Table of Content

Basic Simple C Programs

1. C Program to Display The Size of Different Data Types

Data Type	Size (bytes)	Range	Format Specifier
int	4	-2,147,483,648 to 2,147,483,647	%d
long int	4	-2,147,483,648 to 2,147,483,647	%ld
float	4	1.2E-38 to 3.4E+38	%f
double	8	1.7E-308 to 1.7E+308	%lf
long double	16	3.4E-4932 to 1.1E+4932	%Lf
char	1	-128 to 127	%c

```c
#include <stdio.h>

int main() {

  printf("Size of Int Data Types in C = %2d bytes \n", sizeof(short int));

  printf("Size of Long Int Data Types in C = %2d bytes \n", sizeof(long int));

  printf("Size of Float Data Types in C = %2d bytes \n", sizeof(float));

  printf("Size of Double Data Types in C = %2d bytes \n", sizeof(double));

  printf("Size of Long Double Data Types in C = %2d bytes \n", sizeof(long double));

  printf("Size of Char Data Types in C = %2d bytes \n", sizeof(char));

  return 0;
}
```

Back to Top ↑

2. Write a program to accept values of two numbers and print their addition, subtraction, multiplication, division.

Addition: x + y;

Subtraction: x - y;

multiplication: x * y;

division: x / y;

```c
#include <stdio.h>

int main(){

    int add, mul, sub, div, num1, num2;

    printf("Enter First Number: \n");
    scanf("%d", &num1);

    printf("Enter Second Number: \n");
    scanf("%d", &num2);

    add = num1 + num2;
    sub = num1 - num2;
    mul = num1 * num2;
    div = num1 / num2;

    printf("Addition: %d \n", add);
    printf("Subtraction: %d \n", sub);
    printf("Multiplicatin: %d \n", mul);
    printf("Division: %d \n", div);

    return 0;
}
```

Back to Top ↑

3. Write a program to accept a number from user and print it’s square & cube in C language

Square: x * x

Cube: x * x * x

```c
#include <stdio.h>

int main(){

    int num, cube, square;

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

    cube = num * num * num;
    square = num * num;

    printf("Square: %d cube: %d \n", square, cube);

    return 0;
}
```

Back to Top ↑

4. Write a program to accept two values a & b and interchange their values in C language

Before Interchange value: a = 12; b = 15

After Interchange value: a = 15; b = 12

```c
#include <stdio.h>

int main(){

    int a, b, temp;

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

    printf("Enter B: ");
    scanf("%d", &b);

    temp = b;
    b = a;
    a = temp;

    printf("Swap A: %d B: %d", a, b);

    return 0;
}
```

Back to Top ↑

5. Write a program to accept roll no & marks of 3 subjects of a student, Calculate total 3 subjects and average in c language

Average: Sanskrit + Hindi + Math / 3

```c
#include <stdio.h>

int main(){

    int roll, sanskrit, hindi, math, average, total;

    printf("Enter Roll No: ");
    scanf("%d", &roll);

    printf("Enter Sanskrit marks: ");
    scanf("%d", &sanskrit);

    printf("Enter Hindi marks: ");
    scanf("%d", &hindi);

    printf("Enter Math marks: ");
```

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

    total = (sanskrit + hindi + math);
    average =  total / 3;

    printf("\n\nStudent Roll No: %d", roll);
    printf("\n\nTotal marks: %d", total);
    printf("\n\nAverage marks: %d", average);

    return 0;
}
```

Back to Top ↑

6. Print following outputs: http:\www.kodegod.com\new in C language

```
#include <stdio.h>

int main(){

    printf("http:\\\\www.kodegod.com\\learn-programming");

    return 0;
}
```

Back to Top ↑

7. Area and Circumference of a Circle

Area of the Circle is: πr * r

Circumstances of the Circle are: 2πr

```
#include <stdio.h>
#define PI 3.14153

int main(){

    float area, circum, radius;

    printf("\nEnter Radius: ");
    scanf("%f", &radius);

    area = radius * radius * PI;
    circum = 2 * PI * radius;

    printf("Area of the circle: %f \n", area);
    printf("Circumference of the circle: %f \n", circum);

    return 0;
}
```

Back to Top ↑

8. Print Ascii Value of the Character

```c
#include <stdio.h>

int main(){
    char a;

    printf("Enter The Character: ");
    scanf("%c", &a);

    printf("Value: %d", a);

    return 0;
}
```

Back to Top ↑

9. Write a program to print area of a triangle

Triangle = 0.5 * Base * Height

```c
#include <stdio.h>

int main(){

    int area, base, height;

    printf("Enter Base: ");
    scanf("%d",&base);

    printf("Enter Height: ");
    scanf("%d", &height);

    area = 0.5 * base * height;

    printf("Area of Triangle : %d", area);

    return 0;
}
```

Back to Top ↑

10. Convert a Person’s Name in Abbreviated

Test Data:

```
Name: Ghanendra Pratap Singh
```

Expected Output:

```
Abbreviated Name: G. P. Singh
```

```c
#include<stdio.h>

int main() {

    char first_name[20], middle_name[20], last_name[20];

    printf("Enter First name, Middle name, Last name: ");
    scanf("%s %s %s", &first_name, &middle_name, &last_name);

    printf("%c. %c. %s", first_name[0], middle_name[0], last_name);
    return 0;

}
```

Back to Top ↑

11. C Program For Calculate Simple Interest

Simple Interest = (Principal Amount * Rate of Interest * Time) / 100;

```c
#include <stdio.h>

int main(){

    int si, amount, intrest, time;

    printf("Enter Principal Amount: ");
    scanf("%d", &amount);

    printf("Enter Rate of Intrest: ");
    scanf("%d", &intrest);

    printf("Enter Time: ");
    scanf("%d", &time);

    si = (amount * intrest * time) / 100;

    printf("Simple intrest: %d", si);

    return 0;
}
```

Back to Top ↑

12. Write a program to accept a name and basic salary of an employee calculate and display the gross salary Program in C.

Gross Salary = Basic_Salary + HRA + Other_Allowance.

```c
#include <stdio.h>

int main(){
```

```
    char name[20];
    int grossSalary, basicSalary, da, hra;

    printf("Enter Employee Name: ");
    scanf(" %s", &name);

    printf("Enter Basic salary: ");
    scanf(" %d", &basicSalary);

    printf("Enter House Rent Allowance: ");
    scanf(" %d", &hra);

    printf("Enter Other Allowance: ");
    scanf(" %d", &da);

    grossSalary = basicSalary + da + hra;

    printf("Name: %s \n", name);
    printf("Gross Salary: %d \n", grossSalary);

    return 0;
}
```

Back to Top ↑

13. Calculate Percentage of 5 Subjects

percentage = ((sanskrit + hindi + math + english + accountancy) / 500) * 100

```
#include <stdio.h>

int main(){

    int sanskrit, math, eng, hin, accounts;
    float percentage;

    printf("Enter Sanskrit Marks:");
    scanf("%d", &sanskrit);
    printf("Enter Hindi Marks:");
    scanf("%d", &hin);
    printf("Enter English Marks:");
    scanf("%d", &eng);
    printf("Enter Math Marks:");
    scanf("%d", &math);
    printf("Enter Accountancy Marks:");
    scanf("%d", &accounts);

    percentage = ((float)(sanskrit + hin + eng + math + accounts) / 500 ) * 100;

    printf("\nYour Overall Percentage: %2f", percentage);

    return 0;
}
```

Back to Top ↑

14. C Program For Converting Temperature Celsius Into Fahrenheit

Fahrenheit = ((9/5) * Celsius) + 32 or you can use `1.8` in place of `9/5`

Celsius = (fahrenheit - 32) * 5 / 9

```c
#include <stdio.h>

int main(){
    float celsius, fahrenheit, calculation;

    printf("\nEnter Celsius: ");
    scanf("%f", &celsius);
    calculation = (1.8 * celsius) + 32;
    printf("\nFahrenheit: %f", calculation);

    printf("\nEnter Fahrenheit: ");
    scanf("%f", &fahrenheit);
    calculation = (fahrenheit - 32) * 5 / 9;
    printf("\nCelsius: %f", calculation);

    return 0;
}
```

Back to Top ↑

15. First Three Powers (n, n * n, n * n * n) Without Using Power Function

Three Powers: (n, n * n, n * n * n)

Test Data:

```
Enter a number = 3
```

Expected Output:

```
3, 9, 27
```

```c
#include <stdio.h>

int main(){

    int num;

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

    printf("First Three Powers %d, %d, %d", num, num * num, num * num * num);

    return 0;
}
```

Back to Top ↑

16. Write a C program input a number to compute the perimeter and area of a rectangle.

Perimeter of the rectangle = 2(height + width);

Area of Rectangle = height * width;

Test Data:

```
height = 7 inches;
width = 5 inches;
```

Expected Output:

```
Perimeter of the rectangle = 24 inches
Area of the rectangle = 35 square inches
```

```c
#include <stdio.h>

int main(){
    int height, width, area, perimeter;

    printf("Enter height and width of the rectangle respectively: ");
    scanf("%d %d", &height, &width);

    area = height * width;
    perimeter = 2 * (height + width);

    printf("Area of a rectangle = %d square inches \nPerimeter of a rectangle = %d inches", area, perimeter);

    return 0;
}
```

Back to Top ↑

17. Write a C program to accept 3 characters and print the sum of their ascii.

Test Data:

```
Enter 3 character: a b c
```

Expected Output:

```
sum = 294
```

```c
#include <stdio.h>

int main(){
    char a, b, c;
    int sum;
```

```
    printf("Enter 3 character: ");
    scanf("%c %c %c", &a, &b, &c);

    sum = (int)a + (int)b + (int)c;

    printf("Sum of the 3 character = %d", sum);

    return 0;
}
```

Back to Top ↑

18. Write a C program to convert specified days into years, weeks and days.

Note: Ignore leap year.

```
#include <stdio.h>

int main(){
    int days, years, weeks;

    printf("Enter number of days: ");
    scanf("%d", &days);

    years = days / 365;
    weeks = (days % 365) / 7;
    days = (days % 365) % 7;

    printf("Years = %d Weeks = %d Days = %d", years, weeks, days);

    return 0;
}
```

Back to Top ↑

19. Write a C program to calculate the distance between the two points

Formula:- $\sqrt{(x_1 - x_2)^2 + (y_1 + y_2)^2}$

Test Data :

```
Input x1: 25
Input y1: 15
Input x2: 35
Input y2: 10
```

Expected Output:

```
Distance between the said points: 11.1803
```

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

```c
int main(){
    float x1, x2, y1, y2, distance;

    printf("Enter x1, y1, x2 and y2 respectively:");
    scanf("%f %f %f %f", &x1, &y1, &x2, &y2);

    distance = sqrt(pow((x1 - x2), 2) + pow((y1 - y2), 2));

    printf("The distance between the two points = Square root(%f)", distance);

    return 0;
}
```

Back to Top ↑

20. Write a C program to read an amount (integer value) and break the amount into smallest possible number of bank notes.

Test Data :

```
Input the amount: 375
```

Expected Output:

```
There are:
3 Note(s) of 100.00
1 Note(s) of 50.00
1 Note(s) of 20.00
0 Note(s) of 10.00
1 Note(s) of 5.00
0 Note(s) of 2.00
0 Note(s) of 1.00
```

```c
#include <stdio.h>

int main(){
    int amount, hundred, fifty, twenty, ten, five, two, one;

    printf("Enter amount: ");
    scanf("%d", &amount);

    hundred = amount / 100;
    fifty = (amount % 100) / 50;
    twenty = ((amount % 100) % 50) / 20;
    amount = ((amount % 100) % 50) % 20;
    ten = amount / 10;
    amount = amount % 10;
    five = amount / 5;
    amount = amount % 5;
    two = amount / 2;
    amount = amount % 2;
    one = amount;
```

```
    printf("\n%d Note(s) of 100.00", hundred);
    printf("\n%d Note(s) of 50.00", fifty);
    printf("\n%d Note(s) of 20.00", twenty);
    printf("\n%d Note(s) of 10.00", ten);
    printf("\n%d Note(s) of 5.00", five);
    printf("\n%d Note(s) of 2.00", two);
    printf("\n%d Note(s) of 1.00", one);

    return 0;
}
```

Back to Top ↑

21. Write a C program to convert a given integer (in seconds) to hours, minutes and seconds.

Test Data :

```
Input seconds: 25300
```

Expected Output:

```
There are:
H:M:S - 7:1:40
```

```c
#include <stdio.h>

int main(){
    int seconds, minutes, hours;

    printf("Enter seconds: ");
    scanf("%d", &seconds);

    hours = seconds / 3600;
    seconds = seconds % 3600;
    minutes = seconds / 60;
    seconds = seconds % 60;

    printf("There are:\nH:M:S - %d:%d:%d", hours, minutes, seconds);

    return 0;
}
```

Back to Top ↑

22. Write a C program to convert a given integer (in millimeters) to kilometers, meters and centimeters.

```
1 centimeter = 10 millimeters.
1 meter = 100 centimeters.
1 meter = 1,000 millimeters.
1 kilometer = 1,000 meters.
```

Test Data :

```
Input no. of days: 2535220
```

Expected Output:

```
2.53 kilometers
2535.22 Meters
253522.0 Centimeters
```

```
#include <stdio.h>

int main(){
    float millimeters, kilometers, meters, centimeters;

    printf("Enter millimeters:");
    scanf("%f", &millimeters);

    centimeters = millimeters / 10;
    meters = centimeters / 100;
    kilometers = meters / 1000;

    printf("Kilometers = %f Meters = %f Centimeters = %f", kilometers, meters,
centimeters);

    return 0;
}
```

Back to Top ↑

23. Write a C program that accepts two item’s weight (floating points' values) and number of purchase (floating points' values) and calculate the average value of the items.

Test Data :

```
Weight - Item1: 15
No. of item1: 5
Weight - Item2: 25
No. of item2: 4
```

Expected Output:

```
Average Value = 19.444444
```

```
#include <stdio.h>

int main(){
    float weight1, weight2, itemNum1, itemNum2, average;

    printf("Weight - Item1: ");
    scanf("%f", &weight1);
```

```
    printf("No. of Item1: ");
    scanf("%f", &itemNum1);

    printf("Weight - Item2: ");
    scanf("%f", &weight2);

    printf("No. of Item1: ");
    scanf("%f", &itemNum2);

    average = (weight1 * itemNum1 + weight2 * itemNum2) / (itemNum1 + itemNum2);

    printf("Average value of the item = %f", average);

    return 0;
}
```

Back to Top ↑

24. Program to show swap of two number

```
i) using three variable

ii) without using third variable.

iii) swap withing a single line.
```

Test Data :

```
Input two number a and b: 5 10
```

Expected Output:

```
a = 10 and b = 5
```

```c
#include <stdio.h>

int main(){
    int a, b, temp;

    printf("Enter two number a and b:");
    scanf("%d %d", &a, &b);

    // swap two number using third variable.
    // temp = a;
    // a = b;
    // b = temp;

    // Swap two number without using third variable.
    // a = a + b;
    // b = a - b;
    // a = a - b;
```

```
    // Swap two number within single line.
    b = a + b - (a = b);

    printf("a = %d and b = %d", a, b);

    return 0;
}
```

Back to Top ↑

25. Write a program to display last digit of a number. Number is entered through keyboard.

Test Data:

```
123
```

Expected Output:

```
Last digit = 3
```

```
#include <stdio.h>

int main(){
    int num;

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

    num = num % 10;

    printf("Last digit = %d", num);

    return 0;
}
```

Back to Top ↑

26. Write a program to calculate sum of the digits of three digit number.

Test Data:

```
123
```

Expected Output:

```
sum = 6
```

```
#include <stdio.h>

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

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

    sum = sum + num % 10;
    num = num / 10;
    sum = sum + num % 10;
    sum = sum + num / 10;

    printf("Sum = %d", sum);

    return 0;
}
```

Back to Top ↑

27. Write a program to print profit and profit percentage. Selling price and cost price is given by user.

formula :-

profit = selling - cost

profitPercentage = profit / cost * 100

```
#include <stdio.h>

int main(){
    int profit, profitPercentage, sellingPrice, costPrice;

    printf("Enter Selling price and Cost price respectively: ");
    scanf("%d %d", &sellingPrice, &costPrice);

    profit = sellingPrice - costPrice;
    profitPercentage = (profit * 100) / costPrice;

    printf("Total Profit = %d and Profit percentage = %d", profit, profitPercentage);

    return 0;
}
```

Back to Top ↑

28. Input a number and change the sign.

Test Data:

```
input number : 10
input number : -15
```

Expected Output:

```
Sign Changed number = -10
Sign Changed number = 15
```

```c
#include <stdio.h>

int main(){
    int num;

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

    num = num * -1;

    printf("Changed number = %d", num);
    return 0;
}
```

Back to Top ↑

29. Input two number and display quotient and remainder.

Test Data:

```
input number : 98 4
```

Expected Output:

```
quotient = 24
remainder = 2
```

```c
#include <stdio.h>

int main(){
    int dividend, divisor, quotient, remainder;

    printf("Enter Dividend and Division: ");
    scanf("%d %d", &dividend, &divisor);

    quotient = dividend / divisor;
    remainder = dividend % divisor;

    printf("Quotient = %d Remainder = %d", quotient, remainder);

    return 0;
}
```

Back to Top ↑

30. Input a 5 digit number and calculate the sum of last and first digit number.

Test Data:

```
number : 12345
```

Expected Output:

```
sum = 6
```

```c
#include <stdio.h>

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

    printf("Enter a 5 digit number: ");
    scanf("%d", &num);

    sum = sum + (num % 10) + (num / 10000);

    printf("Sum = %d", sum);

    return 0;
}
```

Back to Top ↑

31. Input a 3 digit number and reverse it.

Test Data:

```
number = 123
```

Expected Output:

```
reverse number = 321
```

```c
#include <stdio.h>

int main(){
    int num, rev, rem;

    printf("Enter a 3 digit number: ");
    scanf("%d", &num);

    rem = num % 10;
    num = num / 10;
    rev = rev * 10 + rem;
    rem = num % 10;
    num = num / 10;
    rev = rev * 10 + rem;
    rem = num % 10;
    num = num / 10;
    rev = rev * 10 + rem;

    printf("Reverse number = %d\n", rev);

    return 0;
}
```

Back to Top ↑