

**1. Write a program to check if a number is positive, negative, or zero.**

```
#include <stdio.h>

int main() {
    int number;
    scanf("%d", &number);
    if (number > 0) {
        printf("The number is positive.\n");
    } else if (number < 0) {
        printf("The number is negative.\n");
    } else {
        printf("The number is zero.\n");
    }
    return 0;
}
```

A screenshot of a code editor and terminal window. The code editor at the top shows lines 17 and 18 of a C program, with line 17 ending in a closing curly brace. The terminal window below, titled 'input', shows the output 'The number is positive.' followed by a message: '..Program finished with exit code 0' and 'Press ENTER to exit console.' with a cursor icon.

## 2. Write a program to find the largest among three numbers.

```
#include <stdio.h>
```

```
int main() {
```

```
int num1, num2, num3;
```

```
scanf("%d %d %d", &num1, &num2, &num3);
```

```
if (num1 >= num2 && num1 >= num3) {
```

```
printf("The largest number is: %d\n", num1);
```

```
} else if (num2 >= num1 && num2 >= num3) {
```

```
printf("The largest number is: %d\n", num2);
```

```
} else {
```

```
printf("The largest number is: %d\n", num3);
```

```
}
```

```
return 0;
```

```
}
```



```
input
100
20
10
The largest number is: 100

...Program finished with exit code 0
Press ENTER to exit console.
```

### 3. Write a program to check if a year is a leap year.

```
#include <stdio.h>

int main() {
    int year;

    scanf("%d", &year);

    if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
        printf("%d is a leap year.\n", year);
    } else {
        printf("%d is not a leap year.\n", year);
    }

    return 0;
}
```



The screenshot shows a terminal window with a title bar containing standard icons and the word "input". The terminal output is as follows:

```
2004
2004 is a leap year.

...Program finished with exit code 0
Press ENTER to exit console.
```

#### 4. Write a program to check whether a character is a vowel or consonant

```
#include <stdio.h>

int main() {
    char ch;

    scanf("%c", &ch);

    if (ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' || ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')
        printf("Vowel\n");
    else
        printf("Consonant\n");

    return 0;
}
```

A screenshot of a terminal window titled 'input'. The window has a dark background with light green text. The first line shows the user input 'A' followed by a newline character. The second line shows the program's output 'Vowel'. The third line shows the program's completion message: '...Program finished with exit code 0'. The fourth line shows the prompt 'Press ENTER to exit console.' followed by a cursor. The terminal window includes standard icons for file operations and settings in the top-left corner.

```
input
A
Vowel

...Program finished with exit code 0
Press ENTER to exit console.
```

## 5. Assign grades based on marks

```
#include <stdio.h>
```

```
int main() {  
    int marks;  
    scanf("%d", &marks);  
  
    if (marks >= 90)  
        printf("Grade: A\n");  
    else if (marks >= 80)  
        printf("Grade: B\n");  
    else if (marks >= 70)  
        printf("Grade: C\n");  
    else if (marks >= 60)  
        printf("Grade: D\n");  
    else  
        printf("Grade: F\n");  
    return 0;  
}
```

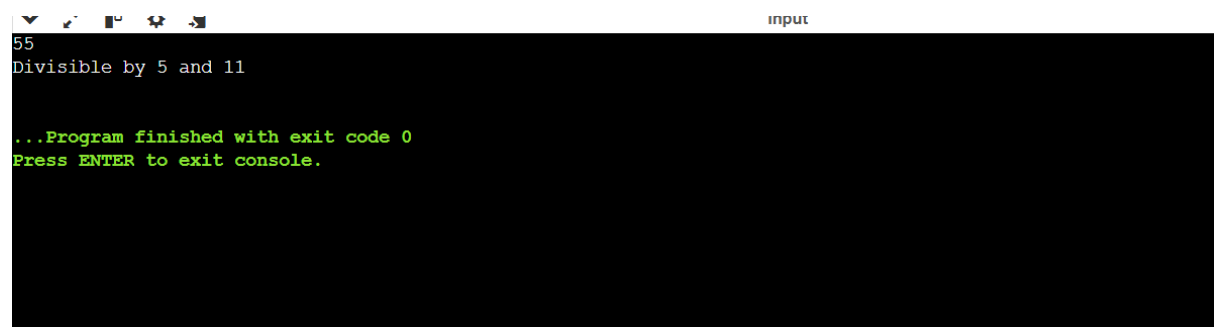


```
input  
70  
Grade: C  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

## 6. Check whether a number is divisible by 5 and 11

```
#include <stdio.h>
```

```
int main() {  
    int num;  
    scanf("%d", &num);  
  
    if (num % 5 == 0 && num % 11 == 0)  
        printf("Divisible by 5 and 11\n");  
    else  
        printf("Not divisible by 5 and 11\n");  
  
    return 0;  
}
```



```
input  
55  
Divisible by 5 and 11  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

**7. Write a program to find the absolute value of a number.**

```
#include <stdio.h>
```

```
int main() {
```

```
    int num;
```

```
    scanf("%d", &num);
```

```
    if (num < 0)
```

```
        num = -num;
```

```
    printf("Absolute value: %d\n", num);
```

```
    return 0;
```

```
}
```



The screenshot shows a terminal window with a dark background. At the top, there is a toolbar with icons for window management and settings. The word "input" is visible in the top right corner. The terminal displays the following text: "50" (the input), "Absolute value: 50" (the output), and "...Program finished with exit code 0" (the status message). Below the status message, it says "Press ENTER to exit console." followed by a cursor icon.

**8. Write a menu-driven program to perform +, -, \*, / operations.**

```
#include <stdio.h>

int main() {
    int choice;

    float a, b, result;

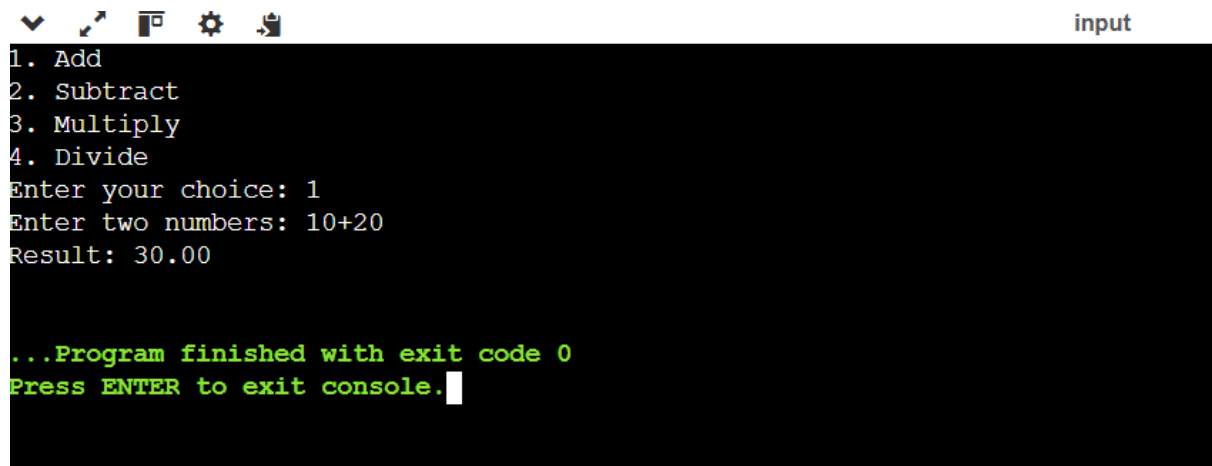
    printf("1. Add\n2. Subtract\n3. Multiply\n4. Divide\nEnter your choice: ");
    scanf("%d", &choice);

    printf("Enter two numbers: ");
    scanf("%f %f", &a, &b);

    switch (choice) {
        case 1: result = a + b;
            printf("Result: %.2f\n", result);
            break;
        case 2: result = a - b;
            printf("Result: %.2f\n", result);
            break;
        case 3: result = a * b;
            printf("Result: %.2f\n", result);
            break;
        case 4: if (b != 0)
            result = a / b;
            else {
                printf("Cannot divide by zero\n");
                return 1;
            }
            printf("Result: %.2f\n", result);
            break;
        default: printf("Invalid choice\n");
    }

    return 0;
}
```





A terminal window titled 'input' with a dark background. It shows the execution of a calculator program. The user is presented with a menu of four options: 1. Add, 2. Subtract, 3. Multiply, and 4. Divide. The user enters '1' for Add. Then, the user is prompted to enter two numbers, and they enter '10+20'. The program outputs 'Result: 30.00'. At the end, it shows '...Program finished with exit code 0' and 'Press ENTER to exit console.' with a cursor.

```
1. Add
2. Subtract
3. Multiply
4. Divide
Enter your choice: 1
Enter two numbers: 10+20
Result: 30.00

...Program finished with exit code 0
Press ENTER to exit console.
```

**9. Write a program to find roots of a quadratic equation.**

```
#include <stdio.h>
```

```
#include <math.h>
```

```
int main() {
```

```
    float a, b, c, d;
```

```
    printf("Enter a b c: ");
```

```
    scanf("%f%f%f", &a, &b, &c);
```

```
    d = b*b - 4*a*c;
```

```
    if (d > 0)
```

```
        printf("Roots: %.2f and %.2f\n", (-b+sqrt(d))/(2*a), (-b-sqrt(d))/(2*a));
```

```
    else if (d == 0)
```

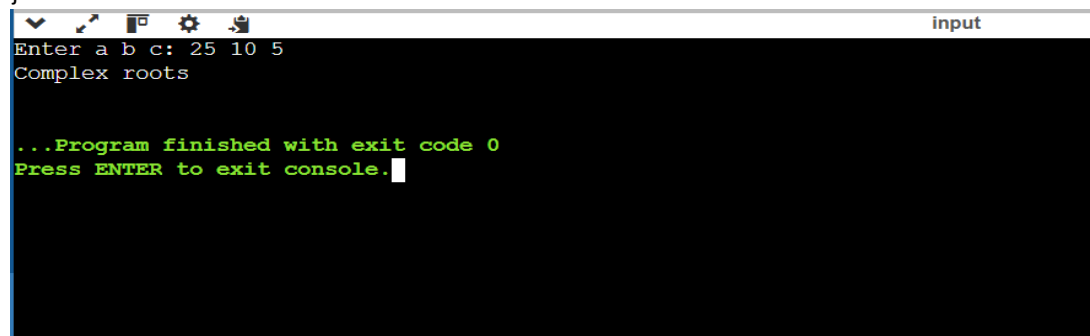
```
        printf("Root: %.2f\n", -b/(2*a));
```

```
    else
```

```
        printf("Complex roots\n");
```

```
    return 0;
```

```
}
```



A terminal window titled 'input' with a dark background. It shows the execution of a program to find the roots of a quadratic equation. The user is prompted to enter 'a b c' and enters '25 10 5'. The program outputs 'Complex roots'. At the end, it shows '...Program finished with exit code 0' and 'Press ENTER to exit console.' with a cursor.

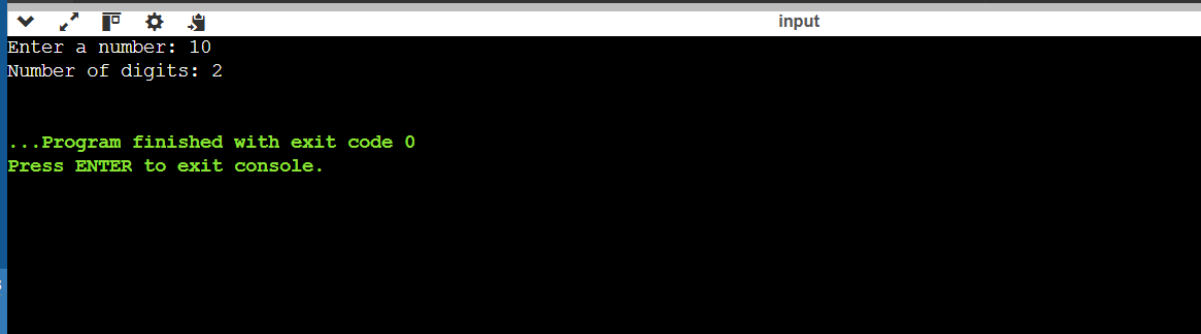
```
Enter a b c: 25 10 5
Complex roots

...Program finished with exit code 0
Press ENTER to exit console.
```

## 10. Find the number of digits in a number

```
#include <stdio.h>

int main() {
    int num, count = 0;
    printf("Enter a number: ");
    scanf("%d", &num);
    if (num == 0)
        count = 1;
    else {
        while (num != 0) {
            num /= 10;
            count++;
        }
    }
    printf("Number of digits: %d\n", count);
    return 0;
}
```

A screenshot of a terminal window titled 'input'. The window has a dark background with light-colored text. The output shows the program prompting for a number, receiving '10', and calculating the number of digits as 2. It then displays a green message indicating the program finished with exit code 0 and prompts the user to press ENTER to exit the console.

```
input
Enter a number: 10
Number of digits: 2

...Program finished with exit code 0
Press ENTER to exit console.
```