1. Write a program to reverse an array without using an additional array?
19. Write a program to print an array of random numbers in reverse order.

```c
#include <stdio.h>
#include <string.h>

int main()
{

    int a[100]={1,3,4,2,5};
    int n=5;
    int i,j,temp;

    for(i=0,j=n-1;i<j;i++,j--){
        temp=a[i];
        a[i]=a[j];
        a[j]=temp;
    }
    for(i=0;i<n;i++){
        printf("%d",a[i]);
    }


     return 0;
}
```

2. How to merge two unsorted arrays in sorted order ?
4. Write a program to merge and sort elements of two different arrays
38. Write a program to merge two arrays of the same size sorted in descending order.

```c
#include <stdio.h>

int main()
{

    int a[100]={2,5,7,4,1};
    int b[100]={3,6,8,9,10};
    int c[100];
    int n1=5,n2=5,i,j,k=0,temp;
    int n3=n1+n2;

    for(i=0;i<n3;i++){
        c[i]=a[i];
        if(i>n1-1){
            c[i]=b[k];
            k++;
```

```c
        }
    }
    for(i=0;i<n3-1;i++){
        for(j=i+1;j<n3;j++){
            if(c[i]>c[j]){
                temp=c[i];
                c[i]=c[j];
                c[j]=temp;
            }
        }
    }
    printf("Sorteed\n");
    for(i=0;i<n3;i++){
        printf("%d",c[i]);
    }


    return 0;
}
```

3. How to merge two sorted arrays?

```c
#include <stdio.h>


int main()
{

    int a[100]={1,2,3,4,5};
    int b[100]={6,7,8,9,10};
    int c[100];
    int n1=5,n2=5,i,j,k=0,temp;
    int n3=n1+n2;

    for(i=0;i<n3;i++){
        c[i]=a[i];
        if(i>n1-1){
            c[i]=b[k];
            k++;
        }
    }

    printf("Sorteed\n");
    for(i=0;i<n3;i++){
        printf("%d",c[i]);
    }
```

```c
        return 0;
}
```

5. Write a program to print all unique elements in an array.
12. Write a program to print all unique elements in an array

```c
#include <stdio.h>

int main()
{
    int a[100]={1,2,1,4,5,4};
    int n=6,count,i,j;

  for(i=0;i<n;i++){
      count=0;
      for(j=0;j<n;j++){
          if(i!=j && a[i]==a[j]){
                  count++;
                  break;
          }

      }
      if(count==0){
          printf("%d",a[i]);
      }
  }
    return 0;
}
```

?. Write a program to print duplicate elements in an array

```c
#include <stdio.h>

int main()
{
    int a[100]={1,2,1,4,5,4};
    int n=6,count,i,j;

  for(i=0;i<n;i++){
      count=0;
      for(j=0;j<n;j++){
          if(i!=j && a[i]==a[j]){
                  count++;
                  a[j]=-1;

          }
```

```
        }
        if(count==1 && a[i]!=-1){
            printf("%d",a[i]);
        }
    }
      return 0;
}

?. Print all prime numbers in an array

int main()
{

    int a[100]={2,9,7,5,4,10};
    int n=6,flag=0,i,j;

    for(i=0;i<n;i++){
        flag=0;
        for(j=2;j<a[i];j++){
            if(a[i]%j==0){
                flag=1;
                break;
            }
        }
        if(flag==0){
            printf("%d",a[i]);
        }

    }


    return 0;
}




6. Write a program to remove all the prime numbers in an array


#include <stdio.h>

int main()
{

    int a[100]={2,9,7,5,4,10};
    int n=6,flag,i,j;
```

```c
    for(i=0;i<n;i++){
        flag=0;
        for(j=2;j<a[i];j++){
            if(a[i]%j==0){
                flag=1;
                break;
            }
        }
        if(flag==0){
            for(j=i;j<n;j++){
                a[j]=a[j+1];
            }
            n--;
            i--;
        }
    }
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    return 0;
}
```

7. Program to find the average of n (n < 10) numbers using arrays

```c
#include <stdio.h>

int main()
{
    int a[100];
    int n,i;
    float sum,avg;
    printf("Enter the number:");
    scanf("%d",&n);
    if(n<1||n>9){
        printf("Please enter number 1 to 9:");
        scanf("%d",&n);
    }
        for(i=0;i<n;i++){
            a[i]=i+1;
            sum=sum+a[i];
        }
    avg=sum/n;
    printf("Average of the number:%f",avg);

     return 0;
}
```

8. Program to find the average of n numbers using arrays

```c
#include <stdio.h>


int main()
{
   int a[100];
   int n,i;
   float sum,avg;
   printf("Enter the number:");
   scanf("%d",&n);
       for(i=0;i<n;i++){
           a[i]=i+1;
           sum=sum+a[i];
          }
   avg=sum/n;
   printf("Average of the number is:%f",avg);

    return 0;
}
```


9. Write a Program to Delete an Integer from an Array of random numbers

```c
#include <stdio.h>

#include <stdio.h>
int main()
{
   int a[100];
   int n,i,j,pos;
   printf("Enter the size:");
   scanf("%d",&n);
   printf("Enter the numbers:\n");
   for(i=0;i<n;i++){
       scanf("%d",&a[i]);
   }
   printf("Array numbers are:");
   for(i=0;i<n;i++){
       printf("%d ",a[i]);
   }
   printf("\n");
   printf("Enter the position of number you want to delete:");
   scanf("%d",&pos);
```

```c
        for(i=pos-1;j<n-1;j++){
            a[i]=a[i+1];



        }
         printf("Array numbers are:");
      for(i=0;i<n-1;i++){
          printf("%d ",a[i]);
       }



    return 0;
}
```

10. Write a program to find the sum of all elements of the array

```c
#include <stdio.h>


int main()
{
 int a[100];
 int i,n,j,sum=0;
 printf("Enter the size of array:");
 scanf("%d",&n);
 printf("Enter the elements:\n");
 for(i=0;i<n;i++){
     scanf("%d",&a[i]);
 }
 for(j=0;j<n;j++){
     sum=sum+a[j];
 }
 printf("The sum of elements are %d",sum);



    return 0;
}
```

11. Write a program to copy the elements of one array into another array

```c
#include <stdio.h>


int main()
{
```

```c
    int a[100];
    int b[100];
    int i,n;
    printf("Enter the size of array:");
    scanf("%d",&n);
    printf("Enter the elements:\n");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    for(i=0;i<n;i++){
        b[i]=a[i];
    }
    printf("Array1:");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    printf("\n");
    printf("Array2:");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }



    return 0;
}
```

13. Write a program to insert a element in specified position in an array
43. Write a program to insert New value in the array (unsorted list) in (specific position)
42. Write a program to insert New value in the array (sorted list).

```c
#include <stdio.h>
int main()
{
    int a[100];
    int n,i,pos,num;
    printf("Enter the size:");
    scanf("%d",&n);
    printf("Enter the numbers:\n");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    printf("Array numbers are:");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    printf("\n");
    printf("Enter the position of number you want to add:");
```

```c
    scanf("%d",&pos);
     printf("Enter the number to add:");
    scanf("%d",&num);

        for(i=n-1;i>=pos-1;i--){
            a[i+1]=a[i];
            a[i]=num;



        }
         printf("Array numbers are:");
     for(i=0;i<n+1;i++){
        printf("%d ",a[i]);
     }



    return 0;
}
```

14. Write a program to sort elements of array in ascending order

```c
#include <stdio.h>

int main()
{

    int a[100]={2,5,7,4,1};

    int n=5,i,j,k=0,temp;

    for(i=0;i<n-1;i++){
        for(j=i+1;j<n;j++){
            if(a[i]>a[j]){
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
    }
    printf("Sorteed\n");
    for(i=0;i<n;i++){
        printf("%d",a[i]);
    }


    return 0;
}
```

15. Write a program to insert New value in the array (sorted list)

```c
#include <stdio.h>
int main()
{
    int a[100];
    int n,i,j,temp,num;
    printf("Enter the size:");
    scanf("%d",&n);
    printf("Enter the numbers:\n");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    printf("Array numbers are:");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    printf("\n");
     printf("Enter the number to add:");
    scanf("%d",&num);
    a[n]=num;
    for(i=0;i<n;i++){
        for(j=i+1;j<n+1;j++){
            if(a[i]>a[j]){
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
    }
        printf("Array numbers are:");
     for(i=0;i<n+1;i++){
        printf("%d ",a[i]);
     }


    return 0;
}
```

16. Write a program to sort an array and print the count of unique elements in the array.

```c
#include <stdio.h>
int main()
{
```

```c
    int a[100];
    int n,i,sum=0,temp,j,count=0;
    printf("Enter the size:");
    scanf("%d",&n);
    printf("Enter the numbers:\n");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    printf("Array numbers are:");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    printf("\n");
    for(i=0;i<n-1;i++){
        for(j=i+1;j<n;j++){
            if(a[i]>a[j]){
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
    }

  for(i=0;i<n;i++){
      count=0;
      for(j=0;j<n;j++){
          if(i!=j){
              if(a[i]==a[j]){
                  count++;
              }
          }

      }
      if(count==0){
          sum=sum+1;
      }
  }

        printf("Array numbers are:");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    printf("\n");
     printf("Count of unique numbers:%d",sum);


    return 0;
}
```

17. Write a program to print the sum of unique elements from an array

```c
#include <stdio.h>
int main()
{
    int a[100];
    int n,i,sum=0,temp,j,count=0;
    printf("Enter the size:");
    scanf("%d",&n);
    printf("Enter the numbers:\n");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    printf("Array numbers are:");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    printf("\n");

  for(i=0;i<n;i++){
     count=0;
     for(j=0;j<n;j++){
         if(i!=j){
             if(a[i]==a[j]){
                 count++;
             }
         }

     }
     if(count==0){
         sum=sum+a[i];
     }
  }

        printf("Array numbers are:");
   for(i=0;i<n;i++){
       printf("%d ",a[i]);
   }
   printf("\n");
    printf("Count of unique numbers:%d",sum);


   return 0;
}
```

18. Write a program to delete all the multiples of 5 in an array

```c
#include <stdio.h>
```

```c
int main()
{
    int a[100]={2,5,7,10,4};
    int n=5,flag=0,temp,i,j;

    for(i=0;i<n;i++){
        if(a[i]%5==0){
            for(j=i;j<n;j++){
            a[j]=a[j+1];
            }
              n--;
              i--;
        }
    }
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    return 0;
}
```

33. Write a program to read an array and count even and odd numbers in an array and

also Print sum of the even numbers in an array.
27. Write a program to count even and odd numbers in an array and also print the sum of
the even numbers in an array.

```c
#include <stdio.h>

int main()
{

    int a[100];
    int even=0,odd=0,n,i,sum=0;
    printf("Enter the size of array: ");
    scanf("%d",&n);
    printf("Enter the numbers:\n");
     for(i=0;i<n;i++){
        scanf("%d",&a[i]);
     }

    for(i=0;i<n;i++){
        if(a[i]%2==0){
            even++;
            sum=sum+a[i];
        }else{
            odd++;
        }
    }
```

```c
    printf("%d Even Numbers\n",even);
    printf("%d Odd Numbers\n",odd);
    printf("Sum of Even numbers:%d",sum);

     return 0;
}
```

?.Program to print all prime numbers in an array

```c
#include <stdio.h>

int main()
{

    int a[100];
    int flag=0,n,j,i;
    printf("Enter the size of array: ");
    scanf("%d",&n);
    printf("Enter the numbers:\n");
     for(i=0;i<n;i++){
         scanf("%d",&a[i]);
     }
     printf("Prime numbers in array are: ");
     for(i=0;i<n;i++){
     flag=0;
    for(j=2;j<a[i];j++){
        if(a[i]%j==0){
            flag=1;
           break;
        }
     }
    if(flag==0){
        printf("%d ",a[i]);
    }
}

     return 0;
}
```

?.Print to count the total number of all prime numbers in an array

```c
#include <stdio.h>

int main()
{

    int a[100];
    int flag,n,j,i,count=0;
    printf("Enter the size of array: ");
```

```c
    scanf("%d",&n);
    printf("Enter the numbers:\n");
     for(i=0;i<n;i++){
         scanf("%d",&a[i]);
     }
     for(i=0;i<n;i++){
     flag=0;
    for(j=2;j<a[i];j++){
        if(a[i]%j==0){
            flag=1;
            break;
        }
    }
    if(flag==0){
        count++;
    }
}
  printf("Count of prime numbers :%d",count);

    return 0;
}
```

20. How do you find the duplicate number on a given integer array

```c
#include <stdio.h>


int main()
{

    int a[100]={1,2,1,4,5,4};
    int n=6,count,i,j;

  for(i=0;i<n;i++){
      count=0;
      for(j=0;j<n;j++){
          if(i!=j){
              if(a[i]==a[j]){
                  count++;
              }
          }

      }
      if(count==1){
          printf("%d ",a[i]);
      }
  }
```

```c
    return 0;
}


21. Write a program to delete two elements after the occurrence of a prime number
and
replace all even numbers by 0.
29. Write a program to delete two elements after the occurrence of a prime number
and
replace all even numbers by 3

#include <stdio.h>

int main()
{

    int a[100]={2,9,7,5,4,5,7,10,4,6};
    int n=10,flag,i,j;

    for(i=0;i<n;i++){
        flag=0;
        for(j=2;j<a[i];j++){
            if(a[i]%j==0){
                flag=1;
                break;
            }
        }
        if(flag==0){
            if(i==n-1){
                n=n;
            }
            else if(i==n-2){
                n=n-1;
            }
            else{
            for(j=i;j<n;j++){
                a[j+1]=a[j+3];
                a[j+2]=a[j+4];
            }
            n=n-2;
            }
        }
        if(a[i]%2==0){
            a[i]=0;
        }
    }
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
```

```c
    return 0;
}
```

22. Write a program to sort an array and print the count of '1' in the array.
34. Write a program to sort an array and print the count of '1' in the array.

```c
#include <stdio.h>

int main()
{

    int a[100]={1,2,1,4,5,4};
    int n=6,temp,count=0,i,j;
    for(i=0;i<n-1;i++){
        for(j=i+1;j<n;j++){
            if(a[i]>a[j]){
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
    }
    for(i=0;i<n;i++){
        if(a[i]==1){
            count++;
        }
    }
        printf("count of 1: %d ",count);

     return 0;
}
```

23. In an array, replace all the prime numbers with ' * ' & remove all the odd numbers

```c
#include <stdio.h>

int main()
{

    int a[100]={2,9,7,10,4,9};
    int n=6,flag=0,i,j;

    for(i=0;i<n;i++){
        flag=0;
        for(j=2;j<a[i];j++){
            if(a[i]%j==0){
                flag=1;
                break;
```

```c
        }
    }
    if(flag==0){
        a[i]='*';
    }
    if(a[i]%2!=0){
      for(j=i;j<n;j++){
      a[j]=a[j+1];
      }
        n--;
        i--;
    }
}
}
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    return 0;
}
```

24. Sort the array and replace elements in an odd position with * and remove prime numbers
31. Sort the array and replace elements in an odd position with * and remove prime numbers

```c
#include <stdio.h>

int main()
{

    int a[100]={2,9,7,10,4,9};
    int n=6,flag=0,temp,i,j;

     for(i=0;i<n-1;i++){
        for(j=i+1;j<n;j++){
            if(a[i]>a[j]){
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
    }
    for(i=0;i<n;i++){
        flag=0;
        for(j=2;j<a[i];j++){
            if(a[i]%j==0){
                flag=1;
                break;
            }
```

```c
        }
        if(flag==0){
            for(j=i;j<n;j++){
          a[j]=a[j+1];
          }
            n--;
            i--;
        }

        if(a[i]%2!=0){
          a[i]='*';
        }
    }
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    return 0;
}
```

25. Find the sum of unique prime numbers in an array

```c
#include <stdio.h>

int main()
{
    int a[100]={8,2,7,5,5,4};
    int n=6,count,sum=0,i,j;

  for(i=0;i<n;i++){
      count=0;
      for(j=0;j<n;j++){
          if(i!=j){
              if(a[i]==a[j]){
                  count++;
              }
          }
      }
      for(j=2;j<a[i];j++){
          if(a[i]%2==0){
              count++;
              break;
          }
      }
      if(count==0){
          sum=sum+a[i];
      }
  }
  printf("Sum of unique prime numbers:%d",sum);
    return 0;
}
```

```
}


26. In an array remove all the prime numbers > 50 and remove all the non-prime
numbers
< 50.

#include <stdio.h>

int main()
{

    int a[100]={73,61,7,22,4,58};
    int n=6,flag,i,j;

    for(i=0;i<n;i++){
        flag=0;
        for(j=2;j<a[i];j++){
            if(a[i]%j==0){
                flag=1;
                break;
            }
        }
        if(flag==1 && a[i]<50){
                for(j=i;j<n;j++){
                a[j]=a[j+1];
                }
                 n--;
                 i--;
         }
        if(flag==0 && a[i]>50){
            for(j=i;j<n;j++){
                a[j]=a[j+1];
            }
            n--;
            i--;
        }
    }
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    return 0;
}


30. Write a program to move all zeros to the beginning of an array.

#include <stdio.h>

int main()
```

```c
{

    int a[100]={2,5,0,4,0};

    int n=5,i,j,k=0,temp;

    for(i=0;i<n-1;i++){
        for(j=i+1;j<n;j++){
            if(a[j]==0){
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
    }
    printf("after\n");
    for(i=0;i<n;i++){
        printf("%d",a[i]);
    }


     return 0;
}
```

35. Write a program to delete two elements after the occurrence of an even number

```c
#include <stdio.h>

int main()
{

    int a[100]={2,9,7,4,4,5,8,10};
    int n=8,flag,i,j;

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

        if(a[i]%2==0){
            if(i==n-1){
                n=n;
            }
            else if(i==n-2){
                n=n-1;
            }
            else{
            for(j=i;j<n;j++){
                a[j+1]=a[j+3];
                a[j+2]=a[j+4];
            }
            n=n-2;
```

```c
        }
      }
    }
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }
    return 0;
}
```

36. Write a program to find array elements that repeat 2 times in the array.

```c
#include <stdio.h>

int main()
{
    int a[100]={1,2,1,1,5,2,5,6,7};
    int n=9,count,i,j;

  for(i=0;i<n;i++){
      count=0;
      for(j=0;j<n;j++){
          if(i!=j && a[i]==a[j]){
                  count++;
                  a[j]=-1;
          }

      }
      if(count==1 && a[i]!=-1){
          printf("%d",a[i]);

      }
  }
    return 0;
}
```

37. Write a program to move all zeros to the end of an array

```c
#include <stdio.h>

int main()
{

    int a[100]={2,5,0,4,0};

    int n=5,i,j,k=0,temp;

    for(i=0;i<n-1;i++){
        for(j=i+1;j<n;j++){
            if(a[j]==0){
```

```c
                temp=a[j+1];
                a[j+1]=a[j];
                a[j]=temp;
            }
        }
    }
    printf("after\n");
    for(i=0;i<n;i++){
        printf("%d",a[i]);
    }


    return 0;
}
```

39. Write a program to count the frequency of each element of an array

```c
#include <stdio.h>

int main()
{

    int a[100]={2,9,7,4,4,5,8,10};
    int n=8,count,i,j,value=-1;
    int m[n];

    for(i=0;i<n;i++){
      count=1;
        for(j=i+1;j<n;j++){
            if(a[i]==a[j]){
                count++;
                m[j]=value;
            }
        }
        if(m[i]!=value){
            m[i]=count;
        }
    }
    printf("Frequency of elements:\n");
    for(i=0;i<n;i++){
        if(m[i]!=value){
            printf("%d-%d\n",a[i],m[i]);
        }
    }
    return 0;
}
```

40. Write a program to find the maximum and minimum element in an array.

```c
#include <stdio.h>

int main()
{
    int a[100]={3,2,10,8,7};
    int n=5,i,j,temp;
    for(i=0;i<n-1;i++){
        for(j=i+1;j<n;j++){
            if(a[i]>a[j]){
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
    }
        printf("minimum element is %d and maximum is %d",a[0],a[n-1]);
     return 0;
}
```

41. Write a program to separate odd and even integers in separate arrays.

```c
#include <stdio.h>

int main()
{

    int a[100]={2,1,3,5,4};
    int b[100],c[100];
    int k=0,m=0,n=5,i,sum=0;

    for(i=0;i<n;i++){
        if(a[i]%2==0){
            b[k]=a[i];
            k++;
        }else{
            c[m]=a[i];
            m++;
        }
    }
  printf("Even array:");
  for(i=0;i<k;i++){
      printf("%d",b[i]);
  }
  printf("\n");
   printf("Odd aray:");
   for(i=0;i<m;i++){
      printf("%d",c[i]);
   }
```

```
    return 0;
}
```