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);
```

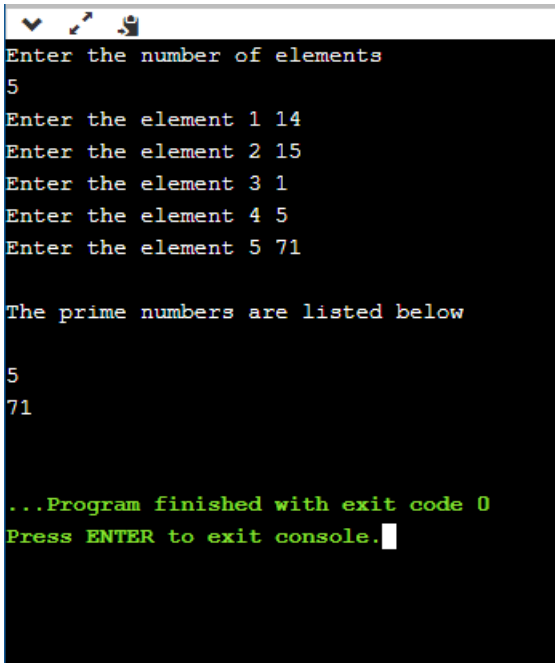
```
    }
    prime(ptr,n);
    return 0;
}
```

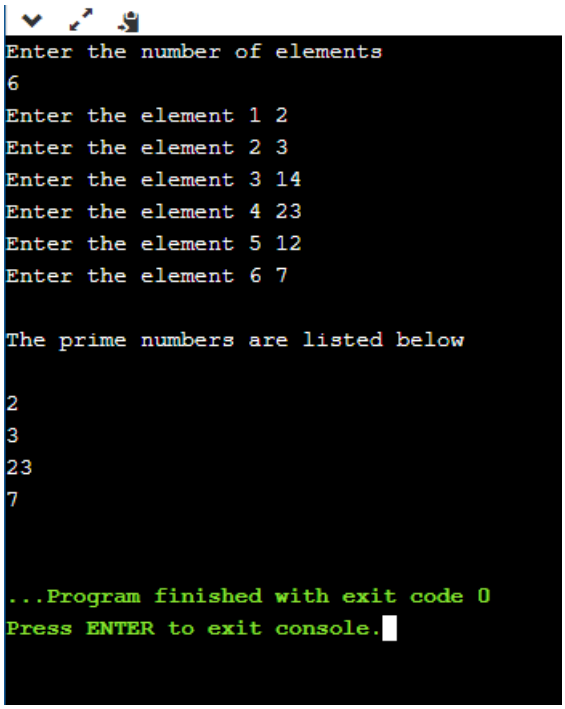
LINK TO CODE: https://onlinegdb.com/Sf9c9GVwp

SCREENSHOT OF THE CODE:

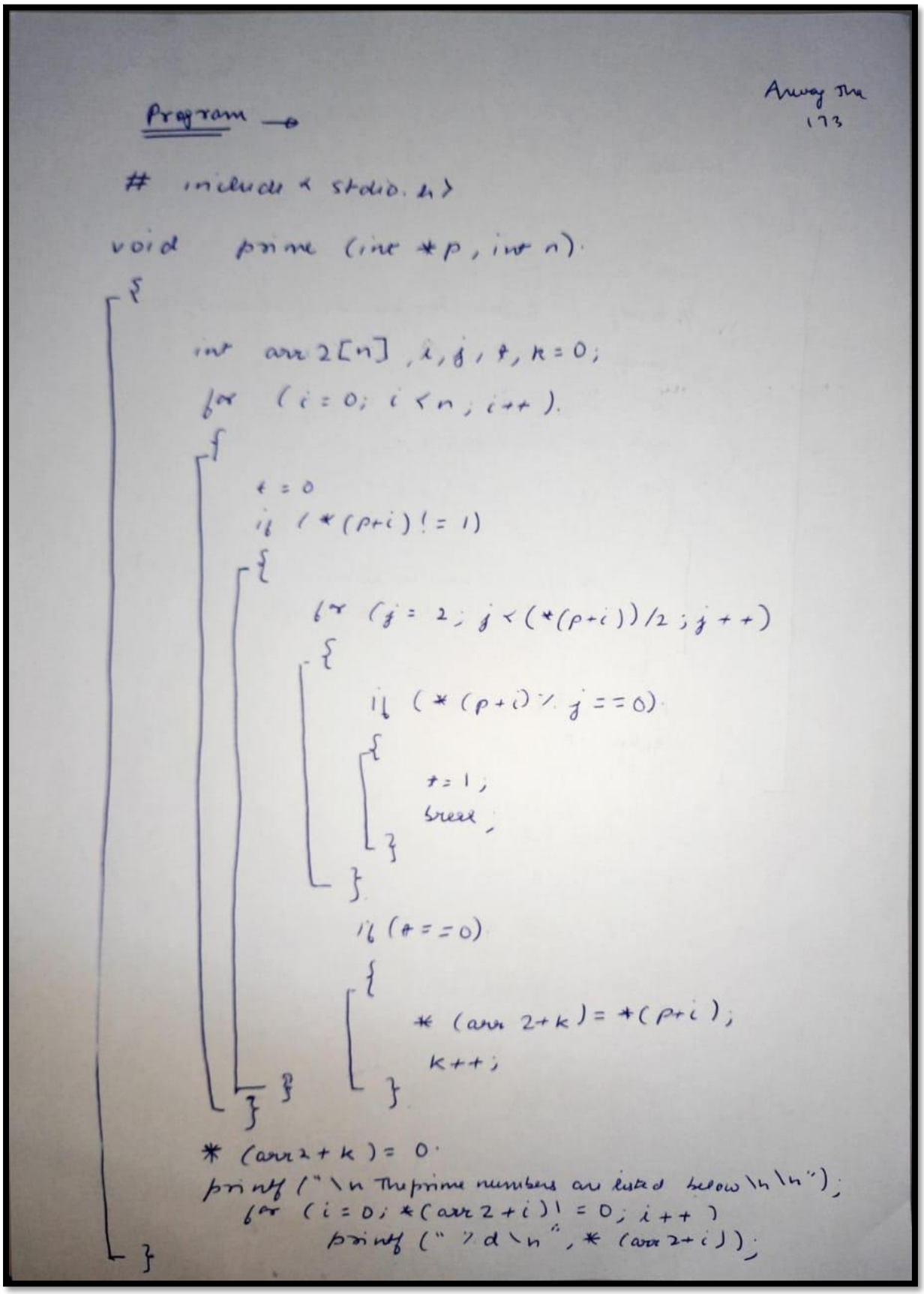
```c
#include <stdio.h>

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;
}

```

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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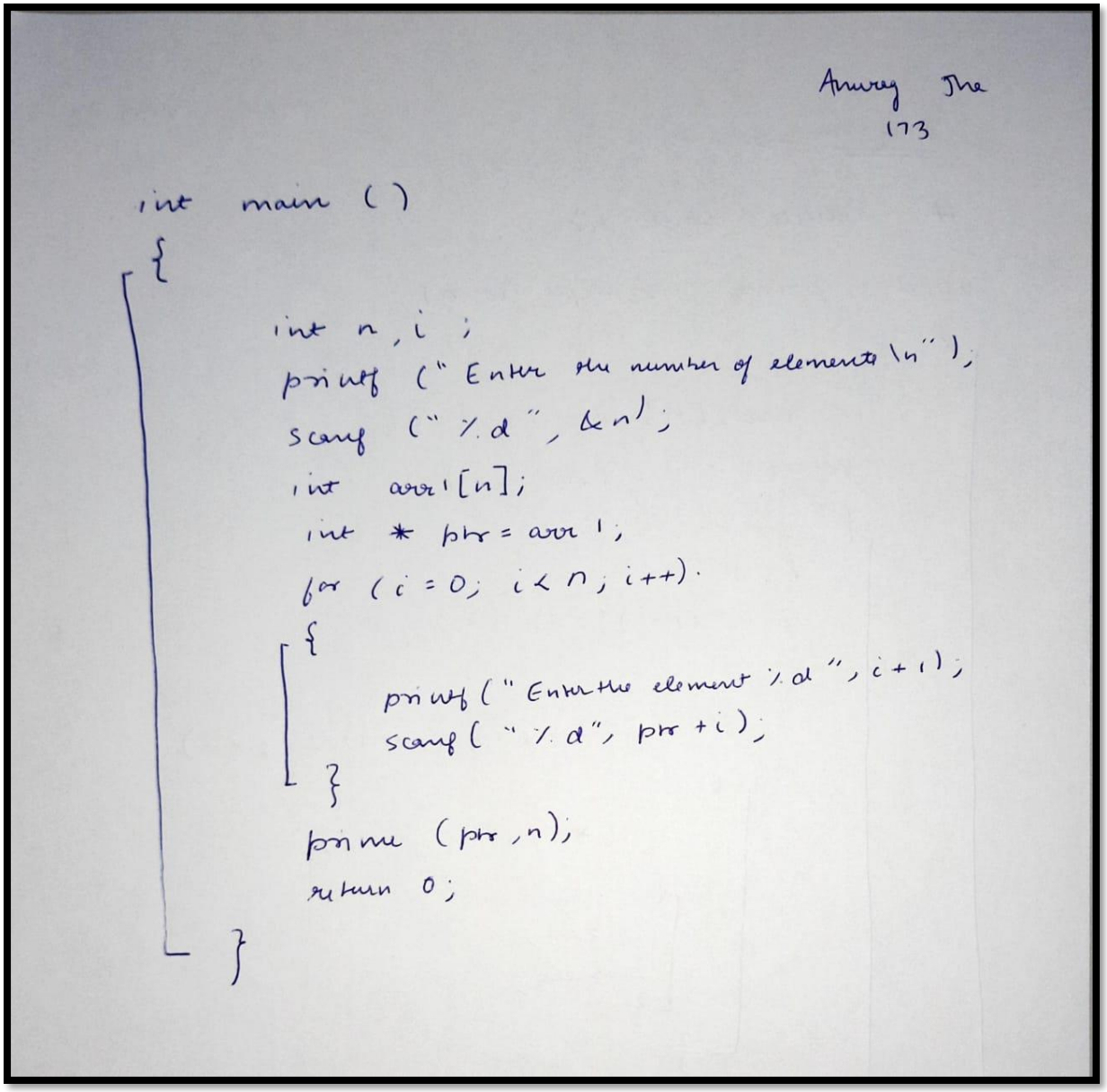
Program →

```
# 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 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;
}
```