# Imp Program

**1. Program to Check Whether a Number is Prime or Not**

```
#include <stdio.h>
int main() {
   int num, i, flag = 0;
   printf("Enter a number: ");
   scanf("%d", &num);
   for(i = 2; i <= num/2; i++) {
      if(num % i == 0) {
         flag = 1;
         break;
      }
   }
   if (num == 1) {
      printf("1 is neither prime nor composite.\n");
   } else {
      if(flag == 0) {
         printf("%d is a prime number.\n", num);
      } else {
         printf("%d is not a prime number.\n", num);
      }
   }
   return 0;
}
```

**Output**:

```
Enter a number: 7
7 is a prime number.
```

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**2. Program to Find the Factorial of a Number**

```
#include <stdio.h>
int main() {
   int num, i;
   unsigned long long factorial = 1;

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

   for(i = 1; i <= num; i++) {
      factorial *= i;
   }

   printf("Factorial of %d = %llu\n", num, factorial);
   return 0;
}
```

**Output**:

```
Enter a number: 5
Factorial of 5 = 120
```

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**3. Program to Display Fibonacci Sequence**

```
#include <stdio.h>

int main() {
   int n, i;
   unsigned long long first = 0, second = 1, next;

   printf("Enter the number of terms: ");
   scanf("%d", &n);

   printf("Fibonacci Series: ");
```

```
    for(i = 0; i < n; i++) {
        if(i <= 1)
            next = i;
        else {
            next = first + second;
            first = second;
            second = next;
        }
        printf("%llu ", next);
    }

    return 0;
}
```

**Output**:

```
Enter the number of terms: 7
Fibonacci Series: 0 1 1 2 3 5 8
```

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**4. Program to Reverse a Number**

```
#include <stdio.h>

int main() {
    int num, reversed = 0, remainder;

    printf("Enter an integer: ");
    scanf("%d", &num);

    while (num != 0) {
        remainder = num % 10;
        reversed = reversed * 10 + remainder;
        num /= 10;
```

```
    }

    printf("Reversed Number: %d\n", reversed);
    return 0;
}
```

**Output**:

```
Enter an integer: 12345
Reversed Number: 54321
```

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**5. Program to Find Largest of Three Numbers**

```
#include <stdio.h>

int main() {
    int num1, num2, num3;

    printf("Enter three numbers: ");
    scanf("%d %d %d", &num1, &num2, &num3);

    if(num1 >= num2 && num1 >= num3)
        printf("%d is the largest number.\n", num1);
    else if(num2 >= num1 && num2 >= num3)
        printf("%d is the largest number.\n", num2);
    else
        printf("%d is the largest number.\n", num3);

    return 0;
}
```

**Output**:

```
Enter three numbers: 10 25 15
25 is the largest number.
```

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**6. Program to Calculate Sum of Digits of a Number**

```
#include <stdio.h>

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

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

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

   printf("Sum of digits: %d\n", sum);
   return 0;
}
```

**Output**:

```
Enter a number: 1234
Sum of digits: 10
```

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**7. Program to Print an Armstrong Number**

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

int main() {
   int num, sum = 0, temp, remainder, n = 0;

   printf("Enter an integer: ");
   scanf("%d", &num);
```

```
    temp = num;
    while (temp != 0) {
        temp /= 10;
        ++n;
    }

    temp = num;
    while (temp != 0) {
        remainder = temp % 10;
        sum += pow(remainder, n);
        temp /= 10;
    }

    if (sum == num)
        printf("%d is an Armstrong number.\n", num);
    else
        printf("%d is not an Armstrong number.\n", num);

    return 0;
}
```

**Output**:

```
Enter an integer: 153
153 is an Armstrong number.
```