

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++)
```

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        {
            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]);
    }

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        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++)
    {

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        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
```