

IET DSA python SMP

Assignment1

4.

```
print("Enter the coordinates: ")
x1 = float(input("x1 = "))
y1 = float(input("y1 = "))
x2 = float(input("x2 = "))
y2 = float(input("y2 = "))
x3 = float(input("x3 = "))
y3 = float(input("y3 = "))
area = (x1*y2 - x1*y3 + x2*y3 -x2*y1 + x3*y1 - x3*y2)/2
print("Area  = ",abs(area))
```

O/p

Enter the coordinates:

```
x1 = 5
y1 = 6
x2 = 8
y2 = 4
x3 = 5
y3 = 8
Area  =  3.0
```

1.

```
str1 = 'sohan has 500 rupees.'
str2 = 'there are 50 students. '
str3 = 'i have 15 bananas.'
s3 = set(str1)
s1 = set(str2)
s2 = set(str3)
common_char = s1 & s2 & s3
print("Common characters in all given strings :",common_char)
```

O/p

Common characters in all given strings :

```
{'5', '.', 'n', 's', ' ', 'a', 'h', 'e'}
```

2.

```
from array import *
str=input("Enter a string ")
from math import sqrt,ceil
m=0
j=0
x=ceil(sqrt(len(str)))
a=[["*" for i in range(x)]for j in range(x)]
while(m<x):
    i=0
    while((i<=m) and (j<len(str))):
        a[m-i][i]=str[j]
        print(a[i][m-i])
        j+=1
        i+=1
    m+=1
m-=1
while(m>=0):
    i=x-m
    while((i<=m) and (j<len(str))):
        a[x+m-2-i][i]=str[j]
        j+=1
        i+=1
    m-=1
for b in range(x):
    print(a[b])
```

O/p

Enter a string PYHTON

['P', 'H', 'N']

['Y', 'O', '*']

['T', '*', '*']