
1- Write a program to count the number of digits in a given number.

اكتب برنامجًا لحساب عدد الأرقام في رقم معين.

Input

```
Enter a number: 1234
```

Output

```
Number of digits: 4
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num, count = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    while (num != 0) {
        num /= 10;
        count++;
    }

    printf("Number of digits: %d\n", count);

    return 0;
}
```

2- program to run continuously, allowing the user to enter multiple numbers and counting their digits.

برنامج ليعمل بشكل مستمر، مما يسمح للمستخدم بإدخال أرقام متعددة وحساب أرقامها.

Input & Output

```
Enter a number (0 to exit): 126
Number of digits: 3
Enter a number (0 to exit): 1234
Number of digits: 4
Enter a number (0 to exit): 15987
Number of digits: 5
Enter a number (0 to exit): 0
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    while (1) {
        int num, count = 0;

        printf("Enter a number (0 to exit): ");
        scanf("%d", &num);

        if (num == 0) {
            break;
        }

        while (num != 0) {
            num /= 10;
            count++;
        }

        printf("Number of digits: %d\n", count);
    }

    return 0;
}
```

3- Write a program to calculate the sum of digits of a given number.

اكتب برنامجًا لحساب مجموع أرقام عدد معين.

Input

```
Enter a number: 1235
```

Output

```
Sum of digits: 11
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num, sum = 0, digit;

    printf("Enter a number: ");
    scanf("%d", &num);

    while (num != 0) {
        digit = num % 10;
        sum += digit;
        num /= 10;
    }

    printf("Sum of digits: %d\n", sum);

    return 0;
}
```

4- program to run continuously, allowing the user to enter multiple numbers and calculating the sum of their digits.

برنامج ليعمل بشكل مستمر، مما يسمح للمستخدم بإدخال أرقام متعددة وحساب مجموع أرقامها.

Input & Output

```
Enter a number (0 to exit): 123
Sum of digits: 6
Enter a number (0 to exit): 159
Sum of digits: 15
Enter a number (0 to exit): 0
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    while (1) {
        int num, sum = 0, digit;

        printf("Enter a number (0 to exit): ");
        scanf("%d", &num);

        if (num == 0) {
            break;
        }

        while (num != 0) {
            digit = num % 10;
            sum += digit;
            num /= 10;
        }

        printf("Sum of digits: %d\n", sum);
    }

    return 0;
}
```

5- Write a program that takes a number as input and prints both the result of dividing the number by 10 and the remainder.

اكتب برنامجًا يأخذ رقمًا كمدخل ويطبع نتيجة قسمة الرقم على 10 والباقي.

Input

```
Enter a number: 15
```

Output

```
Quotient after dividing by 10: 1
Remainder: 5
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num;

    printf("Enter a number: ");
    scanf("%d", &num);

    int quotient = num / 10;
    int remainder = num % 10;

    printf("Quotient after dividing by 10: %d\n", quotient);
    printf("Remainder: %d\n", remainder);

    return 0;
}
```

6- Write a program that takes an integer and a digit as input and counts the occurrences of that digit.

اكتب برنامجًا يأخذ عددًا صحيحًا ورقمًا كمدخلات ويحسب تكرارات هذا الرقم.

Input

```
Enter a number: 12342
Enter the digit to count: 2
```

Output

```
Occurrences of digit 2: 2
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num, digit, count = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    printf("Enter the digit to count: ");
    scanf("%d", &digit);

    while (num != 0) {
        if (num % 10 == digit) {
            count++;
        }
        num /= 10;
    }

    printf("Occurrences of digit %d: %d\n", digit, count);

    return 0;
}
```

7- Write a program that takes a number as input from the user and counts the occurrences of digits 3 and 5 in that number. The program should then display the count of each digit.

اكتب برنامجًا يأخذ رقمًا كمدخل من المستخدم ويحصي تكرارات الرقمين 3 و5 في هذا الرقم. يجب أن يعرض البرنامج بعد ذلك عدد كل رقم.

Input

```
Enter a number: 155356
```

Output

```
Occurrences of digit 3: 1
Occurrences of digit 5: 3
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num, count3 = 0, count5 = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    while (num != 0) {
        int digit = num % 10;

        if (digit == 3) {
            count3++;
        } else if (digit == 5) {
            count5++;
        }

        num /= 10;
    }

    printf("Occurrences of digit 3: %d\n", count3);
    printf("Occurrences of digit 5: %d\n", count5);

    return 0;
}
```

8- Write a program that takes an integer as input and counts the number of zeros in it.

اكتب برنامجا يأخذ عددا صحيحا كمدخل ويحسب عدد الأصفار فيه.

Input

```
Enter a number: 100320
```

Output

```
Number of zeros: 3
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num, zeroCount = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    while (num != 0) {
        if (num % 10 == 0) {
            zeroCount++;
        }
        num /= 10;
    }

    printf("Number of zeros: %d\n", zeroCount);

    return 0;
}
```

9- Write a program that takes an integer as input and prints its digits in reverse order.

اكتب برنامجا يأخذ عددا صحيحا كمدخل ويطبع أرقامه بترتيب عكسي.

Input

```
Enter a number: 1598
```

Output

```
Digits in reverse order: 8 9 5 1
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num;

    printf("Enter a number: ");
    scanf("%d", &num);

    printf("Digits in reverse order: ");
    while (num != 0) {
        printf("%d ", num % 10);
        num /= 10;
    }

    return 0;
}
```

10- Write a program that takes an integer as input and counts the number of even and odd digits.

اكتب برنامجا يأخذ عددا صحيحا كمدخل ويحسب عدد الأرقام الزوجية والفردية.

Input

```
Enter a number: 12345
```

Output

```
Even digits: 2
Odd digits: 3
```

Solution

```c
// www.gammal.tech

#include <stdio.h>

int main() {
    int num, digit, evenCount = 0, oddCount = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    while (num != 0) {
        digit = num % 10;

        if (digit % 2 == 0) {
            evenCount++;
        } else {
            oddCount++;
        }

        num /= 10;
    }

    printf("Even digits: %d\n", evenCount);
    printf("Odd digits: %d\n", oddCount);

    return 0;
}
```
