Lab1

Data Structures and Algorithms

Maira usman

21B-011-SE

In [3]:
```
# // your code goes here
def is_multiply(m,n):
    if n%m==0:
        return True
    else:
        return False
a=is_multiply(3,10)
b=is_multiply(3,12)
print(a)
print(b)
```

```
False
True
```

In [2]:
```
def is_even(k):
    a= [i for i in range(0,k+2,2)]
    if k in a:
        return True
    else :
        return False
x=is_even(9)
y=is_even(8)
print(x)
print(y)
```

```
False
True
```

In [4]:
```
def EvenList(n):
    a=[]
    n=n.split(",")
    for i in range (1,len(n)+1):
        if i%2 ==0:
            a.append(i)
    return a
n=input("enter numbers seperated by comma")
x=EvenList(n)
print(x)
```

```
enter numbers seperated by comma1,2,3,3,5,6,8,4,9,10
[2, 4, 6, 8, 10]
```

In [5]:
```
def minmax(data):
    a=data[0]
    b=data[0]
    for i in range(len(data)):
        if a >data[i]:
            a=data[i]
        if b<data[i]:
            b=data[i]
    return (a,b)
x=minmax([6,2,1,4,5,5])
print(x)
```

```
(1, 6)
```

In [6]:
```
def sumsquares(n):
    a=0
    for i in range(n+1):
        a+=i**2
    return a
x=sumsquares(6)
print(x)
```

```
91
```

In [7]:
```
def sumoddsquares(k):
    a=0
    for i in range(k+1):
        if i%2!=0:
            a+=i**2
    return a
x=sumoddsquares(6)
print(x)
```

```
35
```

In [4]:
```
def distinctoddpairgen(array):
    a=[]
    for i in range (len(array)-1):
        for j in range(len(array)):
            if (j,i) not in a:
                if (array[i]*array[j])%2!=0 and i!=j:
                    a.append((array[i],array[j]))
    return a
x=distinctoddpairgen([1,3,4,6,7])
print(x)
```

```
[(1, 3), (1, 7), (3, 1), (3, 7)]
```

In [1]:
```
def distinctoddpairgen(array):
    a=[]
    for i in range (len(array)-1):
        print(i)
        for j in range(len(array)):
            if (array[i]*array[j])%2!=0 and i!=j:
                a.append((array[i],array[j]))
    return a
x=distinctoddpairgen([1,3,4,6,7])
print(x)
```

```
0
1
2
3
[(1, 3), (1, 7), (3, 1), (3, 7)]
```

In [9]:
```
def Reverse(list):
    return list[::-1]
x=Reverse([1,2,3,4,5])
print(x)
```

```
[5, 4, 3, 2, 1]
```

In [10]:
```
def Unique(y):
    return  list(set(y))
x=Unique([1,2,3,3,4,4,5,6,7,5])
print(x)
```

```
[1, 2, 3, 4, 5, 6, 7]
```

In [13]:
```
def UserNumbers(y):
    a=[i for i in range(1,len(y)+1) if i %2 ==0 ]
    print(a)
    print("last element: ",a[-1])
    print(max(a))
    print(min(a))
    print(a[-2])
user=input("enter numbers comma seperated")
UserNumbers(user.split(","))
```

```
enter numbers comma seperated1,2,3,4,5,6,7,8,9,10
[2, 4, 6, 8, 10]
last element:  10
10
2
8
```

In [14]:
```
def ShowExcitement(y):
    for i in range(5):
        print(y,end=" ")
x="A quick brown fox jumps over the lazy dog"
ShowExcitement(x)
```

```
A quick brown fox jumps over the lazy dog A quick brown fox jumps over the lazy dog A quick brown fox jumps over the lazy dog A quick brown fox jumps over the lazy dog A quick brown fox jumps over the lazy dog
```

In [15]:
```
def Greater(n1, n2, n3):
    a=[n1,n2,n3]
    return(max(a))
print(Greater(3,5,8))
```

```
8
```

In [16]:
```
def divide(dividend,divisor):
    return (dividend//divisor,dividend%divisor)

print(divide(10,3))
```

```
(3, 1)
```

In [17]:
```
class Person:
    def __init__ (self, name, age):
        self.name=name
        self.age=age

    def birthday(self):
        self.age+=1
        return self.age
a=Person("myra",19)
print (a.birthday())
```

```
20
```

END

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: