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.

```
#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.

```
#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++;
      }
   }
   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?

```
#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]);
  }


   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

```
#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

```
#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;

  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

```
#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

```
#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

```
#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);


      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

```
#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

```
#include <stdio.h>


int main()
{
 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).

```
#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:");
   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

```
#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)

```
#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.

```
#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-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

```
#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

```
#include <stdio.h>

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.

```
#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++;
     }
  }
  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

```
#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

```
#include <stdio.h>

int main()
{

   int a[100];
   int flag,n,j,i,count=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++){
    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

```
#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]);
      }
  }


   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]);
  }
  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.

```
#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

```
#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;
        }
     }
     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

```
#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;
            }
        }
        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

```
#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()
{

   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

```
#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;
         }
      }
```

```
  }
  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.

```
#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

```
#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){
           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

```
#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.

```
#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.

```
#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;
}
```