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(a)

```c
#include <stdio.h>
int main() {
    long long n;
    int count = 0;
    printf("Enter an integer: ");
    scanf("%lld", &n);
    while (n != 0) {
        n /= 10;    // n = n/10
        ++count;
    }
    printf("Number of digits: %d", count);
}
```

```
Enter an integer: 786421554
Number of digits: 9
```

(g)

```c
#include<stdio.h>
long factorial(int);
main()
{
    int number;
    long fact = 1;
    printf("Enter a number to calculate it's factorial\n");
    scanf("%d",&number);
    printf("%d! = %ld\n", number, factorial(number));
    return 0;
}
long factorial(int n)
{
    int c;
    long result = 1;
    for( c = 1 ; c <= n ; c++ )
        result = result*c;
    return ( result );
}
```

```
Enter a number to calculate it's factorial
6
6! = 720
```

(j)

```c
#include <stdio.h>
#include <string.h>
int main()
{
    char string1[20];
    int i, length;
    int flag = 0;

    printf("Enter a string:");
    scanf("%s", string1);

    length = strlen(string1);
        for(i=0;i < length ;i++){
        if(string1[i] != string1[length-i-1]){
            flag = 1;
            break;
    }
}
    if (flag)
{
        printf("%s is not a palindrome", string1);
    }
    else
{
        printf("%s is a palindrome", string1);
    }
    return 0;
}
```

```
Enter  a string: madam
madam is a palindrome
```