Check if a number is EVEN or ODD (using bitwise AND)

05 February 2026 00:19

```
#include <stdio.h>

int main()
{
   int n;
   printf("Enter a number: ");
   scanf("%d", &n);

   if (n & 1)
      printf("%d is ODD\n", n);
   else
      printf("%d is EVEN\n", n);

   return 0;
}
```

Check if a number is a POWER OF 2

05 February 2026 00:25

```
#include <stdio.h>

int main()
{
   int n;
   printf("Enter a number: ");
   scanf("%d", &n);

   if (n > 0 && (n & (n - 1)) == 0)
      printf("%d is a Power of 2\n", n);
   else
      printf("%d is NOT a Power of 2\n", n);

   return 0;
}
```

Swap two numbers WITHOUT temporary variable (using XOR)

05 February 2026 00:25

```c
#include <stdio.h>

int main()
{
   int a, b;
   printf("Enter two numbers: ");
   scanf("%d %d", &a, &b);

   a = a ^ b;
   b = a ^ b;
   a = a ^ b;

   printf("After swap: a = %d, b = %d\n", a, b);

   return 0;
}
```

Add two numbers WITHOUT using + or -

05 February 2026 00:26

```
#include <stdio.h>

int main()
{
   int a, b;
   printf("Enter two numbers: ");
   scanf("%d %d", &a, &b);

   while (b != 0)
   {
      int carry = a & b;
      a = a ^ b;
      b = carry << 1;
   }

   printf("Sum = %d\n", a);
   return 0;
}
```

Set a particular BIT

05 February 2026 00:27

```
#include <stdio.h>

int main()
{
   int n, pos;
   printf("Enter number and bit position: ");
   scanf("%d %d", &n, &pos);

   n = n | (1 << pos);

   printf("After setting bit: %d\n", n);
   return 0;
}
```

Clear a particular BIT

05 February 2026 00:27

```
#include <stdio.h>

int main()
{
   int n, pos;
   printf("Enter number and bit position: ");
   scanf("%d %d", &n, &pos);

   n = n & ~(1 << pos);

   printf("After clearing bit: %d\n", n);
   return 0;
}
```

Toggle / Flip a particular BIT

05 February 2026 00:28

```
#include <stdio.h>

int main()
{
   int n, pos;
   printf("Enter number and bit position: ");
   scanf("%d %d", &n, &pos);

   n = n ^ (1 << pos);

   printf("After toggling bit: %d\n", n);
   return 0;
}
```

Check if a particular BIT is SET or NOT

05 February 2026 00:29

```
#include <stdio.h>

int main()
{
   int n, pos;
   printf("Enter number and bit position: ");
   scanf("%d %d", &n, &pos);

   if (n & (1 << pos))
      printf("Bit %d is SET\n", pos);
   else
      printf("Bit %d is NOT SET\n", pos);

   return 0;
}
```

Swap TWO bits at given positions

05 February 2026 00:29

```
#include <stdio.h>

int main()
{
   int n, p1, p2;
   printf("Enter number and two bit positions: ");
   scanf("%d %d %d", &n, &p1, &p2);

   int bit1 = (n >> p1) & 1;
   int bit2 = (n >> p2) & 1;

   if (bit1 != bit2)
   {
      n = n ^ ((1 << p1) | (1 << p2));
   }

   printf("After swapping bits: %d\n", n);
   return 0;
}
```

Swap ALL EVEN and ODD bits

05 February 2026 00:30

```
#include <stdio.h>

int main()
{
   unsigned int n;
   printf("Enter number: ");
   scanf("%u", &n);

   unsigned int even = n & 0xAAAAAAAA;
   unsigned int odd  = n & 0x55555555;

   even >>= 1;
   odd <<= 1;

   n = even | odd;

   printf("After swapping even & odd bits: %u\n", n);
   return 0;
}
```

Left Rotate n bits

05 February 2026 00:31

```
#include <stdio.h>

int main()
{
   unsigned int n;
   int r;
   printf("Enter number and rotate count: ");
   scanf("%u %d", &n, &r);

   unsigned int result = (n << r) | (n >> (32 - r));

   printf("After left rotation: %u\n", result);
   return 0;
}
```