Assignment-12

Pointer

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```c
// 1.WAP to read 10 elements in an array and
     calculate the sum and average of all elements.

#include<stdio.h>

int main()
{
    float a[10];
    float sum=0;
    for (int i=0;i<10;i++)
    {
        printf("Enter the number :");
        scanf("%f",a+i);
        sum =sum + *(a+i);
    }
    printf("The sum of the given number is %.3f and average is %.3f",sum,sum/10);
    return 0;
}
```

```c
// 2.WAP to read 10 elements in an array and
//    count the occurence of odd and even.

#include<stdio.h>

int main(){
    int a[10],odd=0,even=0,i;
    for(i=0;i<10;i++)
    {
        printf("Enter the numbber :");
        scanf("%d",(a+i));
        (*(a+i)%2==0)? even++: odd++;
    }
    printf("The no. of even numbers are %d and odd numbers are %d.",even,odd);
    return 0;
}
```

```c
//3.WAP to read 10 elements in an array and
//   copy all the elements to another array.

#include <stdio.h>

int main()
{
    int a[20], i, b[10];
    for (i = 0; i < 10; i++)
    {
        printf("Enter he number :");
        scanf("%d", (a + i));
        *(b + i) = *(a + i);
    }
    for (i = 0; i < 10; i++)
        printf("%3d", *(b + i));
    return 0;
}
```

```c
// 4.WAP to read 10 elements in an array and copy all the elements in
reverse order to an another array.
#include<stdio.h>

int main()
{
    int a[10], i, j, b[10];
    for(i=0;i<10;i++)
    {
        printf("Enter the number:");
        scanf("%d",(a+i));
    }
    for (i=0,j=9;i<10;i++,j--)
        *(b+i) = *(a+j);

    for(j=0;j<10;j++)
    printf("%3d",*(b+j));

    return 0;
}
```

```c
// 5.WAP to separate odd and even integers in separate arrays.

#include <stdio.h>

int main()
{
    int a[10], odd[10], even[10], o = 0, e = 0, i;
    for (i = 0; i < 10; i++)
    {
        printf("Enter the number :");
        scanf("%d", (a + i));
        if (*(a + i) % 2 == 1)
        {
            *(odd + o) = *(a + i);
            o++;
        }
        else
        {
            *(even + e) = *(a + i);
            e++;
        }
    }
    printf("Odd numbers :");
    for (o = o - 1; o >= 0; o--)
        printf("%3d", *(odd + o));
    printf("\n Even numbers :");
    for (e = e - 1; e >= 0; e--)
        printf("%3d", *(even + e));
    return 0;
}
```

```c
// 6.WAP to read 10 elements in an array and search for a particular number among the array list.

#include<stdio.h>

int main(){
    int a[10],n,t,i,j;
    for(i=0;i<10;i++)
    {
        printf("Enter a number :");
        scanf("%d",(a+i));
    }
    printf("Enter the number you are searching for : ");
    scanf("%d",&n);
    for(j=0;j<10;j++)
    {
        if(n==*(a+j))
        {
            printf("Tne number %d is a[%d].\n",n,j);
            t=1;
        }
        else if (t==0)
        printf("Tne number is not on the array");
    }
    return 0;
}
```

```c
// 7.WAP to read 10 elements in an array and find the maximum.

#include<stdio.h>

int main(){
    int a[10],i,max;
    for (i=0;i<10;i++)
    {
        printf("Enter the number :");
        scanf("%d",(a+i));
    }
    max =*a;
    for(i=1;i<10;i++)
    {
        if(*(a+i)>max)
        max=*(a+i);
    }
    printf("The maximum number is %d",max);
    return 0;
}
```

```c
// 8.WAP to read 10 elements in an array and find the minimum.

#include <stdio.h>

int main()
{
    int a[10], min, i;
    printf("Enter a number :");
    scanf("%d", (a + 0));
    min = *(a + 0);
    for (i = 1; i < 10; i++)
    {
        printf("Enter a number :");
        scanf("%d", (a + i));
        if (min > *(a + i))
            min = *(a + i);
    }
    printf("The minimum number is %d.", min);
    return 0;
}
```

```c
// 9.WAP to count the frequency of each element of an array.

#include<stdio.h>

int main(){
    int a[10],i,j,freq1,freq2;
    for(i=0;i<10;i++)
    {
        printf("Enter the number :");
        scanf("%d",(a+i));
    }
    for(i=0;i<10;i++)
    {
        freq1=0;
        for(j=0;j<10;j++)
        {
            if(*(a+i)==*(a+j))
            freq1 +=1;
        }
        freq2=0;
        for(j=0;j<=i;j++)
        {
            if(*(a+i)==*(a+j))
            freq2 +=1;
        }
        if(freq2<2)
        printf("The frequency of element %d is %d.\n",*(a+i),freq1);
    }
    return 0;
}
```

```c
// 10.WAP to read 10 elements in an array and sort them in ascending order.

#include<stdio.h>

int main()
{
    int a[10], i, j,ascend;
    for (i=0;i<10;i++)
    {
        printf("Enter a number: ");
        scanf("%d",(a+i));
    }
    for(i=0;i<10;i++)
    {
        for(j=i;j<10;j++)
        {
            if (*(a+j)<*(a+i))
            {
                ascend = *(a+i);
                *(a+i) = *(a+j);
                *(a+j) = ascend;
            }
        }
    }
    printf("\nThe numbers in ascending order is : ");
    for(i=0;i<10;i++)
    printf(" %d",*(a+i));

    return 0;
}
```

```c
// 11.WAP to read 10 elements in an array and sort them in descending
order.

#include <stdio.h>

int main() {
  int a[10],descend;
  for (int i=0; i<10; i++) {
    printf("Enter a number: ");
    scanf("%d", (a+i));
  }
  descend=*(a+0);
  for (int i=0; i<10; i++) {
    for (int j=i; j<10; j++) {
      if (*(a+i)<*(a+j)) {
        descend=*(a+j);
        *(a+j)=*(a+i);
        *(a+i)=descend;
      }
    }
    printf("%d, ", *(a+i));
  }
  return 0;
}
```

```c
// 12.WAP to insert New value in the array (sorted list ).

#include <stdio.h>

int main()
{
    int a[100],i,n=5;
    char c;
    printf("Enter the first five inputs :\n");
    for(i=0;i<5;i++)
    {
        printf("Enter a number : ");
        scanf("%d",(a+i));
    }
    for(n;n>0;n++)
    {
        printf("Do you want to add more numbers (Y/N) : ");
        scanf(" %c",&c);
        if (c == 'Y' || c == 'y')
        {
            printf("enter the number :");
            scanf("%d",(a+n));
        }
        else
        break;
    }
    printf("\nThe number you entered are : ");
    for(i=0;i<n;i++)
    printf("%d ",*(a+i));
    return 0;
}
```