**Array related problems (total 21 questions)**

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| **SL** | **Problem statement** | **Difficulty levels** |
|  | WAP that will take n integer numbers into an array, and then print all the integers into reverse order (from the last valid index to index 0).   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 5  1 2 3 4 5 | 5 4 3 2 1 | | 6  2 8 3 9 0 1 | 1 0 9 3 8 2 |   #include <stdio.h>  int main()  {  int n,i;  scanf("%d",&n);  int m[n];  printf("Enter the values of the array=\n");  for(i=0;i<n;i++){  scanf("%d ",&m[i]);  }  for(i=n-1;i>=0;i--){  printf("%d ",m[i]);  }  return 0;  } | \* |
|  | WAP that will take n integer numbers into an array, and then sum up all the integers in that array.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 5  1 2 3 4 5 | 15 | | 6  2 8 3 9 0 1 | 23 |   #include <stdio.h>  int main()  {  int n,i,sum=0;  scanf("%d",&n);  int array[n];  printf("Enter the values of the array=");  for(i=0;i<n;i++){  scanf("%d ",&array[i]);    sum=sum+array[i];  }  printf("sum=%d",sum);    return 0;  } | \* |
|  | WAP that will take n integer numbers into an array, and then sum up all the even integers in that array.   |  |  | | --- | --- | | Sample input | Sample output | | 5  1 2 3 4 5 | 6 | | 6  2 8 3 9 0 1 | 10 |   #include <stdio.h>  int main()  {  int n,i,sum=0;  scanf("%d",&n);  int a[n];    printf("Enter the values: ");  for(i=0;i<n;i++){  scanf("%d ",&a[i]);}  for(i=0;i<=n-1;i++){  if(a[i]%2==0)  sum=sum+a[i];  }  printf("sum of even number=%d",sum);  return 0;  } | \* |
| **4.** | WAP that will take n floating point numbers into an array, and then find the average of those numbers.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 5  1.2 5.6 10.3 4.5 5.2 | 5.36 | | 8  2.1 8.3 3.7 9.2 0.6 1.5 6.4 10.1 | 8.38 |   #include <stdio.h>  int main()  {  int n,i;  float avg=0,sum=0;  scanf("%d",&n);  float a[n];  printf("Enter the values: ");  for(i=0; i<n; i++)  {  scanf("%f ",&a[i]);  }  for(i=0; i<=n-1; i++)  {  sum=sum+a[i];  }  avg=sum/n;  printf("Avg=%.2f",avg);  return 0;  } | \* |
| **5.** | WAP that will take n integer numbers into an array, and then sum up all the even indexed integers in that array.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 5  1 2 3 4 5 | 9 | | 6  2 8 3 9 0 1 | 5 |   #include <stdio.h>  int main()  {  int n,i,sum=0;  scanf("%d",&n);  int a[n];  printf("Enter the values: ");  for(i=0;i<n;i++){  scanf("%d ",&a[i]);  if(i%2==0)  sum=sum+a[i];  }  printf("sum of even number=%d",sum);  return 0;  } | \* |
| **6.** | Wap that will take n integer numbers in an array, n different integer numbers in a second array and put the sum of the same indexed numbers from the two arrays in a third array.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 5  1 2 3 4 5  2 8 3 4 8 | 3 10 6 8 13 | | 8  2 8 3 9 0 1 6 10  5 1 4 8 9 3 1 5 | 7 9 7 17 9 4 7 15 |   #include <stdio.h>  int main()  {  int n,i,sum=0;  scanf("%d",&n);  int a[n],b[n],ab[n];  printf("Enter the value of a:\n");  for(i=0;i<n;i++){  scanf("%d",&a[i]);  }  printf("Enter the value of b:\n");  for(i=0;i<n;i++){  scanf("%d",&b[i]);  }  printf("Value of AB array:\n");  for(i=0;i<n;i++){  ab[i]=a[i]+b[i];  printf("%d\n",ab[i]);  }  return 0;  } |  |

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| **7.** | WAP that will take n integer numbers into an array, and then reverse all the integers within that array. Finally print them all from 0 index to last valid index.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 5  1 2 3 4 5 | 5 4 3 2 1 | | 6  2 8 3 9 0 1 | 1 0 9 3 8 2 |   #include <stdio.h>  int main()  {  int n, i, arrIndex, revIndex;  scanf("%d", &n);  int a[n], r[n];  printf("Enter elements in array: ");  for (i = 0; i < n; i++)  {  scanf("%d", &a[i]);  }  revIndex = 0;  arrIndex = n - 1;  while (arrIndex >= 0)  {  r[revIndex] = a[arrIndex];  revIndex++;  arrIndex--;  }  printf("\nReversed array : ");  for (i = 0; i < n; i++)  {  printf("%d\t", r[i]);  }  return 0;  } | \*\* |
| **8.** | WAP that will take n integer numbers into an array, and then find the maximum -minimum among them with its index position.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 5  1 2 3 4 5 | Max: 5, Index: 4  Min: 1, Index: 0 | | 6  2 8 3 9 0 1 | Max: 9, Index: 3  Min: 0, Index: 4 |   #include <stdio.h>  #define MAX\_SIZE 100  int main()  {  int arr[MAX\_SIZE];  int i,j,k, max, min, n;  scanf("%d", &n);  printf("Enter elements in the array: ");  for(i=0; i<n; i++)  {  scanf("%d", &arr[i]);  }  max = arr[0];  min = arr[0];  for(i=1; i<n; i++)  {  if(arr[i] > max)  {  max = arr[i];  j=i;  }  else if(arr[i] < min)  {  min = arr[i];  k=i;  }  }  printf("Max: %d, Index: %d\n", max,j);  printf("Min: %d, Index: %d", min,k);  return 0;  } | \*\* |
| **9.** | WAP that will take n alphabets into an array, and then count number of vowels in that array.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 7  AKIOUEH | Count: 5 | | 29  UNITEDINTERNATIONALUNIVERSITY | Count: 13 |   #include <stdio.h>  int main()  {  int n,i,count=0;  scanf("%d",&n);  char m[n];  for(i=0;i<n;i++){  scanf("%c",&m[i]);  }  for(i=0;i<n;i++){  if (m[i]=='A'|| m[i]=='E'|| m[i]=='I'||m[i]=='O'||m[i]=='U'){  count=count+1;  }  }  printf("Count:%d",count);  return 0;  } | \* |
| **10.** | WAP that will take n integers into an array, and then search a number into that array. If found then print its index. If not found then print “NOT FOUND”.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 3 2 6 4 3  3 | FOUND at index position: 3, 7 | | 8  7 8 1 3 2 6 4 3  5 | NOT FOUND |   #include <stdio.h>  int main()  {  int n,i,x,j,flag;  scanf("%d",&n);  int a[n];  printf("Enter the values of the array=\n");  for(i=0;i<n;i++){  scanf("%d",&a[i]);  }  printf("searching value:\n");  scanf("%d",&x);  for(i=0;i<n;i++){  if(a[i]==x){  j=i;  flag=1;  }  }  if(flag==1){  printf("FOUND at Index position:%d,%d\n",j,j);  }  else {  printf("NOT FOUND\n");  }  return 0;  } | \* |

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| **11.** | WAP that will take n integers into an array A, and then copy all numbers in reverse order from array A to another array B. Finally show all elements of both array A and B.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 3 2 6 4 3 | Array A : 7 8 1 3 2 6 4 3  Array B : 3 4 6 2 3 1 8 7 | | 3  3 2 1 | Array A : 3 2 1  Array B : 1 2 3 |   #include <stdio.h>  int main()  {  int n,i;  scanf("%d",&n);  int a[n];  printf("Enter the values of the array=\n");  for(i=0;i<n;i++){  scanf("%d ",&a[i]);  }  printf("Array A: ");  for(i=0;i<n;i++){  printf("%d\t",a[i]);  }  printf("\n");  printf("Array B: ");  for(i=n-1;i>=0;i--){  printf("%d\t",a[i]);  }  return 0;  } | \* |
| **12.** | WAP that will take n integer numbers as input in an array and then insert a number in a position specified by the user in the array.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 10  9 11 34 23 16 15 2 37 89 54  number: 78 position: 4 | 9 11 34 23 78 16 15 2 37 89 54 | | 5  32 14 9 48 6  number: 16 position: 0 | 16 32 14 9 48 6 |   #include<stdio.h>  int main(){  int a[40],pos,i,n,value;  scanf("%d",&n);  printf("enter the value: ");  for(i=0;i<n;i++){  scanf("%d",&a[i]);  }  printf("Position:");  scanf("%d",&pos);  printf("Number:");  scanf("%d",&value);  for(i=n;i>=pos-1;i--){  a[i+1]=a[i];  }  a[pos]= value;    printf("final array after inserting the value is\n");  for(i=0;i<=n;i++){  printf("%d\n",a[i]);  }  return 0;  } | \*\* |
| **13.** | WAP that will take n integer numbers as input in an array and then delete a number from a position specified by the user in the array.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 10  9 11 34 23 16 15 2 37 89 54  position: 4 | 9 11 34 23 15 2 37 89 54 | | 5  32 14 9 48 6  position: 0 | 14 9 48 6 |   #include<stdio.h>  #define MAX\_SIZE 100  int main(){  int a[ MAX\_SIZE],pos,i,n,value;  scanf("%d",&n);  printf("enter the value: ");  for(i=0;i<n;i++){  scanf("%d",&a[i]);  }  printf("Position: ");  scanf("%d",&pos);  for(i=pos-1; i<n-1; i++){  a[i]=a[i+1];  }  n--;  printf("Ater Deleating the value:\n");  for(i=0;i<n;i++)  printf("%d\n",a[i]);  return 0;  } | \* |
| **14.** | WAP that will first take n integers into an array A and then m integers into array B. Now swap all elements between array A and B. Finally show all elements of both array A and B.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 3 2 6 4 3  3  3 2 1 | Array A : 3 2 1  Array B : 7 8 1 3 2 6 4 3 |   #include<stdio.h>  #define MAX\_SIZE 100  int main(){  int arrA[ MAX\_SIZE],arrB[ MAX\_SIZE],i,n1,n2;  printf("enter size for first array: ");  scanf("%d",&n1);  printf("Array of A values:\n");  for(i=0;i<=n1-1;i++){  scanf("%d",&arrA[i]);  }  printf("enter size for second array: ");  scanf("%d",&n2);  printf("Array of B values:\n");  for(i=0;i<=n2-1;i++){  scanf("%d",&arrB[i]);  }  printf("Array A:\n");  for(i=0;i<n2;i++){  printf("%d\n",arrB[i]);  }  printf("Array B:\n");  for(i=0;i<n1;i++){  printf("%d\n",arrA[i]);  }  return 0;  } | \*\* |
| **15.** | WAP that will take n positive integers into an array A. Now find all the integers that are divisible by 3 and replace them by -1 in array A. Finally show all elements of array A.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 3 2 6 4 3 | 7 8 1 -1 2 -1 4 -1 | | 3  3 2 1 | -1 2 1 |   #include<stdio.h>  #define MAX\_SIZE 100  int main()  {  int a[ MAX\_SIZE],i,n;  scanf("%d",&n);  printf("Enter the values:\n");  for(i=0; i<=n-1; i++)  {  scanf("%d",&a[i]);  }  for(i=0; i<=n-1; i++)  {  if (a[i]%3==0)  {  a[i]=-1;  }  printf("%d ",a[i]);  }  return 0;  } | \* |
| **16.** | WAP that will take n positive integers into an array A. Now find all the integers that have an odd index and replace them by 0 in array A. Finally show all elements of array A.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 3 2 6 4 3 | 7 0 1 0 2 0 4 0 | | 3  3 2 1 | 3 0 1 |   #include<stdio.h>  #define MAX\_SIZE 100  int main()  {  int a[ MAX\_SIZE],i,n;  scanf("%d",&n);  printf("Enter the values:\n");  for(i=0; i<=n-1; i++)  {  scanf("%d",&a[i]);  }  for(i=0; i<=n-1; i++)  {  if(i%2!=0)  {  a[i]=0;  }  printf("%d ",a[i]);  }  return 0;  } |  |
| **17.** | WAP that will take n integers into an array A. Now sort them in ascending order within that array. Finally show all elements of array A.  Reference: <http://en.wikipedia.org/wiki/Bubble_sort>   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 3 2 6 4 3 | 1 2 3 3 4 6 7 8 | | 3  3 2 1 | 1 2 3 |   #include <stdio.h>  int main(){  int n,i,j,num;  scanf("%d",&n);  int a[n];  for(i=0;i<n;i++){  scanf("%d",&a[i]);  }  for(i=0;i<n;i++){  for(j=i+1;j<n;j++){  if(a[i]>a[j]){  num=a[i];  a[i]=a[j];  a[j]=num;  }  }  }  printf("New array:\n ");  for(i=0;i<n;i++){  printf("%d ",a[i]);  }  return 0;  } | \*\*\* |

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| **18.** | WAP that will take n integers into an array A. Now remove all duplicates numbers from that array. Finally print all elements from that array.   |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  2 8 1 3 2 6 4 3 | 2 8 1 3 6 4 | | 3  3 3 3 | 3 | | 4  6 7 8 9 | 6 7 8 9 |   #include <stdio.h>  #define MAX\_SIZE 100  int main ()  {  int a[MAX\_SIZE], i, j, k, n;  scanf (" %d", &n);  printf ("Enter elements of an array:\n ",n);  for ( i=0;i<n; i++)  {  scanf (" %d",&a[i]);  }  for ( i=0;i<n;i++)  {  for ( j=i+1;j<n;j++)  {  if ( a[i] == a[j])  {  for ( k = j; k<n-1; k++)  {  a[k] = a[k + 1];  }  n--;  j--;  }  }  }  printf ("\nArray elements after deletion of the duplicate elements: ");  for ( i=0; i<n; i++)  {  printf (" %d \t", a[i]);  }  return 0;  } | \*\* |
| **19.** | WAP that will take n integers into array A and m positive integers into array B. Now find the intersection (set operation) of array A and B.     |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 5 2 6 4 3  6  1 3 6 0 9 2 | 1 2 6 3 | | 3  1 2 3  2  4 5 | Empty set |   #include<stdio.h>  #define MAX\_SIZE 100  int main()  {  int arrA[MAX\_SIZE],arrB[MAX\_SIZE],arrC[MAX\_SIZE],i,j,k,n1,n2;  printf("enter size for first array: ");  scanf("%d",&n1);  printf("Array of A values:\n");  for(i=0; i<n1; i++)  {  scanf("%d",&arrA[i]);  }  printf("enter size for second array: ");  scanf("%d",&n2);  printf("Array of B values:\n");  for(j=0; j<n2; j++)  {  scanf("%d",&arrB[j]);  }  k=0;  for(i=0; i<n1; i++)  {  for(j=0; j<n2; j++)  {  if(arrA[i]==arrB[j])  {  arrC[k]=arrA[i];  k++;  }  }  }  if(k==0)  {  printf("Empty Set");  }  else  {  for(i=0; i<k; i++)  {  printf("%d ",arrC[i]);  }  }  return 0;  } | \*\* |
| **20.** | WAP that will take n integers into an array A and m positive integers into array B. Now find the union (set operation) of array A and B.     |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 5 2 6 4 3  6  1 3 6 0 9 2 | 7 8 1 5 2 6 4 3 0 9 | | 3  1 2 3  2  4 5 | 1 2 3 4 5 |   #include<stdio.h>  #define MAX\_SIZE 100  int main()  {  int arrA[MAX\_SIZE],arrB[MAX\_SIZE],arrC[MAX\_SIZE],i,j=0,k,n,n1,n2;  printf("enter size for first array: ");  scanf("%d",&n1);  printf("Array of A values:\n");  for(i=0; i<n1; i++)  {  scanf("%d",&arrA[i]);  }  printf("enter size for second array: ");  scanf("%d",&n2);  printf("Array of B values:\n");  for(i=0; i<n2; i++)  {  scanf("%d",&arrB[i]);  }  for(i=0;i<n1;i++)  {  arrC[j] = arrA[i];  j++;  }  for(i=0;i<n2;i++)  {  arrC[j] = arrB[i];  j++;  }  n=n1+n2;  for(i=0;i<n;i++){  for(j=i+1;j<n;j++){  if(arrA[i]==arrB[j]){  for(k=j+1;k<n;k++){  arrC[k]=arrC[k+1];  }  n--;  j--;  }  }  }  printf("Array after Union \n");  for(i=0;i<n;i++){  printf("%d\n",arrC[i]);  }  return 0;  } | \*\* |

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| **21.** | WAP that will take n integers into an array A and m positive integers into array B. Now find the difference (set operation) of array A and B or (A-B).     |  |  | | --- | --- | | **Sample input** | **Sample output** | | 8  7 8 1 5 2 6 4 3  6  1 3 6 0 9 2 | 7 8 5 4 | | 3  1 2 3  2  4 5 | 1 2 3 |   #include<stdio.h>  int main()  {  int a[10],b[10],c[10],k=0,n1,n2,l,i,j;  printf("Enter size of set A: ");  scanf("%d",&n1);  printf("Enter element of set: ");  for( i=0;i<n1;i++)  scanf("%d",&a[i]);  printf("Enter size of set B: ");  scanf("%d",&n2);  printf("Enter element of set: ");  for( j=0;j<n2;j++)  scanf("%d",&b[j]);  for( i=0;i<n1;i++)  {  for(j=0;j<n2;j++)  {  if(b[j]==a[i])  break;  }  if(j==n2)  {    for(l=0;l<k;l++)  {  if(c[l]==a[i])  break;  }  if(l==k)  {  c[k]=a[i];  k++;  }  }  }  printf("Difference of A-B is:\n");  for(i=0;i<k;i++)  {  printf("%d ",c[i]);  }  return 0;  } | \*\* |