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La52.1

```c
/*Author : Antarin Ghosal
Program : WAP to print fibonacci series using arrays.*/


#include<stdio.h>

int main(){
    int arr[30],n,i;
    printf("Enter the number of elements we want to print : ");
    scanf("%d",&n);

    if (n>30){
        printf("Too many numbers !!");
        return 0;
    }

    printf("The Requested Elements are : \n0 \n1 \n");

    arr[0]=0;
    arr[1]=1;
    for(i=2;i<n;i++){
        arr[i]=arr[i-1]+arr[i-2];
        printf("%d\n",arr[i]);
    }

    return 0;
}
```

```
Enter the number of elements we want to print : 10
The Requested Elements are :
0
1
1
2
3
5
8
13
21
34
```

```
Enter the number of elements we want to print : 5
The Requested Elements are :
0
1
1
2
3
```

La52.2

```c
/*Author : Antarin Ghosal
Program : WAP to find first and second largest in an array.*/


#include<stdio.h>

int main(){
    int i,j,arr[30],n,large1,large2;
    printf("Enter the amount of numbers we want to enter : ");
    scanf("%d",&n);

    if (n>30){
        printf("Too many numbers !!");
        return 0;
    }

    printf("Enter the numbers : \n");
    for(i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }

    large1=arr[0];
    for(i=1;i<n;i++){
        if(arr[i]>large1)
        {
            large1=arr[i];
```

```
            j=i;
        }
    }

    arr[j]=0;

    large2=arr[0];
    for(i=1;i<n;i++){
        if(arr[i]>large2)
            large2=arr[i];
    }

    printf("The first largest value is : %d\n",large1);
    printf("The second largest value is : %d\n",large2);

    return 0;
}
```

```
Enter the amount of numbers we want to enter : 10
Enter the numbers :
1
2
3
4
5
6
7
8
9
10
The first largest value is : 10
The second largest value is : 9
```

```
Enter the amount of numbers we want to enter : 5
Enter the numbers :
20
30
20
40
10
The first largest value is : 40
The second largest value is : 30
```

La 52.3

```c
/*Author : Antarin Ghosal
Program : WAP to perform linear search on a array for a search key.*/


#include<stdio.h>

int main(){
    int i,j,arr[30],n,key;
    printf("Enter the amount of numbers we want to enter : ");
    scanf("%d",&n);

    printf("Enter the numbers : \n");
    for(i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }

    printf("\nEnter the number you want to find : ");
    scanf("%d",&key);

    for(i=0;i<n;i++){
        if(arr[i]==key){
            printf("The number %d is found at index %d",key,i);
        }
    }

    return 0;
}
```

```
Enter the amount of numbers we want to enter : 10
Enter the numbers :
1
2
3
4
5
6
7
8
9
10

Enter the number you want to find : 5
The number 5 is found at index 4
```

```
Enter the amount of numbers we want to enter : 5
Enter the numbers :
100
2
3
10
30

Enter the number you want to find : 100
The number 100 is found at index 0
```

La 52.4

```c
/*Author : Antarin Ghosal
Program : WAP to perform binary search on a array for a search key.*/


#include<stdio.h>

int main(){
    int i,j,arr[30],n,key,temp;
    printf("Enter the amount of numbers we want to enter : ");
    scanf("%d",&n);

    printf("Enter the numbers : \n");
    for(i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }

    printf("\nEnter the number you want to find : ");
    scanf("%d",&key);

    temp=n/2;

    if (key <= arr[temp]){
        for(i=temp;i>=0;i--){
            if(key==arr[i])
            printf("The number %d is found at index %d\n",key,i);
        }
    }

    else if (key > arr[temp]) {
        for (i=temp;i<n;i++){
            if(key==arr[i])
            printf("The number %d is found at index %d\n",key,i);
        }
    }

    return 0;
```

```
}
```

```
Enter the amount of numbers we want to enter : 10
Enter the numbers :
1
2
3
4
5
6
7
8
9
10

Enter the number you want to find : 5
The number 5 is found at index 4
```

```
Enter the amount of numbers we want to enter : 5
Enter the numbers :
100
2
3
10
30

Enter the number you want to find : 100
The number 100 is found at index 0
```

La 52.5

```c
/*Author : Antarin Ghosal
Program : WAP to print odd and even numbers in a array.*/


#include<stdio.h>

int main(){
    int n,arr[30],i,j;
    printf("Enter the amount of numbers we want to enter : ");
    scanf("%d",&n);

    printf("Enter the numbers : \n");
    for(i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }
```

```c
    printf("\nAll EVEN numbers are as follows : \n");
    for(i=0;i<n;i++){
        if(arr[i]%2==0){
            printf("\n%d",arr[i]);
        }
    }

    printf("\n\nAll ODD numbers are as follows : \n");
    for(i=0;i<n;i++){
        if(arr[i]%2==1){
            printf("\n%d",arr[i]);
        }
    }

    return 0;
}
```

```
Enter the amount of numbers we want to enter : 10
Enter the numbers :
1
2
3
4
5
6
7
8
9
10

All EVEN numbers are as follows :

2
4
6
8
10

All ODD numbers are as follows :

1
3
5
7
9
```

```
Enter the amount of numbers we want to enter : 5
Enter the numbers :
1
2
4
5
6

All EVEN numbers are as follows :

2
4
6

All ODD numbers are as follows :

1
5
```