Set operation

```
#include<stdio.h>
#include<stdlib.h> void
main()
{
 int ch,X[50],Y[50],Z[50],m,n,i;
do  {
   printf("\nInput choice to perform: ");
   printf("\n1.Union\t2.Intersection\t3.Difference\t4.Exit");
printf("\nChoice: ");    scanf("%d",&ch);
  switch(ch)
  {
   case 1:printf("\nEnter cardinality of first set: ");
scanf("%d",&m);
         printf("\nEnter cardinality of second set: ");
scanf("%d",&n);          if(m!=n)
         {
         printf("\nCannot perform union!");
break;
          }
         printf("\nEnter elements of first set:(0/1) ");
for(i=0;i<m;i++)
         {
           scanf("%d",&X[i]);
          }
         printf("\nEnter elements of second set:(0/1) ");
for(i=0;i<n;i++)
```

```
        {
          scanf("%d",&Y[i]);
         }
        printf("\nElements of set1 union set2: ");
for(i=0;i<m;i++)
        {
         Z[i]=X[i]|Y[i];
printf("%d ",Z[i]);
         }
break;
  case 2:printf("\nEnter cardinality of first set: ");
scanf("%d",&m);
        printf("\nEnter cardinality of second set: ");
scanf("%d",&n);
        if(m!=n)
        {
        printf("\nCannot perform intersection!");
break;
         }
        printf("\nEnter elements of first set:(0/1) ");
for(i=0;i<m;i++)
        {
          scanf("%d",&X[i]);
         }
        printf("\nEnter elements of second set:(0/1) ");
for(i=0;i<n;i++)
        {
          scanf("%d",&Y[i]);
         }
```

```
        printf("\nElements of set1 intersection set2:");
for(i=0;i<m;i++)
        {
         Z[i]=X[i]&Y[i];
printf("%d ",Z[i]);
         }
break;
  case 3:printf("\nEnter cardinality of first set: ");
scanf("%d",&m);
        printf("\nEnter cardinality of second set: ");
scanf("%d",&n);          if(m!=n)
        {
        printf("\nCannot perform difference!");
break;
         }
        printf("\nEnter elements of first set:(0/1) ");
for(i=0;i<m;i++)
        {
          scanf("%d",&X[i]);
         }
        printf("\nEnter elements of second set:(0/1) ");
for(i=0;i<n;i++)
        {
          scanf("%d",&Y[i]);
         }
        for(i=0;i<n;i++)
        {
```

```
          if(X[i]==0)
Z[i]=0;
else            {
          if(Y[i]==1)
Z[i]=0;
          else
Z[i]=1;
          }
          }
          printf("\nElements of set1 - set2: ");
for(i=0;i<m;i++)
          {
          printf("%d ",Z[i]);
          }
          break;
   case 4:printf("\nProgram exit successfully!");
          exit(0);
          break;
   default:printf("\nInvalid choice!");
   };
  }while(1);

 }
```

Output

```
Input choice to perform:
1.Union 2.Intersection  3.Difference    4.Exit
Choice: 1

Enter cardinality of first set: 3

Enter cardinality of second set: 3

Enter elements of first set:(0/1) 1
0
1

Enter elements of second set:(0/1) 0
1
0

Elements of set1 union set2: 1 1 1
Input choice to perform:
1.Union 2.Intersection  3.Difference    4.Exit
Choice: 2

Enter cardinality of first set: 3

Enter cardinality of second set: 3

Enter elements of first set:(0/1) 1
0
1

Enter elements of second set:(0/1) 0
1
1

Elements of set1 intersection set2:0 0 1
Input choice to perform:
1.Union 2.Intersection  3.Difference    4.Exit
Choice: 3

Enter cardinality of first set: 3

Enter cardinality of second set: 3

Enter elements of first set:(0/1) 0
1
0

Enter elements of second set:(0/1) 1
0
1

Elements of set1 - set2: 0 1 0
```