1.

```
#searches and identifies the pattern "ISE USN" in the input string

import re
string=input("Enter the string")
pattern="ISE USN"
match=re.search(pattern,string)
if match:
        print('pattern found')
else:
        print('pattern not found')
```

2.

```
#From the given usn it checks if they are CSE or not

import re
text=input("Enter USN\n")
pattern=r"4nm21cs\d{3}"
match = re.search(pattern,text)
if match:
        print("USN pattern found ",match.group())
else:
        print("not found")
```

3.

```
(i)#decimal to binary
num=int(input("enter the number\n"))
temp=num
bin=' '
while(num>0):
        bin=str(num%2)+bin
        num=num//2
print("the bin value of ",temp, "is ", bin);

(ii)#decimal to octal
num=int(input("enter the number\n"))
temp=num
oct=' '
while(num>0):
```

```
        oct=str(num%8)+oct
        num=num//8
print("the octal value of ",temp, "is ", oct);

(iii)#binary to decimal
binary=int(input("Enter the binary number"))
temp=binary
decimal=0
power=0
while(binary !=0):
        digit=binary%10
        decimal=decimal+digit*(2**power)
        binary=binary//10
        power=power+1
print("the decimal value of the binary number ",temp," is ",decimal)

(iv)#octal to decimal
octal=int(input("Enter the octal number"))
temp=octal
decimal=0
power=0
while(octal !=0):
        digit=octal%10
        decimal=decimal+digit*(8**power)
        octal=octal//10
        power=power+1
print("the decimal value of the octal number ",temp," is ",decimal)
```

4.

```
#armstrong numbers
num=int(input("Enter a number"))
temp=num
sum=0
while(num>0):
        digit=num%10
        sum=sum+(digit**3)
        num=num//10
if(temp==sum):
        print("armstrong numbers")
else:
        print("not armstrong numbers")
```

5.

```
#palindrome numbers
num=int(input("enter the number"))
temp=num
new=0
while(num!=0):
        digit=num%10
        new=new*10+digit
        num=num//10
if(new==temp):
        print("the number is a palindrome")
else:
        print("the number is not a palindrome")
```

6.

```
#stone paper scissor
import random
print("enter 1 for stone\t 2 for paper\t 3 for scissor\n")
choice=int(input("enter your choice\n"))
computer=random.randint(1,2,3)
if(choice==1 and computer==1):
        print("Draw")
elif(choice==1 and computer==2 ):
        print("Computer wins")
elif(choice==1 and computer==3):
        print("You win")
elif(choice==2 and computer==1):
        print("You win")
elif(choice==2 and computer==2 ):
        print("Draw")
elif(choice==2 and computer==3):
        print("Computer wins")
elif(choice==3 and computer==1):
        print("Computer wins")
elif(choice==3 and computer==2 ):
        print("You win")
else:
        print("Draw")
```

7.

```
#count number of words in the sentence

sentence=input("enter the sentence\n")
count=0
word=False
for char in sentence:
        if char != ' ' and not word:
                count=count+1
                word=True
        elif char == ' ':
                word=False
print("number of words in the sentence is ",count)
```

8.

```
#generate prime numbers between lower limit and upper limit

lower=int(input("enter lower limit\n"))
upper=int(input("enter upper limit\n"))
list =[]
for num in range(lower,upper):
        for i in range(2,int(num**0.5)+1):
                if num%i !=0:
                        list.append(num)
print("the list of prime numbers between the given limits is " ,list)
```

9.

```
#display multiples of 7 and not of 5 in the range 10 to 50

low=10
high=50
numbers=[]
for num in range(low,high):
```

```
        if num%7==0 and num%5!=0:
                numbers.append(num)
print(numbers)
```

10.

```
#slice the string and print it
str=input("enter the string\n")
start=int(input("start index for the slice"))
end=int(input("end index for the slice"))
sliced=str[start:end]
print("the sliced string is ",sliced)
```

11.

```
#store the string characters in a list and reverse the order of the string

string=input("enter the string")
list=[]
revstr=' '
for char in string:
        list.append(char)
while list:
        revstr=revstr + list.pop()
print("reversed string is "+revstr)
```

12.

```
#store the string characters in a list and check if it is palindrome
text=input("enter string :")
a=""
for i in text:
   a=i+a
if a==text:
   print('palindrome string')
else:
   print('not palindrome string')
```

13.

```
#display the content of the string by inserting a substring in between.

text=input('enter the string')
subs=input('enter the substring')
n=int(input('enter index'))
print(text[:n]+subs+text[n:])
```

14.

```
#count vowels in a string
str=input("enter the string")
vowels="aeiouAEIOU"
count=0
for char in str:
        if char in vowels:
                count=count+1
print("total number of vowels in the given string is ",count)
```

15.

```
#remove part of the string in list and display it

str=input("enter the string")
start=int(input("start index for the part of the index to be removed"))
end=int(input("end index for the part of the index to be removed"))
list=[]
for char in str:
        list.append(char)
newstr=''
for i in range(len(list)):
        if i<start or i>end:
                newstr=newstr+list[i]
```

```
print("new string is "+newstr)
```