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#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#include<math.h>

int factor(int n,int x)
{
    int i=0;
    //printf("Inside Factor");

    while(n!=0)
    {
        //      printf("Inside Factor While");
        if(n%x==0)
        {
            //      printf("Inside Factor i++");
            i++;
            n=n/x;
        }
        else
            break;

    }
    if(i!=0)
        printf("(%d^%d)",x,i);
    return 0;
}

int isPrime(int n)
{
    int i,s;
    //      printf("Inside IsPrime");
    s=sqrt(n);
    for(i=2;i<=s;i++)
    {
        //      printf("Inside IsPrime for loop");

        if(n%i==0)
            return 0;
    }
    return 1;
}

int main()
{
    int nu,s,i;
    printf("\n\nEnter the Number whose prime factors are to be determined : ");
    scanf("%d",&nu);

    printf("\n\n\t%d  = ",nu);

    for(i=2;i<=nu;i++)
    {
        //      printf("Inside main for loop");
        if(isPrime(i))
        {
            //      printf("Inside main if condition");

```

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        factor(nu,i);
    }
}

return 0;
}
```