

```
1 #Lagrange Interpolation : python script using for loop
2
3 #Defining the Lagrange Interpolation as LagIntp
4 def LagIntp(x, y, xp):      #xp the x value where yp has to calculated
5     m = len(x)
6     n = len(y)
7     assert m==n
8     L = 0
9     l = [1]*n
10    for i in range(n):
11        for j in range(n):
12            if j != i:
13                l[i]*=(xp-x[j])/(x[i]-x[j])
14        L = L + y[i]*l[i]
15    return L
16
17 #Enter the x values
18 x=eval(input('Enter the x values:'))
19 #Enter the corresponding y values
20 y=eval(input('Enter the y values:'))
21 #Enter the xp value where corresponding yp required to calculate
22 xp=eval(input('Enter the xp value:'))
23 print('Value of yp at xp from interpolation:', LagIntp(x, y, xp))
24
```