers. List contains the numbers which are accepted from user. Filter should filter out all such numbers which are even. Map function will calculate its square.

Reduce will return addition of all that numbers.

Input List = [5, 2, 3, 4, 3, 4, 1, 2, 8, 10]

List after filter = [2, 4, 4, 2, 8, 10]

List after map = [4, 16, 16, 4, 64, 100]

Output of reduce = 204

```
import functools

arr=[]
print("Enter number of elements in the list")
no=int(input())
i=0
while i < no:
    print("Enter value for element no:",i+1)
    arr.append(int(input()))
    i+=1
print("Entered data is:",arr)
newdata1=list(filter(lambda no1:(no1%2==0),arr))
print("Data after Filter is:",newdata1)
newdata2=list(map(lambda no:(no**2),newdata1))
print("Data after Map is:",newdata2)
ans=functools.reduce(lambda no1,no2: no1 + no2, newdata2)
print("Data after Reduce is",ans)
```

5.Write a program which contains filter(), map() and reduce() in it. Python application which contains one list of numbers. List contains the numbers which are accepted from user. Filter should filter out all prime numbers. Map function will multiply each number by 2. Reduce will return Maximum number from that numbers. (You can also use normal functions instead of lambda functions).

Input List = [2, 70 , 11, 10, 17, 23, 31, 77]

List after filter = [2, 11, 17, 23, 31]

List after map = [4, 22, 34, 46, 62]

Output of reduce = 62

```
import functools

def ChkPrime(num):
    if num > 1:
```

```
        for i in range(2, num):
            if (num % i) == 0:
                return False
        else:
           return True
    else:
        return True

def Max(values):
    i=0
    max=0
    while i<len(values):
        if max<values[i]:
            max=values[i]
        i=i+1
    return max

arr=[]
brr=[]
print("Enter number of elements in the list")
no=int(input())
i=0
while i < no:
    print("Enter value for element no:",i+1)
    arr.append(int(input()))
    i+=1
print("Entered data is:",arr)
i=0
while i < len(arr):
    if ChkPrime(arr[i])==True:
        brr.append(arr[i])
    i=i+1
print("Data after Filter is:",brr)
newdata2=list(map(lambda no:(no*2),brr))
print("Data after Map is:",newdata2)
print("Data after Reduce is",Max(newdata2))
```