LAB 9
ABHINAV ANAND ROLL-22052611 SEC-B16

```
//q1)Perform the union and intersection of two integer arrays.
#include <stdio.h>

int main() {
   int arr1[5] = {2, 4, 6, 8, 10};
   int arr2[4] = {3, 6, 9, 12};
   // Union
   int union_arr[10];
   int a=0;
   for (int i = 0; i < 4; i++) {
      int found= 0;
      for (int j = 0; j < 5; j++) {
         if (arr2[i] == arr1[j]) {
            found = 1;
            break;
         }
      }
      if (!found) {
         union_arr[a++] = arr2[i];
      }
   }
   // Intersection
   int intersect_arr[10];
   int b = 0;
   for (int i = 0; i < 5; i++) {
      for (int j = 0; j < 4; j++) {
         if (arr1[i] == arr2[j]) {
            intersect_arr[b++] = arr1[i];
            break;
         }
      }
   }

   printf("Union: ");
   for (int i = 0; i<a; i++) {
      printf("%d ", union_arr[i]);
   }
   printf("\nIntersection: ");
   for (int i = 0; i < b; i++) {
      printf("%d ", intersect_arr[i]);
   }

   return 0;
}
```

Output-

Union: 3 9 12

Intersection: 6

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//q2)Given an array of positive integers of size n, find the minimum repeating number and its frequency in this array.

```
#include<stdio.h>
void main(){
   int arr[100];
   int min,n,i,feq=0,ele;
   printf("ENTER THE NUMBER OF THE ELEMENTS: ");
   scanf("%d",&n);
   for(i=0;i<n;i++){
      printf("ENTER THE ELEMENT: ");
      scanf("%d",&arr[i]);
   }
   for ( i = 0; i < n; i++){
      int temp=0;
      ele=arr[i];
      for (int j = 0; j <n; j++){
         if (arr[i]==arr[j] && arr[i]!=-1)
         {
            ++temp;
            arr[j]=-1;
         }
      }
      if(feq<temp){
         min=ele;
         feq=temp;
      }
   }
      printf("ELEMENT %d FREQUENCY %d",min,feq);
}
```

Output-

ENTER THE NUMBER OF THE ELEMENTS: 5

ENTER THE ELEMENT: 2

ENTER THE ELEMENT: 1

ENTER THE ELEMENT: 1

ENTER THE ELEMENT: 3

ENTER THE ELEMENT: 3

ELEMENT 2 FREQUENCY 1

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//q3)Given two sorted arrays and a number x, find the pair whose sum is equal to x and the pair has an element from each array.

```
#include<stdio.h>
int main(){
   int arr1[4] = {1, 4, 5, 7};
   int arr2[4] = {10, 20, 30, 40};
   int x;
   printf("Enter the sum: \n");
   scanf("%d",&x);
   for(int i=0;i<4;i++){
      for(int j=0;j<4;j++){
         if (arr1[i]+arr2[j]==x){
            printf("%d and %d",arr1[i],arr2[j]);
            break;
         }
      }
   }
}
```

Output-

```
Enter the sum:
31
1 and 30
```

//q4)Given three arrays sorted in non-decreasing order, print all common elements in these arrays.

```
#include<stdio.h>
int main(){
   int arr1[4]={3,5,7,9};
   int arr2[4]={1,7,9,11};
   int arr3[4]={2,5,7,9};
   int i,j,k;
   for(i=0;i<4;i++){
      for(j=0;j<4;j++){
         for(k=0;k<4;k++){
            if(arr1[i]==arr2[j] && arr2[j]==arr3[k] && arr3[k]==arr1[i]){
               printf("%d\n",arr1[i]);
            }
         }
      }
   }
}
```

Output-

```
7
9
```

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```
//q5)Add, subtract, and multiply the elements of two arrays.
#include<stdio.h>
int main(){
   int arr3[5],arr4[5],arr5[5];
   int arr1[5]={1,2,3,4,5};
   int arr2[5]={6,7,8,9,10};
   for(int i=0;i<5;i++){
      arr3[i]=arr1[i]+arr2[i];
      arr4[i]=arr1[i]-arr2[i];
      arr5[i]=arr1[i]*arr2[i];
   }
   printf("The Addition of two arrays is: \n");
   for(int j=0;j<5;j++){
      printf("%d ",arr3[j]);
   }
   printf("\nThe Subtraction of two arrays is: \n");
   for(int k=0;k<5;k++){
      printf("%d ",arr4[k]);
   }
   printf("\nThe Product of two arrays is: \n");
   for(int l=0;l<5;l++){
      printf("%d ",arr5[l]);
   }
}
```

Output-

```
The Addition of two arrays is:
7 9 11 13 15
The Subtraction of two arrays is:
-5 -5 -5 -5 -5
The Product of two arrays is:
6 14 24 36 50
```

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```
//q6)Search an element in an array and count the number of times that element is present.
#include<stdio.h>
void main()
{
   int arr[100];
   int n, i=0,temp,c=0;
   printf("ENTER THE  NO OF ELEMENTS: ");
   scanf("%d",&n);
   printf("ENTER THE ELEMENT TO BE SEARCHED: ");
   scanf("%d",&temp);
   for(i=0;i<n;i++)
   {
      printf("Enter The Element: ");
      scanf("%d",&arr[i]);
   }
   for(i=0;i<n;i++)
   {
      if(arr[i]==temp)
      {
         c++;
      }
   }
   if(c==0){
      printf("ELEMENT IS NOT FOUND");
   }
   else{
      printf("ELEMENT %d IS FOUND %d TIMES",temp,c);

   }
}
```

Output-

```
ENTER THE  NO OF ELEMENTS: 5
ENTER THE ELEMENT TO BE SEARCHED: 2
Enter The Element: 1
Enter The Element: 2
Enter The Element: 9
Enter The Element: 2
Enter The Element: 2
ELEMENT 2 IS FOUND 3 TIMES
```

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```
//q7)Sort the elements of an array both in ascending and descending order.
#define SIZE 10
#include<stdio.h>
int main(){
   int arr[SIZE];
   int i,j,temp;
   printf("Enter elements of the array: \n");
   for(i=0;i<SIZE;i++){
      scanf("%d",&arr[i]);
   }
   for(i=0;i<SIZE-1;i++){
      for(j=i+1;j<SIZE;j++){
         if(arr[i]>arr[j]){
            temp=arr[i];
            arr[i]=arr[j];
            arr[j]=temp;
         }
      }
   }
   printf("The Ascending Sorted Array is:\n");
   for(i=0;i<SIZE;i++){
      printf("%d\t", arr[i]);
   }
   printf("\nThe Descending Sorted Array is:\n");
   for(int j=SIZE-1;j>=0;j--){
      printf("%d\t", arr[j]);
   }
   printf("\n");

}
```

Output-

```
130
7
9
21
16
1
26
10
The Ascending Sorted Array is:
1      2      7      9      10     16     21     26     90     130
The Descending Sorted Array is:
130    90     26     21     16     10     9      7      2      1
```

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```
//q8)Reverse the elements of an array without using a 2nd array.
#include<stdio.h>
void main(){
   int i,j,temp,arr[5]={2,9,7,6,5};
   for(i=0,j=4;i<j;i++,j--){
      temp=arr[i];
      arr[i]=arr[j];
      arr[j]=temp;
   }
   printf("After reversing the array is: ");
   for(int i=0;i<5;i++){
      printf("%d ",arr[i]);
   }
   printf("\n");
}
```

Output-
After reversing the array is: 5 6 7 9 2