

Assignment-7

Single dimension array

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```
// 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],s=0,av;
    for(int i=0;i<10;i++)
    {
        printf("Enter the number:");
        scanf("%f",&a[i]);
        s=s+a[i];
        av=s/10;
    }
    printf("The sum and average are %f and %f.",s,av);
    return 0;
}
```

//2. WAP to read 10 elements in an array and count the occurrence of odd and even numbers.

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

```
int main()
```

```
{
```

```
    int a[10],odd=0,even=0,i;
```

```
    for (i=0;i<10;i++)
```

```
    {
```

```
        printf("Enter the number:");
```

```
        scanf("%d",&a[i]);
```

```
        if (a[i]%2==1)
```

```
            odd+=1;
```

```
        else
```

```
            even+=1;
```

```
    }
```

```
    printf("There are %d odd and %d even numbers.",odd,even);
```

```
    return 0;
```

```
}
```

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

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

```
int main(){
    int a[10],b[10],i;
    for ( i=0;i<10;i++)
    {
        printf("Enter the number:");
        scanf("%4d",&a[i]);
        b[i]=a[i];
    }
    for (int i=0;i<10;i++)
    printf("%5d",b[i]);
    return 0;
}
```

// 4. WAP to read 10 elements in an array and copy all the elements in reverse order to another array.

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

```
int main()
```

```
{
```

```
    int a[10], b[10], i, j;
```

```
    for (i = 0; i < 10; i++)
```

```
    {
```

```
        printf("Enter the number:");
```

```
        scanf("%d", &a[i]);
```

```
    }
```

```
    for (i = 0, j = 9; i <= 9; i++, j--)
```

```
        b[j] = a[i];
```

```
    for (j = 0; j < 10; j++)
```

```
        printf("%4d", b[j]);
```

```
    return 0;
```

```
}
```

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

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

```
int main()
```

```
{
```

```
    int a[10], odd[10], even[10], i, o = 0, e = 0;
```

```
    for (i = 0; i < 10; i++)
```

```
    {
```

```
        printf("Enter the number:");
```

```
        scanf("%d", &a[i]);
```

```
        if (a[i] % 2 == 1)
```

```
        {
```

```
            odd[o] = a[i] ;
```

```
            o += 1;
```

```
        }
```

```
        else
```

```
        {
```

```
            even[e] = a[i];
```

```
            e += 1;
```

```
        }
```

```
    }
```

```

printf("\nOdd number:");
for (o = o - 1; o >= 0; o--)
    printf("%3d", odd[o]);
printf("\nEven numbers:");
for (e = e - 1; e >= 0; e--)
    printf("%3d", even[e]);

return 0;
}

```

//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], i, n;
    for (i = 0; i < 10; i++)
    {
        printf("Enter the number:");
        scanf("%d", &a[i]);
    }
    printf("Enter the number you are searching for :");
    scanf("%d", &n);
    for (int i = 0; i < 10; i++)
    {
        if (n == a[i])
        {
            printf("The number %d is a[%d].\n", n, i);
        }
    }
}

```

```
    }  
    else if (i == 9)  
        printf("The number is not found.");  
}  
  
return 0;  
}
```

// 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 a number:");
```

```
        scanf("%d",&a[i]);
```

```
    }
```

```
    max=a[0];
```

```
    for(i=1;i<10;i++)
```

```
    {
```

```
        if (a[i]>max)
```

```
        max=a[i];
```

```
    }
```

```
    printf("The maximum number is %d",max);
```

```
    return 0;
```

```
}
```

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

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

```
int main()
```

```
{
```

```
    int a[10],i,min;
```

```
    for(i=0;i<10;i++)
```

```
    {
```

```
        printf("Enter a number:");
```

```
        scanf("%d",&a[i]);
```

```
    }
```

```
    min=a[0];
```

```
    for(i=1;i<10;i++)
```

```
    {
```

```
        if (a[i]<min)
```

```
        min=a[i];
```

```
    }
```

```
    printf("The minimum number is %d",min);
```

```
    return 0;
```

```
}
```


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

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

```
int main(){
    int a[10],i,j,n,c1,c2;
    for (i=0;i<10;i++)
    {
        printf("Enter a number :");
        scanf("%d",&a[i]);
    }
    for(i=0,n=0;i<10,n<10;i++,n++)
    {
        c1=0;
        for(j=0;j<10;j++)
        {
            if(a[i]==a[j])
                c1+=1;
        }
        c2=0;
        for(j=0;j<=i;j++)
```

```

        {
            if (a[i]==a[j])
                c2+=1;
        }
        if(c2<2)
            printf("The frequency of element %d is %d.\n",a[
i],c1);
    }
    return 0;
}

```

```

// 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,asc;
    for (i=0;i<10;i++)
    {
        printf("Enter the number:");
        scanf("%d",&a[i]);
    }
    asc=a[0];
    for( i=0;i<10;i++)
    {
        for(j=i;j<10;j++)
        {
            if (a[i]>a[j])
            {
                asc=a[j];
                a[j]=a[i];
                a[i]=asc;
            }
        }
    }
}

```

```
    }  
    printf("%d\n",a[i]);  
}  
return 0;  
}
```

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

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

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

```

    }
    }
    printf(" %d\n",a[i]);
}
return 0;
}

```

```

// 12. WAP to insert New value in the array (sorted list
).
#include<stdio.h>

int main(){
    int a[100],i,n=10;
    char c;
    printf("Enter the first 10 inputs:");
    for (i=0;i<10;i++)
    {
        printf("\nEnter the 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("\n The number you entered are :");  
    for(i=0;i<n;i++)  
        printf("%2d",a[i]);  
    return 0;  
}
```