

## Assignment – 1 (Control Statements and Loops)

- Write a C program to check positive, negative or zero using simple if or if else. C program to input any number from user and check whether the given number is positive, negative or zero. Logic to check negative, positive or zero in C programming.

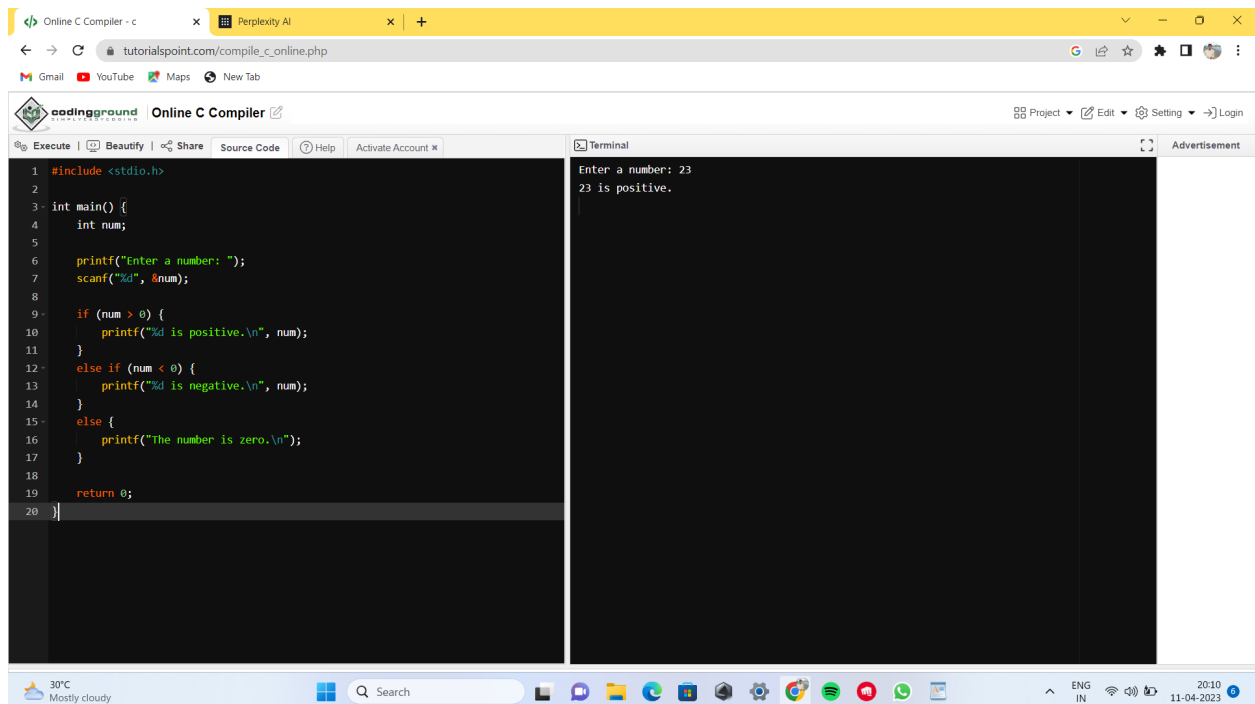
Example

Input

Input number: 23

Output

23 is positive



```
1 #include <stdio.h>
2
3 int main() {
4     int num;
5
6     printf("Enter a number: ");
7     scanf("%d", &num);
8
9     if (num > 0) {
10        printf("%d is positive.\n", num);
11    }
12    else if (num < 0) {
13        printf("%d is negative.\n", num);
14    }
15    else {
16        printf("The number is zero.\n");
17    }
18
19    return 0;
20 }
```

Enter a number: 23  
23 is positive.

- Write a C program to check whether a number is divisible by 5 and 11 or not using if else. How to check divisibility of any number in C programming. C program to enter any number and check whether it is divisible by 5 and 11 or not. Logic to check divisibility of a number in C program.

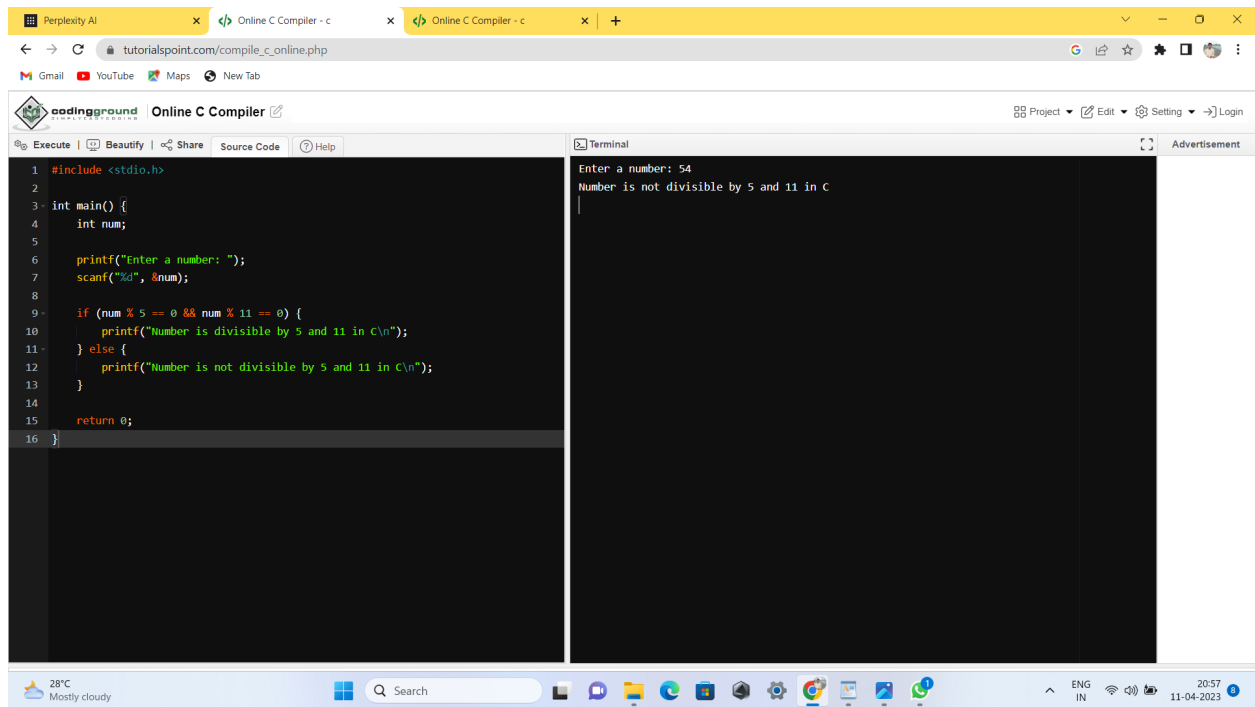
Example

Input

Input number: 55

Output

Number is divisible by 5 and 11



The screenshot shows a web browser with multiple tabs, including 'Perplexity AI' and 'Online C Compiler - c'. The active tab is 'Online C Compiler - c' at the URL 'tutorialspoint.com/compile\_c\_online.php'. The compiler interface has a dark theme. The source code editor on the left contains the following C program:

```
1 #include <stdio.h>
2
3 int main() {
4     int num;
5
6     printf("Enter a number: ");
7     scanf("%d", &num);
8
9     if (num % 5 == 0 && num % 11 == 0) {
10        printf("Number is divisible by 5 and 11 in C\n");
11    } else {
12        printf("Number is not divisible by 5 and 11 in C\n");
13    }
14
15    return 0;
16 }
```

The terminal window on the right shows the execution output:

```
Enter a number: 54
Number is not divisible by 5 and 11 in C
```

The Windows taskbar at the bottom shows the date and time as 11-04-2023, 20:57, and the system language as ENG IN.

- Write a C program to input a character from user and check whether the given character is alphabet or not using if else. How to check whether a character is alphabet or not in C programming. Logic to check if a character is alphabet or not in C program.

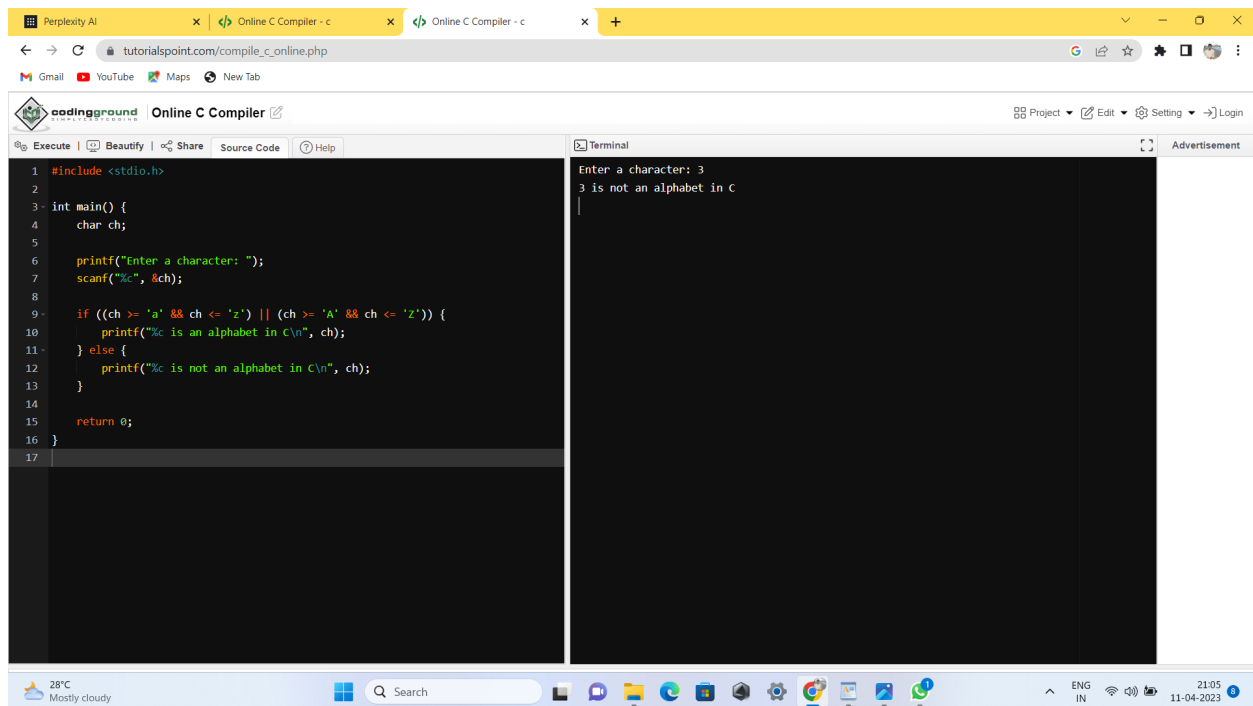
Example

Input

Input character: a

Output

'a' is alphabet



```
1 #include <stdio.h>
2
3 int main() {
4     char ch;
5
6     printf("Enter a character: ");
7     scanf("%c", &ch);
8
9     if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')) {
10        printf("%c is an alphabet in C\n", ch);
11    } else {
12        printf("%c is not an alphabet in C\n", ch);
13    }
14
15    return 0;
16 }
17
```

Terminal

```
Enter a character: 3
3 is not an alphabet in C
```

- Write a C program to count the Vowels in the given string.

The screenshot shows a web browser with multiple tabs of 'Online C Compiler'. The active tab displays a C program in the editor and its compilation output in the terminal.

**C Program Code:**

```

1 #include <stdio.h>
2 #include <ctype.h>
3
4 int main() {
5     char str;
6     int i, vowels = 0;
7
8     printf("Enter a string: ");
9     scanf("%s",str);
10
11     for (i = 0; str[i] != '\0'; i++)
12     {
13         if (tolower(str[i]) == 'a' || tolower(str[i]) == 'e' || tolower(str[i])
14             == 'i' || tolower(str[i]) == 'o' || tolower(str[i]) == 'u') {
15             vowels++;
16         }
17     }
18     printf("Number of vowels in the string: %d\n", vowels);
19
20     return 0;
21 }

```

**Compilation Errors:**

```

main.c:9:13: warning: format '%s' expects argument of type 'char *', but argument 2 has
type 'int' [-Wformat=]
9 |     scanf("%s",str);
  |             ^~
  |             |
  |             | int
  |             char *
main.c:11:20: error: subscripted value is neither array nor pointer nor vector
11 |     for (i = 0; str[i] != '\0'; i++)
    |                   ^
main.c:13:24: error: subscripted value is neither array nor pointer nor vector
13 |     if (tolower(str[i]) == 'a' || tolower(str[i]) == 'e' || tolower(str[i])
    |                   ^
    |                   |
    |                   | int
    |                   char *
main.c:13:50: error: subscripted value is neither array nor pointer nor vector
13 |     if (tolower(str[i]) == 'a' || tolower(str[i]) == 'e' || tolower(str[i])
    |                   ^
    |                   |
    |                   | int
    |                   char *
main.c:13:76: error: subscripted value is neither array nor pointer nor vector
13 |     tolower(str[i]) == 'o' || tolower(str[i]) == 'u') {
    |                   ^
    |                   |
    |                   | int
    |                   char *
main.c:13:102: error: subscripted value is neither array nor pointer nor vector
13 |     tolower(str[i]) == 'e' || tolower(str[i]) == 'i' || tolower(str[i]) == 'o' ||
    |                   ^
    |                   |
    |                   | int
    |                   char *

```

The errors indicate that the variable `str` is declared as a `char` but is being used as an array (`str[i]`). The program is syntactically correct for a C program, but it contains a logical error in the variable declaration.

- Write a C program to input character from user and check whether character is uppercase or lowercase alphabet using if else. How to check uppercase and lowercase using if else in C programming. Logic to check uppercase and lowercase alphabets in C program.

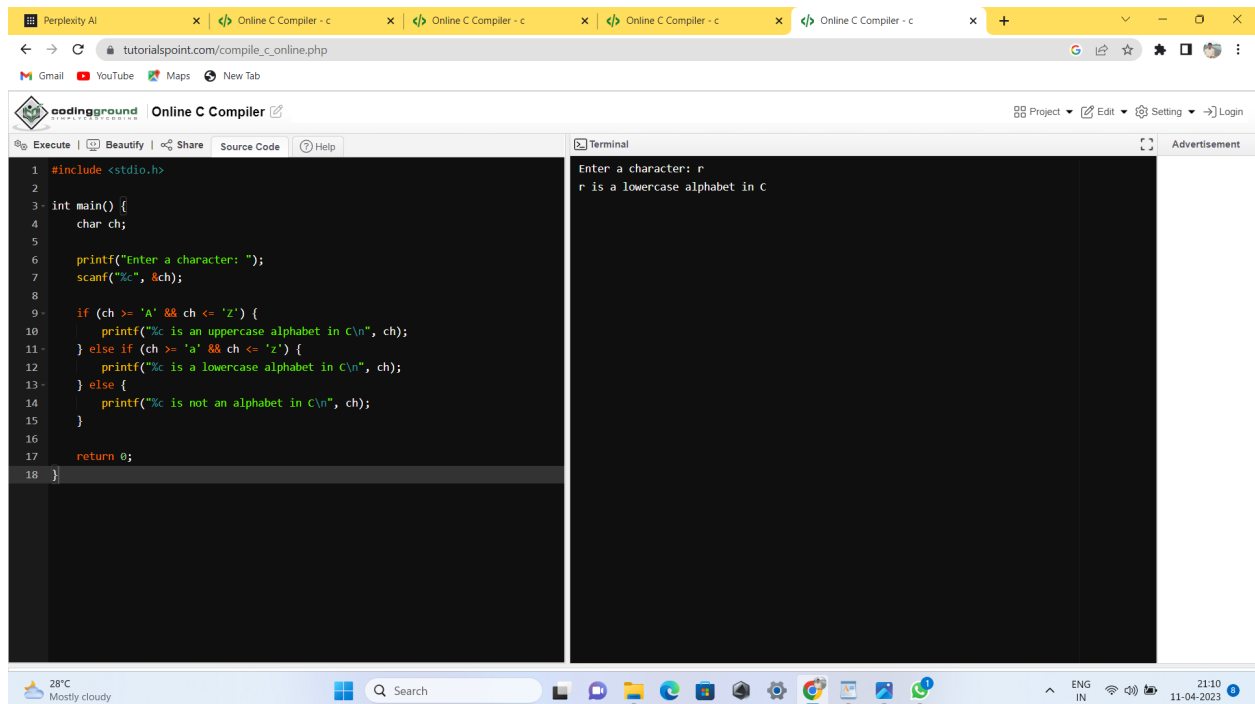
Example

Input

Input character: C

Output

'C' is uppercase alphabet



The screenshot shows a web browser with multiple tabs of an online C compiler. The active tab displays a C program in the editor and its execution in the terminal. The program is as follows:

```
1 #include <stdio.h>
2
3 int main() {
4     char ch;
5
6     printf("Enter a character: ");
7     scanf("%c", &ch);
8
9     if (ch >= 'A' && ch <= 'Z') {
10        printf("%c is an uppercase alphabet in C\n", ch);
11    } else if (ch >= 'a' && ch <= 'z') {
12        printf("%c is a lowercase alphabet in C\n", ch);
13    } else {
14        printf("%c is not an alphabet in C\n", ch);
15    }
16
17    return 0;
18 }
```

The terminal output shows the user entered 'r', and the program responded with "r is a lowercase alphabet in C". The Windows taskbar at the bottom indicates a temperature of 28°C and the date 11-04-2023.

- Write a C program to input amount from user and print minimum number of notes (Rs. 500, 100, 50, 20, 10, 5, 2, 1) required for the amount. How to the minimum number of notes required for the given amount in C programming. Program to find minimum number of notes required for the given denomination. Logic to find minimum number of denomination for a given amount in C program.

Example

Input

Input amount: 575

Output

Total number of notes:

500: 1

100: 0

50: 1

20: 1

10: 0

5: 1

2: 0

1: 0

The screenshot shows a web browser with multiple tabs of 'Online C Compiler'. The active tab is 'tutorialspoint.com/compile\_c\_online.php'. The browser's address bar shows the URL. Below the browser, there is a window titled 'Online C Compiler' from 'codingground'. The window has a menu bar with 'Execute', 'Beautify', 'Share', 'Source Code', and 'Help'. The main area is split into two panes. The left pane shows the C code for calculating the minimum number of notes for a given amount. The right pane shows the output of the program. The code is as follows:

```
1 #include <stdio.h>
2
3 int main() {
4     int amount, notes;
5
6     printf("Enter the amount: ");
7     scanf("%d", &amount);
8
9     notes = amount / 500;
10    printf("Rs. 500 notes: %d\n", notes);
11    amount = amount - notes * 500;
12
13    notes = amount / 100;
14    printf("Rs. 100 notes: %d\n", notes);
15    amount = amount - notes * 100;
16
17    notes = amount / 50;
18    printf("Rs. 50 notes: %d\n", notes);
19    amount = amount - notes * 50;
20
21    notes = amount / 20;
22    printf("Rs. 20 notes: %d\n", notes);
23    amount = amount - notes * 20;
24
25    notes = amount / 10;
26    printf("Rs. 10 notes: %d\n", notes);
27    amount = amount - notes * 10;
28}
```

The output of the program is as follows:

```
Enter the amount: 4
Rs. 500 notes: 0
Rs. 100 notes: 0
Rs. 50 notes: 0
Rs. 20 notes: 0
Rs. 10 notes: 0
Rs. 5 notes: 0
Rs. 2 notes: 2
Rs. 1 notes: 0
```

The bottom of the screenshot shows a Windows taskbar with the date and time '11-04-2023 21:13' and the language 'ENG IN'.

Perplexity AI | Online C Compiler - c | Online C Compiler - c | Online C Compiler - c | Online C Compiler - c | Online C Compiler - c | +

tutorialspoint.com/compile\_c\_online.php

Gmail | YouTube | Maps | New Tab

### codingground Online C Compiler

Project | Edit | Setting | Login

Execute | Beautify | Share | Source Code | Help | Terminal | Advertisement

```
14 printf("Rs. 100 notes: %d\n", notes);
15 amount = amount - notes * 100;
16
17 notes = amount / 50;
18 printf("Rs. 50 notes: %d\n", notes);
19 amount = amount - notes * 50;
20
21 notes = amount / 20;
22 printf("Rs. 20 notes: %d\n", notes);
23 amount = amount - notes * 20;
24
25 notes = amount / 10;
26 printf("Rs. 10 notes: %d\n", notes);
27 amount = amount - notes * 10;
28
29 notes = amount / 5;
30 printf("Rs. 5 notes: %d\n", notes);
31 amount = amount - notes * 5;
32
33 notes = amount / 2;
34 printf("Rs. 2 notes: %d\n", notes);
35 amount = amount - notes * 2;
36
37 notes = amount / 1;
38 printf("Rs. 1 notes: %d\n", notes);
39
40 return 0;
41 }
```

Enter the amount: 4  
Rs. 500 notes: 0  
Rs. 100 notes: 0  
Rs. 50 notes: 0  
Rs. 20 notes: 0  
Rs. 10 notes: 0  
Rs. 5 notes: 0  
Rs. 2 notes: 2  
Rs. 1 notes: 0

28°C Mostly cloudy | Search | ENG IN | 21:13 11-04-2023

- Write a C program to input a number from user and count number of digits in the given integer using loop. How to find total digits in a given integer using loop in C programming. Logic to count digits in a given integer without using loop in C program.

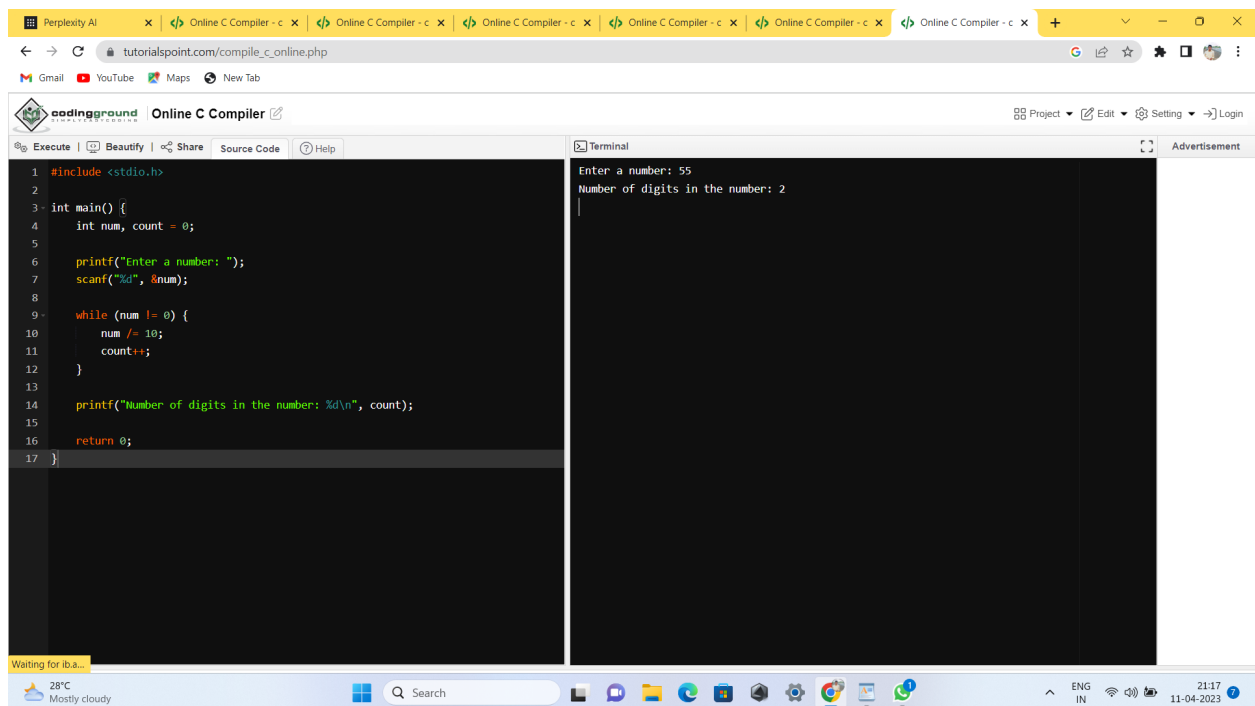
Example

Input

Input num: 35419

Output

Number of digits: 5



The screenshot shows a web browser with multiple tabs of 'Online C Compiler'. The active tab is 'tutorialspoint.com/compile\_c\_online.php'. The browser's address bar shows the URL. Below the browser, there is a window titled 'codingground Online C Compiler'. The window has a menu bar with 'Execute', 'Beautify', 'Share', 'Source Code', and 'Help'. The main area is split into two panes. The left pane shows the source code of a C program: 

```
1 #include <stdio.h>
2
3 int main() {
4     int num, count = 0;
5
6     printf("Enter a number: ");
7     scanf("%d", &num);
8
9     while (num != 0) {
10        num /= 10;
11        count++;
12    }
13
14    printf("Number of digits in the number: %d\n", count);
15
16    return 0;
17 }
```

 The right pane is a terminal window showing the output of the program: 

```
Enter a number: 55
Number of digits in the number: 2
```

 The bottom of the image shows a Windows taskbar with the date '11-04-2023' and time '21:17'.



- Write a C program to input a number and calculate sum of digits using for loop. How to find sum of digits of a number in C program. Logic to find sum of digits of a given number in C programming.

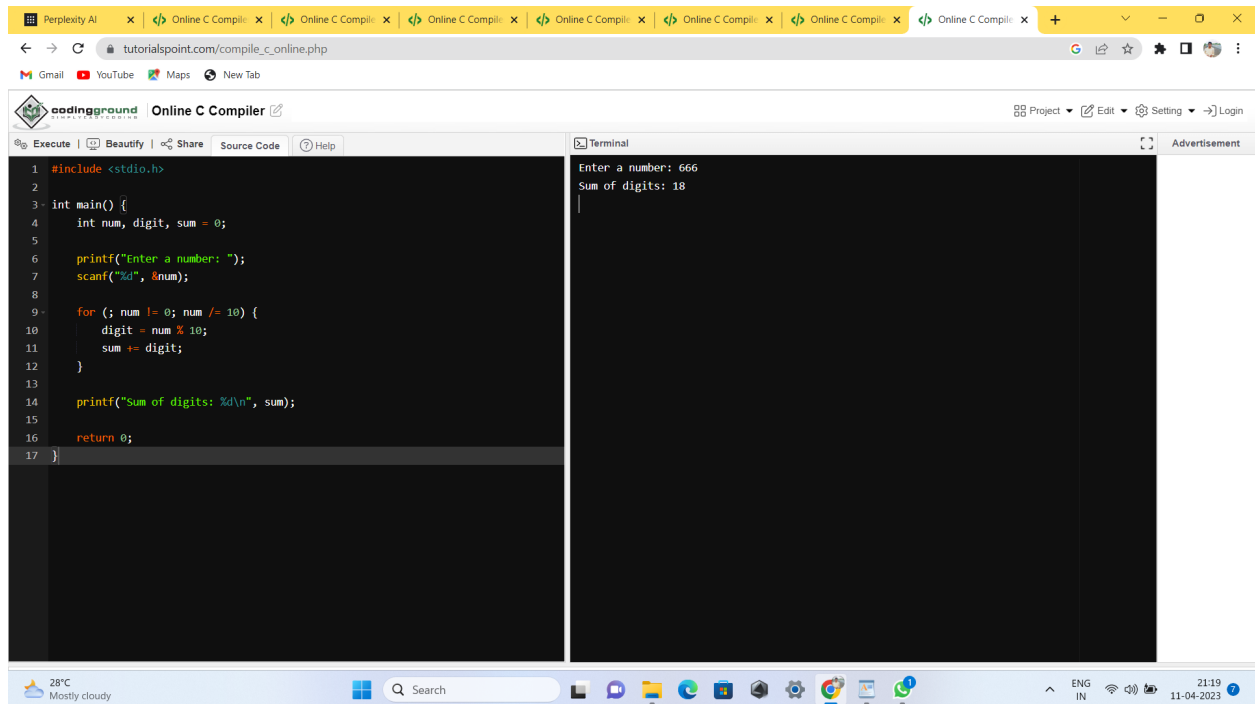
Example

Input

Input any number: 1234

Output

Sum of digits: 10



The screenshot shows a web browser with multiple tabs, including 'Perplexity AI' and several 'Online C Compiler' tabs. The active tab is 'tutorialspoint.com/compile\_c\_online.php'. The browser's address bar shows the URL. Below the browser, there is a window titled 'Online C Compiler' from 'codingground'. The window has a menu bar with 'Execute', 'Beautify', 'Share', 'Source Code', and 'Help'. The main area is split into two panes. The left pane contains C code for calculating the sum of digits of a number using a for loop. The right pane is a terminal window showing the program's output. The code in the left pane is as follows:

```
1 #include <stdio.h>
2
3 int main() {
4     int num, digit, sum = 0;
5
6     printf("Enter a number: ");
7     scanf("%d", &num);
8
9     for (; num != 0; num /= 10) {
10        digit = num % 10;
11        sum += digit;
12    }
13
14    printf("Sum of digits: %d\n", sum);
15
16    return 0;
17 }
```

The terminal window on the right shows the following output:

```
Enter a number: 666
Sum of digits: 18
```

The bottom of the screenshot shows a Windows taskbar with a search bar, several application icons, and system tray information including the date and time (21:19, 11-04-2023).

- Write a C program to input a number from user and find reverse of the given number using for loop. How to find reverse of any number using loop in C program. Logic to find reverse of a number in C programming.

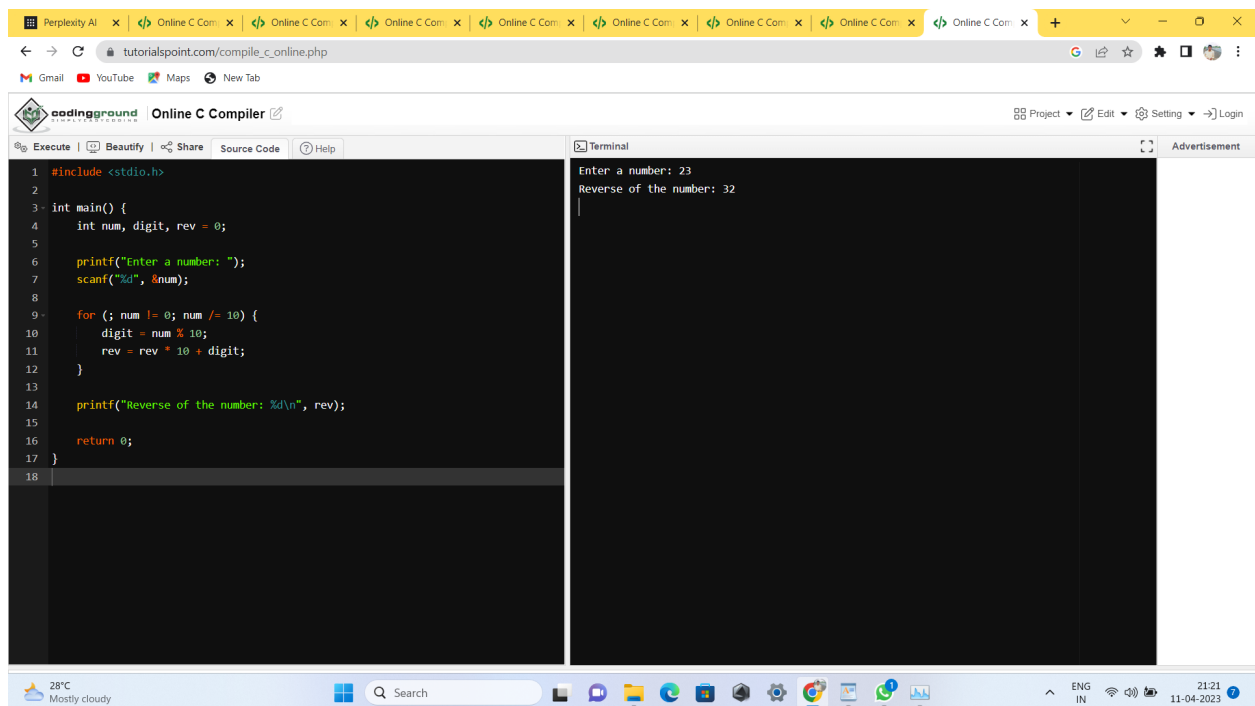
Example

Input

Input number: 12345

Output

Reverse of 12345 = 54321



The screenshot shows a web browser window with the URL `tutorialspoint.com/compile_c_online.php`. The browser has multiple tabs open, including "Perplexity AI" and several "Online C Compiler" tabs. The main content area displays the "Online C Compiler" interface. On the left, there is a code editor with the following C program:

```
1 #include <stdio.h>
2
3 int main() {
4     int num, digit, rev = 0;
5
6     printf("Enter a number: ");
7     scanf("%d", &num);
8
9     for (; num != 0; num /= 10) {
10         digit = num % 10;
11         rev = rev * 10 + digit;
12     }
13
14     printf("Reverse of the number: %d\n", rev);
15
16     return 0;
17 }
18
```

On the right, there is a terminal window showing the program's execution:

```
Enter a number: 23
Reverse of the number: 32
```

The bottom of the image shows a Windows taskbar with the date and time "11-04-2023 21:21" and the language "ENG IN".

- Write a C program to input decimal number from user and convert to binary number system. How to convert from decimal number to binary number system in C program. Logic to convert decimal to binary number system in C programming.

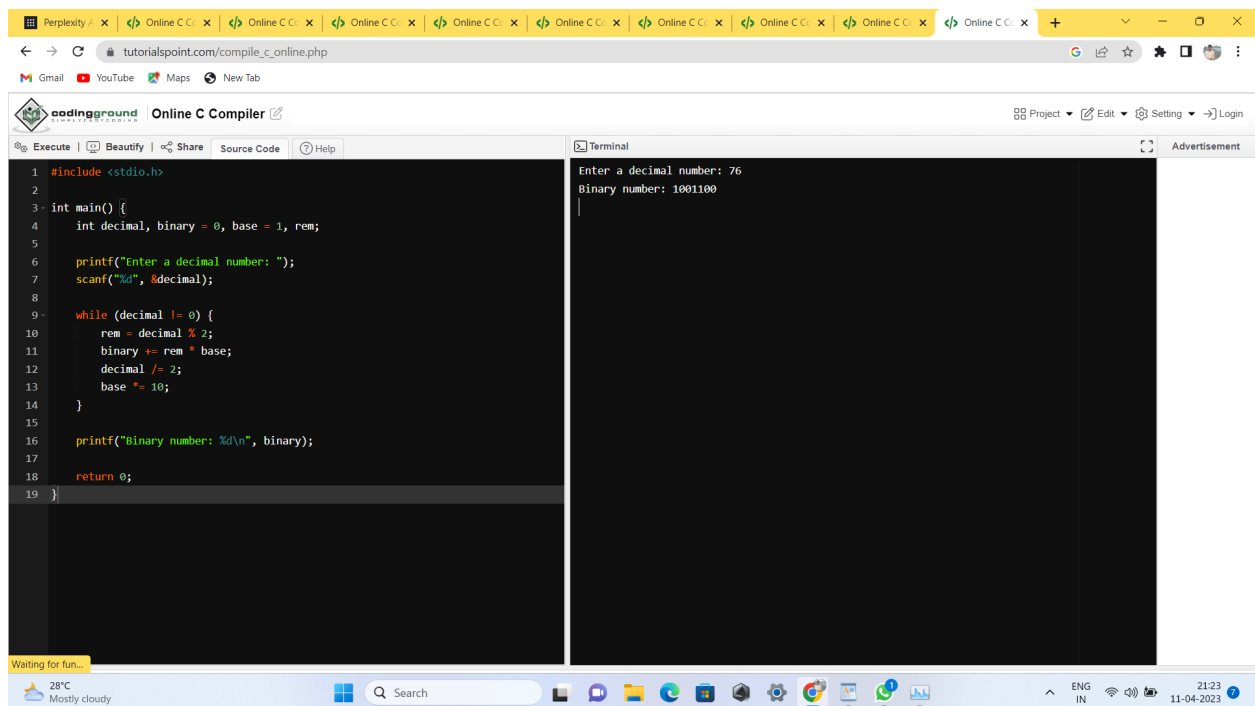
Example

Input

Input decimal number: 112

Output

Binary number: 0111000



The screenshot displays a web browser with multiple tabs, the active one being 'tutorialspoint.com/compile\_c\_online.php'. The browser window shows the 'Online C Compiler' interface. The source code editor contains the following C program:

```
1 #include <stdio.h>
2
3 int main() {
4     int decimal, binary = 0, base = 1, rem;
5
6     printf("Enter a decimal number: ");
7     scanf("%d", &decimal);
8
9     while (decimal != 0) {
10        rem = decimal % 2;
11        binary += rem * base;
12        decimal /= 2;
13        base *= 10;
14    }
15
16    printf("Binary number: %d\n", binary);
17
18    return 0;
19 }
```

The terminal window on the right shows the execution output:

```
Enter a decimal number: 76
Binary number: 1001100
```

The Windows taskbar at the bottom indicates the system temperature is 28°C, mostly cloudy, and the date is 11-04-2023.