Lab Question 1: Reverse a 32-bit Signed Integer

Aim:
To write a C program to reverse a 32-bit signed integer.

Algorithm:

1. Start the program.
2. Read the integer n.
3. Initialize rev = 0.
4. While n != 0:
    - Extract last digit using n % 10.
    - Multiply rev by 10 and add digit.
    - Divide n by 10.
5. Print reversed integer.
6. Stop.

Code:

```
#include <stdio.h>
int main() {
   int n, rev = 0, digit;
   printf("Enter an integer: ");
   scanf("%d", &n);
   while (n != 0) {
      digit = n % 10;
      rev = rev * 10 + digit;
      n /= 10;
   }
   printf("Reversed integer = %d", rev);
   return 0;
}
```

Test Cases:

- Input: 12345 → Output: 54321
- Input: -987 → Output: -789

Result:
The program successfully reverses a 32-bit signed integer.