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Q batch Comp-2

Group A-1

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.

CODE :-

cricket = []

badminton = []

football = []

total\_cricket = int(input("Enter the number of students who play cricket-\n"))

for i in range(total\_cricket):

roll\_number\_cricket = int(input("Enter the roll number of the student-\n"))

if roll\_number\_cricket not in cricket:

cricket.append(roll\_number\_cricket)

else:

pass

total\_badminton = int(input("Enter the number of students who play badminton-\n"))

for i in range(total\_badminton):

roll\_number\_badminton = int(input("Enter the roll number of the student-\n"))

if roll\_number\_badminton not in badminton:

badminton.append(roll\_number\_badminton)

else:

pass

total\_football = int(input("Enter the number of students who play football-\n"))

for i in range(total\_football):

roll\_number\_football = int(input("Enter the roll number of the student-\n"))

if roll\_number\_football not in football:

football.append(roll\_number\_football)

else:

pass

def both\_cricket\_and\_badminton(cricket,badminton):

cricket\_and\_badminton = []

for i in cricket:

if i in badminton:

cricket\_and\_badminton.append(i)

for j in badminton:

if j in cricket and j not in cricket\_and\_badminton:

cricket\_and\_badminton.append(j)

return cricket\_and\_badminton

def cricket\_or\_badminton\_but\_not\_both(cricket,badminton):

cricket\_or\_badminton\_not\_both = []

for i in cricket:

if i not in badminton:

cricket\_or\_badminton\_not\_both.append(i)

else:

pass

for j in badminton:

if j not in cricket and j not in cricket\_or\_badminton\_not\_both:

cricket\_or\_badminton\_not\_both.append(j)

else:

pass

return cricket\_or\_badminton\_not\_both

def neither\_cricket\_nor\_badminton(cricket,badminton,football):

neither\_cricket\_nor\_badminton\_count = 0

for i in football:

if i not in cricket and i not in badminton:

neither\_cricket\_nor\_badminton\_count += 1

else:

pass

return neither\_cricket\_nor\_badminton\_count

def cricket\_and\_football\_not\_badminton(cricket,badminton,football):

cricket\_and\_football\_not\_badminton = []

for i in cricket:

if i in football and i not in badminton and i not in cricket\_and\_football\_not\_badminton:

cricket\_and\_football\_not\_badminton.append(i)

else:

pass

for j in football:

if j in cricket and j not in badminton and j not in cricket\_and\_football\_not\_badminton:

cricket\_and\_football\_not\_badminton.append(j)

cricket\_and\_football\_not\_badminton\_count = 0

for k in cricket\_and\_football\_not\_badminton:

cricket\_and\_football\_not\_badminton\_count += 1

return cricket\_and\_football\_not\_badminton\_count

print("Students who play both cricket and badminton- ",both\_cricket\_and\_badminton(cricket,badminton))

print("Students who play cricket or badminton but not both- ",cricket\_or\_badminton\_but\_not\_both(cricket,badminton))

print("Number of students who play neither cricket nor badminton- ",neither\_cricket\_nor\_badminton(cricket,badminton,football))

print("Number of students who play cricket and football but not badmininton- ",cricket\_and\_football\_not\_badminton(cricket,badminton,football))

OUTPUT :-

Enter the number of students who play cricket- 5

Enter the roll number of the student- 1

Enter the roll number of the student- 2

Enter the roll number of the student- 3

Enter the roll number of the student- 4

Enter the roll number of the student- 6

Enter the number of students who play badminton- 4

Enter the roll number of the student- 3

Enter the roll number of the student- 1

Enter the roll number of the student- 8

Enter the roll number of the student- 7

Enter the number of students who play football- 3

Enter the roll number of the student- 8

Enter the roll number of the student- 2

Enter the roll number of the student- 5

Students who play both cricket and badminton- [1, 3]

Students who play cricket or badminton but not both- [2, 4, 6, 8, 7]

Number of students who play neither cricket nor badminton- 1

Number of students who play cricket and football but not badmininton- 1