

**Modern Education Society's  
College of Engineering, Pune**

<b>NAME OF STUDENT:</b> Sandesh Santosh Pabitwar	<b>CLASS:</b> Comp A
<b>SEMESTER/YEAR:</b> III sem	<b>ROLL NO:</b> F2011040
<b>DATE OF PERFORMANCE:</b>	<b>DATE OF SUBMISSION:</b> 19/11/ 2021
<b>EXAMINED BY:</b> Anand Dhawale	<b>EXPERIMENT NO:</b> DSL A-01

**TITLE : PERFORM VARIOUS OPERATIONS ON ARRAY**

**PROBLEM STATEMENT:** In second year computer engineering class, group A student's play cricket, group B students play badminton and group C students play football.

Write a Python program using functions to compute following: -

- a) List of students who play both cricket and badminton
- b) List of students who play either cricket or badminton but not both
- c) Number of students who play neither cricket nor badminton
- d) Number of students who play cricket and football but not badminton.

(Note- While realizing the group, duplicate entries should be avoided, do not use SET built-in functions)

**OBJECTIVES:**

1. To understand structure of Array.
2. To understand How Create, Display and perform various operations on array.

**OUTCOMES:**

1. To analyze the problems to apply suitable algorithm and data structure.
2. To discriminate the usage of various data structures in approaching the problem solution.
3. To understand concept of linear data structure

**PRE-REQUISITES:**

1. Knowledge of python programming
2. Knowledge of array

**APPARATUS:**

```

1 c = list(map(int, input('enter roll no. who play cricket:').split()))
2 b = list(map(int, input('enter roll no. who play badminton:').split()))
3 f = list(map(int, input('enter roll no. who play football:').split()))
4
5 it=[]
6 cb=[]
7 u=[]
8 f_o=[]
9
10 def union(c,b,f):
11     for i in c:
12         if i not in u:
13             u.append(i)
14     for j in b:
15         if j not in u:
16             u.append(j)
17     for k in f:
18         if k not in u:
19             u.append(k)
20
21     union(c,b,f)
22
23 def intersection(c,b):
24     #finding intersection between cricket and badminton
25     intersection=0
26     global it
27     for i in c:
28         for j in b:
29             if i==j:
30                 intersection+=1
31                 it.append(i)
32     print('there are {} student who play both cricket and badminton'.format(intersection))
33     print('student who play both cricket and badminton',it)
34 def cricket_badminton(c,b):
35     #finding student who play either cricket or badminton but not both
36     global it
37     global cb
38
39     for i in c:
40         if i not in cb:
41             cb.append(i)
42     for j in b:
43         if j not in cb:
44             cb.append(j)
45     for k in cb:
46         if k in it:
47             cb.remove(k)
48
49
50     print('student who play either cricket or badminton but not both:',end=' ')
51     print(cb)
52
53
54
55 def football(c,b):
56     # finding student who neither play cricket nor badminton
57     for p in u:
58         if p not in c and p not in b:
59             f_o.append(p)
60     print('student who neither play cricket nor badminton',f_o)
61
62 def c_f_notB(c,b,f):
63     cf_o=u

```

```

64     for i in u:
65         if i in c and i in f:
66             cfo.append(i)
67     for j in cfo:
68         if j in b:
69             cfo.remove(j)
70
71     print('student who play cricket and football but not badminton are',cfo)
72
73
74 while True:
75     print('*****MAIN MENU*****')
76     print('1.list of student who play both cricket and badminton\n'
77           '2.list of student who play either cricket or badminton but not both\n'
78           '3.no of student who play neither cricket nor badminton\n'
79           '4.no of student who play cricket and football but not badminton ')
80     ch=int(input('enter choice'))
81     print('#####')
82     print('*****')
83
84     if ch==1:
85         intersection(c, b)
86         break
87     if ch==2:
88         cricket_badminton(c, b)
89         break
90     if ch==3:
91         football(c,b)
92         break
93     if ch==4:
94         c_f_notB(c, b, f)
95
96         break

```

# Output:

```
C:\Users\sspab\PycharmProjects\new\venv\Scripts\python.exe "C:/Users/sspab/PycharmProjects/new/sem 3/FDS Q1.p
enter roll no. who play cricket :1 2 3 4 5
enter roll no. who play badminton :4 5 6 7 8
enter roll no. who play football :5 6 8 10
*****MAIN MENU*****
1.list of student who play both cricket and badminton
2.list of student who play either cricket or badminton but not both
3.no of student who play neither cricket nor badminton
4.no of student who play cricket and football but not badminton
enter choice1
#####
*****
there are 2 student who play both criket and badminton
student who play both criket and badminton [4, 5]

Process finished with exit code 0
```

```
C:\Users\sspab\PycharmProjects\new\venv\Scripts\python.exe "C:/Users/sspab/PycharmProjects/new/sem
enter roll no. who play cricket :1 2 3 4 5
enter roll no. who play badminton :3 4 5 6 7
enter roll no. who play football :5 6 7 8 9
*****MAIN MENU*****
1.list of student who play both cricket and badminton
2.list of student who play either cricket or badminton but not both
3.no of student who play neither cricket nor badminton
4.no of student who play cricket and football but not badminton
enter choice2
#####
*****
student who play either cricket or badminton but not both: [1, 2, 3, 4, 5, 6, 7]
```

```
C:\Users\sspab\PycharmProjects\new\venv\Scripts\python.exe "C:/Users/sspab/PycharmProjects/new
enter roll no. who play cricket :1 2 3 4 5
enter roll no. who play badminton :3 4 5 6
enter roll no. who play football :5 6 7 8 9
*****MAIN MENU*****
1.list of student who play both cricket and badminton
2.list of student who play either cricket or badminton but not both
3.no of student who play neither cricket nor badminton
4.no of student who play cricket and football but not badminton
enter choice3
#####
*****
student who neither play cricket nor badminton [7, 8, 9]
```