←   **15 Dec Bootcamp**

Problem Link - https://codeforces.com/contest/1766/problem/A

Solution -

```c
#include<stdio.h>
int main()
{
    int t;
    scanf("%d",&t);
    for(int i=1; i<=t; i++)
    {
        int n;
        scanf("%d",&n);
        if(n<=9)
            printf("%d\n",n);
        else
        {
            int res=9,value=10,cnt=1;
            for(int i=10; i<=n; i+=value)
            {
                if(cnt==10)
                {
                    value*=10;
                    cnt=1;
                }
                res++;
                cnt++;
            }
            printf("%d\n",res);
        }
    }
    return 0;
}
```

Problem Link - https://codeforces.com/contest/1766/problem/B

Solution 2 -

```c
#include<stdio.h>
int main()
{
    int t;
    scanf("%d",&t);
```

```
    scanf("%d",&n);
    char s[200005];
    scanf("%s",s);

    for(int i=0; i<n-1; i++)
    {
        char a=s[i],b=s[i+1];
        int found=0;
        for(int j=i+2; j<n-1; j++)
        {
            if(s[j]==a && s[j+1]==b)
            {
                found=1;
                break;
            }
        }
        if(found)
        {
            exist=1;
            break;
        }
    }
    if(exist)
        printf("YES\n");
    else
        printf("NO\n");
    }

    return 0;
}
```

Prime -

```
#include<stdio.h>
int main()
{
    int value,prime=1;
    scanf("%d",&value);
    for(int i=2; i<value; i++)
    {
        if(value%i==0)
        {
            prime=0;
            break;
        }
    }
    if(prime && value!=1)
        printf("Prime\n");
    else
        printf("Not prime\n");
    return 0;
}
```

← **15 Dec Bootcamp**

```c
int min(int a,int b)
{
    if(a<b)
        return a;
    return b;
}
int gcd(int a,int b)
{
    int ans=1;
    for(int i=1; i<=min(a,b); i++)
    {
        if(a%i==0 && b%i==0)
        {
            ans=i;
        }
    }
    return ans;
}
int main()
{
    int q;
    scanf("%d",&q);
    for(int i=1; i<=q; i++)
    {
        int num1,num2;
        scanf("%d%d",&num1,&num2);
        printf("GCD = %d\n",gcd(num1,num2));
    }
    return 0;
}
```

Unique and Duplicate

```c
#include<stdio.h>
int main()
{
    char s[100]="bbeaaawkk";
    int largestElement=26;

    int freq[largestElement+1];

    for(int i=0; i<=largestElement; i++)
        freq[i]=0;

    for(int i=0; i<strlen(s); i++)
        freq[(s[i]-'a')+1]++;

    int unique=0,duplicate=0;
    for(int i=1; i<=largestElement; i++)
    {
        if(freq[i]==1)
            unique++;
        else if(freq[i]>1)
            duplicate++;
    }
```

```
}
```

First Occurrence and Last Occurrence -

```
#include<stdio.h>
int main()
{

    int n,target;
    scanf("%d%d",&n,&target);
    int arr[n];
    for(int i=0; i<n; i++)
        scanf("%d",&arr[i]);

    int firstOcc=-1,lastOcc=-1;
    for(int i=0; i<n; i++)
    {
        if(target==arr[i])
        {
            firstOcc=i;
            break;
        }
    }

    for(int i=0; i<n; i++)
    {
        if(target==arr[i])
        {
            lastOcc=i;
        }
    }
    if(firstOcc==-1)
        printf("Not found anything\n");
    else
    {
        printf("%d\n",firstOcc);
        printf("%d\n",lastOcc);
    }
    return 0;
}
```

Linear Search -

```
#include<stdio.h>
int main()
{

    int n,target;
    scanf("%d%d",&n,&target);
    int arr[n];
```

```
int found=0;
    for(int i=0; i<n; i++)
    {
        if(target==arr[i])
        {
            found=1;
            break;
        }
    }
    if(found)
        printf("Element is found\n");
    else
        printf("Element is not found\n");
    return 0;
}
```