Practical No. 02 (Group A)

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Problem Statement :

Write a Python program that determines the location of a saddle point of matrix if one

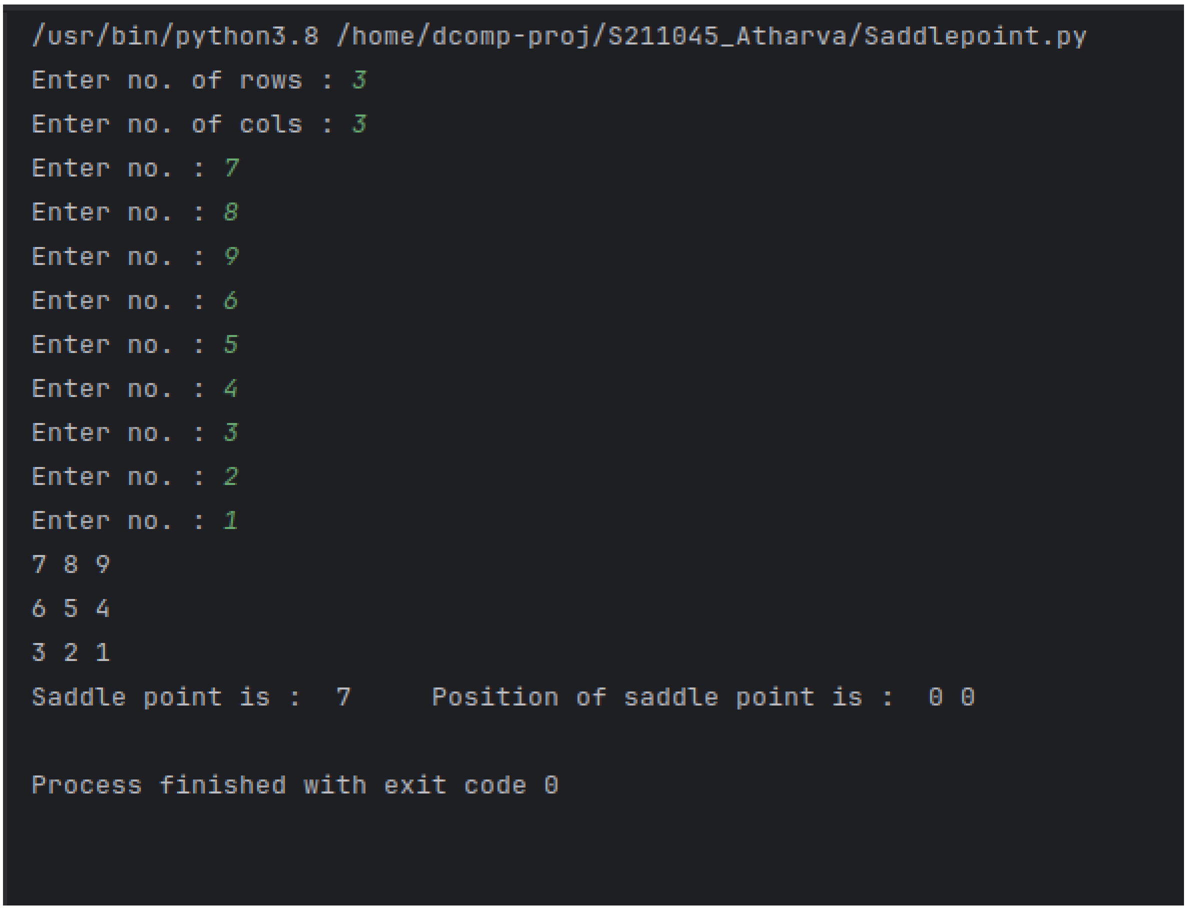
exists. An m x n matrix is said to have a saddle point if some entry a[i][j] is the

smallest value in row i and the largest value in j.

Code :

```
# FINDING SADDLE POINT IN MATRIX
mat = []
m = int(input("Enter no. of rows : "))
n = int(input("Enter no. of cols : "))
for i in range(0,m):
   a = []
   for j in range(0,n):
      num = int(input("Enter no. : "))
      a.append(num)
   mat.append(a)
for i in range(0,m):
   for j in range(0,n):
      print(mat[i][j], end=" ")
   print()
def saddle():
   for i in range(0,m):
      min_row = mat[i][0]
      col = 0
      # min = min_row
      for j in range(0,n):
          if(min_row > mat[i][j]):
              min_row = mat[i][j]
              col = j
      saddlepoint = True
      max = mat[0][col]
      for k in range(0,m):
          if(mat[k][col] > max):
              saddlepoint = False
              break
      if(min_row == max):
          return min_row, i, col
          break
if(saddle()):
   val,col,row = saddle()
   print("Saddle point is : ",val,"\t","Position
of saddle point is : ",col,row)
else:
   print("No Saddlepoint found")
```

Output :



```
/usr/bin/python3.8 /home/dcomp-proj/S211045_Atharva/Saddlepoint.py
Enter no. of rows : 3
Enter no. of cols : 3
Enter no. : 7
Enter no. : 8
Enter no. : 9
Enter no. : 6
Enter no. : 5
Enter no. : 4
Enter no. : 3
Enter no. : 2
Enter no. : 1
7 8 9
6 5 4
3 2 1
Saddle point is :  7     Position of saddle point is :  0 0

Process finished with exit code 0
```