1.

```
def isFlip(n):
    c1 = 0
    c0 = 0
    print(n)
    for i in n:
        if i == "0":
            c0 +=1
        else:
            c1 +=1
    if c0==1 or c1==1 :
        return "Yes"
    return "No"
num = input("Enter the binary number:\n")
print(isFlip(num))
```

2.

```
def lowup(s):
    d = {"No. of Upper Case Characters":0,"No. of Lower Case Characters":0}
    for i in s:
        if i.isupper():
            d["No. of Upper Case Characters"] += 1
        elif i.islower():
            d["No. of Lower Case Characters"] += 1
    for key in d:
        print(key," : ",d[key])
lowup(input("Enter a String:\n"))
```

3.

```
def perfect(n):
    sum_divisor = 0
    for i in range(1,n):
        if n%i ==0:
            sum_divisor += i
    if n == sum_divisor:
        print("Yes")
    else:
        print("No")
perfect(int(input("Enter a Number:\n")))
```

4.

```
def sort_hyphen(s):
    l = s.split("-")
    l.sort()
    print('-'.join(l))
sort_hyphen(input("Enter a sequence seperated by '-'\n"))
```

5.

```
#This Program is not generic as I could not figure out
#how to take a nested list and work with it
def recListSum(arr):
    total = 0
    for i in arr:
        if type(i)== type([]):
            total += recListSum(i)
        else:
            total += int(i)
    return total
l = [1,2,[3,4],[5,6]]
sum = recListSum(l)
print(sum)
```

6.

```
def digitSum(n):
    if n<10:
        return n
    else:
        return digitSum(n%10 + digitSum(n//10))

sum = digitSum(int(input("Enter a Number:\n")))
print(sum)
```

7.

```
def posSum(n):
    if n<1:
        return 0
    else:
        return n + posSum(n-2)

sum = posSum(int(input("Enter a Number:\n")))
print(sum)
```

8.

```
def geoSum(a,r,n):
    if n==0:
        return 0
    else:
        return a*(pow(r,n-1)) + geoSum(a,r,n-1)


l = (input("Enter a, r and n seperated by spaces:\n")).split()
a = int(l[0])
r = int(l[1])
n = int(l[2])
sum = geoSum(a,r,n)
print(sum)
```

9.

```
def power(a,b):
    if b==0:
        return 1
    else:
        return a*power(a,b-1)



l = (input("Enter the no. and its power seperated by a comma:\n")).split(",")
a = int(l[0])
b = int(l[1])
sum = power(a,b)
print(sum)
```

10.

```
def primeFactList(n,i=2):
    if i<=n:
        if(n%i==0):
            print(i,end=" ")
            primeFactList(n//i,i)
        else:
            primeFactList(n,i+1)

    return ""


n = int(input("Enter a Number:\n"))
print(primeFactList(n))
```