LAB 8

QUE 1)

Find whether given number is available in an array or not

```
#include<stdio.h>
void main(){
   int i,j,k,y,z,count=0;
   printf("Enter size of array : ");
   scanf("%d",&z);
   int arr[z];
   for ( i = 0; i < z; i++)
   {
      printf("Enter %d element : ",i+1);
      scanf("%d",&arr[i]);
   }
   printf("YOUR ARRAY!\n");
   printf("{ ");
   for ( i = 0; i < z; i++)
   {
      if (i==z-1)
      {
         printf("%d }\n",arr[i]);
         break;
      }
      printf("%d , ",arr[i]);
   }
   printf("Enter number you want to check in your array : ");
   scanf("%d",&y);
   for ( i = 0; i < z; i++)
```

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```
    {
        if (y==arr[i])
        {
            count++;
        }

    }
    if(count>0)
    {
        printf("Yes number %d is available in array %d times",y,count);
    }
    else
    {
        printf("Number not available in array");
    }


}
```

QUE 2)

Find the largest and smallest element in an array.

```
#include <stdio.h>
int main()
{
  int size, i, max=0, min=9;
  printf("Enter the size of the array: ");
```

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```
 scanf("%d",&size);
 int arr[size];
 for(i=0; i<size; i++)
 {
  printf("Enter the array element: ");
  scanf("%d",&arr[i]);
 }
 for(i=0; i<size; i++)
 {
   if(arr[i]>max)
   {
     max=arr[i];
   }
   if(arr[i]<min)
   {
     min=arr[i];
   }
 }
 printf("The MAXIMUM Value is: %d\n", max);
 printf("The MINIMUM Value is: %d\n", min);
 return 0;
}
```

QUE 3)

Find the sum of odd index numbers in an array.

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

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```
{
 int size, i, sum=0;
 printf("Enter the size of the array: ");
 scanf("%d",&size);
 int arr[size];
 for(i=0; i<size; i++)
 {
  printf("Enter the array element: ");
  scanf("%d", &arr[i]);
 }
 for(i=1; i<size; i+=2)
 {
  sum=sum+arr[i];
 }
 printf("The sum of elements at ODD INDEX are: %d", sum);
 return 0;
}
```

QUE 4)

Print the subarray that lies between the two indexes.

```
#include<stdio.h>
void main(){
   int i,j,k,y,z;
   printf("Enter size of array : ");
   scanf("%d",&z);
   int arr[z];
   for ( i = 0; i < z; i++)
```

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```
{
   printf("Enter %d element : ",i+1);
   scanf("%d",&arr[i]);
}
printf("YOUR ARRAY!\n");
printf("{ ");
for ( i = 0; i < z; i++)
{
   if (i==z-1)
   {
      printf("%d }\n",arr[i]);
      break;
   }
   printf("%d , ",arr[i]);

}
printf("Enter two index of array : ");
scanf("%d %d",&y,&k);
printf("The subarray will of given index will be \n");
printf("{ ");
for ( i = y; i<=k; i++)
{
   if (i==k)
   {
      printf("%d }",arr[i]);
      break;
   }
   printf("%d , ",arr[i]);
```

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```
  }
 }
```

QUE 5)

Print the ASCII code of character array

```
#include <stdio.h>
int main()
{
 int size, i;
 printf("Enter the size of the array: ");
 scanf("%d",&size);
 char arr[size];
 for(i=0; i<size; i++)
 {
  printf("Enter the array element: ");
  scanf("%s",&arr[i]);
 }
 printf ("The ASCII Values of the Character Array is: \n");
 for(i=0; i<size; i++)
 {
  printf("%c    -    %d\n", arr[i], (int)arr[i]);
 }
}
```

QUE 6)

Find the number of positive numbers, negative numbers, odd numbers, even numbers and number of 0 of an array.

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```
#include<stdio.h>
void main()
{
   int i,j,k,y,z,count=0,sum=0,sume=0,cout=0,check=0;
   printf("Enter size of array : ");
   scanf("%d",&z);
   int arr[z];
   for ( i = 0; i < z; i++)
   {
      printf("Enter %d element : ",i+1);
      scanf("%d",&arr[i]);
   }
   printf("YOUR ARRAY!\n");
   printf("{ ");
   for ( i = 0; i < z; i++)
   {
      if (i==z-1)
      {
         printf("%d }\n",arr[i]);
         break;
      }
      printf("%d , ",arr[i]);
   }
   for ( i = 0; i < z; i++)
   {
      if (arr[i]>0)
      {
         count++;
```

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```
        if (arr[i]%2==0)
        {
            check++;
        }
        else
        {
            cout++;
        }
    }
    else if(arr[i]==0)
    {
        sum++;
        if (arr[i]%2==0)
        {
            check++;
        }

    }
    else if(arr[i]<0)
    {
        sume++;
    }
  }
  printf("Total positive numbers are %d\nTotal even numbers are %d\n",count,check);
  printf("Total negative numbers are %d\nTotal odd numbers are %d\n",sume,cout);
  printf("Total 0(zeroes) %d",sum);

}
```

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QUE 7)

Reverse an array with an auxiliary array

```
#include<stdio.h>
void main(){
   int i,j,k,y,z;
   printf("Enter size of array : ");
   scanf("%d",&z);
   int arr[z];
   for ( i = 0; i < z; i++)
   {
      printf("Enter %d element of array : ",i+1);
      scanf("%d",&arr[i]);
   }
   printf("YOUR ARRAY!\n");
   printf("{ ");
   for ( i = 0; i < z; i++)
   {
      if (i==z-1)
      {
         printf("%d }\n",arr[i]);
         break;
      }
      printf("%d , ",arr[i]);

   }
   printf("REVERSED ARRAY!\n");
   printf("{ ");
```

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```
   for ( i = z-1; i>=0; i--)
   {
      if (i==0)
      {
         printf("%d }\n",arr[i]);
         break;
      }
      printf("%d , ",arr[i]);
   }

}
```

QUE 8)

Check whether an array is sorted or not.

```
#include <stdio.h>
int main()
{
   int size, i, j, flag1=0, flag2=0, t1=0, t2=9;
   printf("Enter the size of the array: ");
   scanf("%d",&size);
   int arr[size];
   for(i=0; i<size; i++)
   {
      printf("Enter the  array element: ");
      scanf("%d",&arr[i]);
   }
   for(i=0; i<size; i++)
   {
```

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```
    if(arr[i]>=t1)
    {
        t1=arr[i];
    }
    else
    {
        flag1=1;
        break;
    }
}
for(j=0; j<size; j++)
{
    if(arr[j]<=t1)
    {
        t1=arr[i];
    }
    else
    {
        flag2=1;
        break;
    }
}
if((flag1==1&&flag2==0)||(flag1==0&&flag2==1))
{
    printf("ARRAY IS SORTED");
}
else
{
    printf("ARRAY IS NOT SORTED");
```

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```
   }
   return 0;
}
```

QUE 9)

Arrange the elements of an array in ascending order by simple sorting method.

(Selection sort/bubble sort)

```
#include <stdio.h>
int main()
{
 int size, i, j, swap, pos;
 printf("Enter the size of the array: ");
 scanf("%d", &size);
 int arr[size];
 for(i=0; i<size; i++)
 {
  printf("Enter the array element: ");
  scanf("%d",&arr[i]);
 }
 for (i=0; i<(size-1); i++)
 {
    pos=i;
   for (j=i+1; j<size; j++)
   {
      if(arr[pos]>arr[j])
         pos = j;
   }
   if (pos!=i)
```

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```
    {
      swap=arr[i];
      arr[i]=arr[pos];
      arr[pos]=swap;
    }
 }
 printf("The SORTED ARRAY IS: \n");
 for(i=0; i<size; i++)
 {
  printf("%d , ",arr[i]);
 }
 return 0;
}
```

QUE 10)

Take an array of 10 elements. Split it into middle and store the elements in two different arrays. E.g.-

initial array :

58 24 13 15 63 9 8 81 1 78

```
#include<stdio.h>
void main(){
   int i,j,k,y,z;
   printf("Your array size is 10\n");
   char arr[10];
   for ( i = 0; i < 10; i++)
   {
      printf("Enter %d element : ",i+1);
      scanf("%s",&arr[i]);
```

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```
    }
    printf("YOUR ARRAY!\n");
    printf("{ ");
    for ( i = 0; i < 10; i++)
    {
       if (i==9)
       {
          printf("%c }\n",arr[i]);
          break;
       }
       printf("%c , ",arr[i]);
    }
    char arry[5];
    char arryt[5];
    for(i=0;i<5;i++)
    {
       arry[i]=arr[i];
       arryt[i]=arr[i+5];
    }
    printf("Column 1 , Column2 \n");
    for(i=0;i<5;i++)
    {
      printf("%c   ,    %c \n", arry[i], arryt[i]);
    }
}
```

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