

```

#include<stdio.h>

#include<stdlib.h>

void main()

{

int ch,A[50],B[50],C[50],m,n,l;

do

{

printf("\n\n1.Union \n2.Intersection\n3.Difference\n4.Exit");

printf("\nEnter your Choice : ");

scanf("%d",&ch);

Switch(ch)

{

Case 1:printf("Enter cardinality of first set: ");

scanf("%d",&m);

printf("Enter cardinality of second set: ");

scanf("%d",&n);

if(m!=n)

{

printf("Cannot perform union! \n");

break;

}

printf("Enter elements of first set(0/1) ");

for(i=0;i<m;i++)

{

scanf("%d",&A[i]);

}

printf("Enter elements of second set: ");

for(i=0;i<n;i++)

{

```

```

        scanf("%d",&B[i]);
    }
    printf("Elements of set1 union set2(0/1) ");
    for(i=0;i<m;i++)
    {
        C[i]=A[i] | B[i];
        printf("%d ",C[i]);
    }
    break;

```

Case 2:printf("Enter cardinality of first set: ");

```

scanf("%d",&m);
printf("Enter cardinality of second set: ");
scanf("%d",&n);
If(m!=n)
{
    printf("Cannot perform intersection!\n");
    break;
}
printf("Enter elements of first set(0/1) ");
for(i=0;i<m;i++)
{
    scanf("%d",&A[i]);
}
printf("Enter elements of second set: ");
for(i=0;i<n;i++)
{
    scanf("%d",&B[i]);
}
printf("Elements of set1 intersection set2: (0/1)");

```

```

        for(i=0;i<m;i++)
        {
            C[i]=A[i]&B[i];
            printf("%d ",C[i]);
        }
    break;

```

Case 3:printf("Enter cardinality of first set: ");

```
scanf("%d",&m);
```

```

    printf("Enter cardinality of second set: ");
    scanf("%d",&n);
    if(m!=n)
    {
        printf("Cannot perform difference!\n");
        break;
    }

```

printf("Enter elements of first set(0/1) ");

```
for(i=0;i<m;i++)
```

```

    {
        scanf("%d",&A[i]);
    }

```

printf("Enter elements of second set(0/1) ");

```
for(i=0;i<n;i++)
```

```

    {
        scanf("%d",&B[i]);
    }

```

```
for(i=0;i<n;i++)
```

```

    {
        if(A[i]==0)
            C[i]=0;
    }

```

```

        else
        {
            If(B[i]==1)
                C[i]=0;
            else
                C[i]=1;
        }
    }

    printf("Elements of set1 – set2: ");
    for(i=0;i<m;i++)
    {
        printf("%d ",C[i]);
    }

    break;

Case 4:printf("\nProgram exit successfully! ");
    exit(0);
    break;

default:printf("\nInvalid choice!");
};

}while(1);
}

```

Output:-

```
1.Union
2.Intersection
3.Difference
4.Exit
Enter your 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: 1
0
0
Elements of set1 union set2:(0/1) 1 0 1

1.Union
2.Intersection
3.Difference
4.Exit
Enter your 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: 1
0
0
Elements of set1 intersection set2: (0/1)1 0 0

1.Union
2.Intersection
3.Difference
4.Exit
Enter your Choice : 3
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) 1
0
0
Elements of set1 - set2: 0 0 1

1.Union
2.Intersection
3.Difference
4.Exit
Enter your Choice : 4

Program exit successfully!
[Program finished]
```