

**SET A****PRIME NUMBER IDENTIFICATION**

Write a C program that takes number of elements from the user and value of each element in (main function). Store the elements in an array (A). a. Create a function(F1) that takes pointer to the array A and number of elements as parameter. b. In the function, identify the prime numbers in the array (A) and store it in a new array (B) and display the elements of the new array B. IN FUNCTION: In function, every element in the array must be accessed using a pointer only. Do not access the elements of the array using index i.e. using square brackets

**PROGRAM:**

```
#include <stdio.h>

void prime(int *p, int n)
{
    int arr2[n],i,j,t,k=0;
    for(i=0;i<n;i++)
    {
        t=0;
        if(*(p+i)!=1)
        {
            for(j=2;j<(*(p+i))/2;j++)
            {
                if(*(p+i)%j==0)
                {
                    t=1;
                    break;
                }
            }
        }
    }
}
```

```
        }
    }
    if(t==0)
    {
        *(arr2+k)=*(p+i);
        k++;
    }
}
*(arr2+k)=0;
printf("\nThe prime numbers are listed below\n\n");
for(i=0;*(arr2+i)!=0;i++)
    printf("%d\n",*(arr2+i));
}
```

```
int main()
{
    int n,i;
    printf("Enter the number of elements\n");
    scanf("%d",&n);
    int arr1[n];
    int *ptr=arr1;
    for(i=0;i<n;i++)
    {
        printf("Enter the element %d ",i+1);
        scanf("%d",ptr+i);
    }
}
```

```
}  
prime(ptr,n);  
return 0;  
}
```

**LINK TO CODE:** <https://onlinegdb.com/Sf9c9GVwp>

**SCREENSHOT OF THE CODE:**

```
1  #include <stdio.h>  
2  
3  void prime(int *p, int n)  
4  {  
5      int arr2[n],i,j,t,k=0;  
6      for(i=0;i<n;i++)  
7      {  
8          t=0;  
9          if(*(p+i)!=1)  
10         {  
11             for(j=2;j<(*(p+i))/2;j++)  
12             {  
13                 if(*(p+i)%j==0)  
14                 {  
15                     t=1;  
16                     break;  
17                 }  
18             }  
19             if(t==0)  
20             {  
21                 *(arr2+k)=*(p+i);  
22                 k++;  
23             }  
24         }  
25     }  
26     *(arr2+k)=0;  
27     printf("\nThe prime numbers are listed below\n\n");  
28     for(i=0;*(arr2+i)!=0;i++)  
29         printf("%d\n",*(arr2+i));  
30 }  
31  
32  
33 int main()  
34 {  
35     int n,i;  
36     printf("Enter the number of elements\n");  
37     scanf("%d",&n);  
38     int arr1[n];  
39     int *ptr=arr1;  
40     for(i=0;i<n;i++)  
41     {  
42         printf("Enter the element %d ",i+1);  
43         scanf("%d",ptr+i);  
44     }  
45     prime(ptr,n);  
46     return 0;  
47 }  
48
```

**OUTPUT:**

```
Enter the number of elements
5
Enter the element 1 14
Enter the element 2 15
Enter the element 3 1
Enter the element 4 5
Enter the element 5 71

The prime numbers are listed below

5
71

...Program finished with exit code 0
Press ENTER to exit console.
```

```
Enter the number of elements
6
Enter the element 1 2
Enter the element 2 3
Enter the element 3 14
Enter the element 4 23
Enter the element 5 12
Enter the element 6 7

The prime numbers are listed below

2
3
23
7

...Program finished with exit code 0
Press ENTER to exit console.
```

HAND WRITTEN CODE:

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Program →

```
# include <stdio.h>

void prime (int *p, int n)
{
    int arr2[n], i, j, t, k=0;
    for (i=0; i<n; i++)
    {
        t=0;
        if (* (p+i) != 1)
        {
            for (j=2; j<(* (p+i))/2; j++)
            {
                if (* (p+i) % j == 0)
                {
                    t=1;
                    break;
                }
            }
            if (t==0)
            {
                * (arr2+k) = * (p+i);
                k++;
            }
        }
    }
    * (arr2+k) = 0;
    printf ("\n The prime numbers are listed below \n\n");
    for (i=0; * (arr2+i) != 0; i++)
        printf ("%d \n", * (arr2+i));
}
```

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```
int main ()  
{  
    int n, i ;  
    printf (" Enter the number of elements \n");  
    scanf ("%d", &n);  
    int arr[n];  
    int * ptr = arr ;  
    for (i = 0; i < n; i++)  
    {  
        printf (" Enter the element %d ", i+1);  
        scanf ("%d", ptr + i);  
    }  
    printf (ptr, n);  
    return 0;  
}
```