example

2022-05-01

1. Calculates hours and mins from given numbers of input

```
#include <stdio.h>
/*
    Calculates hours and mins from given numbers of input
*/
int main()
{
    int mins, hours, remainingMins;
    printf("Enter Number of Minutes: ");
    scanf("%d", &mins);
    hours = mins / 60;
    remainingMins = mins % 60;
    printf("Hours: %d\nMins: %d\n", hours, remainingMins);
    return 0;
}
```

2. simple program to convert centigrade to fahrenheit

```
#include <stdio.h>
/*
    simple program to convert centigrade to fahrenheit
    relation between C and F,
    f = (9c/5)+32
*/
int main()
{
    float c, f;
    printf("Enter Temperature In Centigrade: ");
    scanf("%f", &c);
    f = (9 * c / 5) + 32;
    printf("%.2f°C is equivalent to %.2f°F\n", c, f);
    return 0;
}
```

3. This programs calculates simple interest

```
#include <stdio.h>
/*
    This programs calculates simple interest
    formula,
        I = (P x T x R ) / 100
*/
int main()
{
    float p, t, r, i;
    printf("Enter Principal,Time and Rate separated by comma: ");
    scanf("%f,%f,%f", &p, &t, &r);
    i = (p * t * r) / 100;
    printf("Interest Accured: %.2f\n", i);
    return 0;
```

```
}
```

4. Determine quadrant from the given coordinates

```
#include <stdio.h>
/*
    Determine quadrant from the given coordinates
    rules
        first quadrant: (+,+)
        second quadrant: (-,+)
        third quadrant: (-,-)
        fourth quadrant: (+,-)
*/
int main()
{
    int x, y;
    printf("Enter coordinate in (x,y) format: ");
    scanf("(%d,%d)", &x, &y);
    if (x == 0 && y == 0)
    {
        printf("(%d,%d) lies in the origin\n", x, y);
    }
    else if (x == 0 || y == 0)
    {
        printf("(%d,%d) doesn't lie in any quadrant\n", x, y);
    }
    else if (x >= 1)
    {
        if (y >= 1)
        {
            printf("(%d,%d) lies in first quadrant\n", x, y);
        }
        else
        {
            printf("(%d,%d) lies in fourth quadrant\n", x, y);
        }
    }
    else
    {
        if (y >= 1)
        {
            printf("(%d,%d) lies in second quadrant\n", x, y);
        }
        else
        {
            printf("(%d,%d) lies in third quadrant\n", x, y);
        }
    }
    return 0;
}
```

5. Program to print size of data type

```
#include <stdio.h>
/*
    Program to print size of data type
*/
```

```
int main()
{
    int choice, size;
    printf("Choose from 1-5\n\
    \r1. int\n\
    \r2. char\n\
    \r3. float\n\
    \r4. double\n\
    \r5. long double\n\
    \r6. long long\n\
    \r# ");
    scanf("%2d", &choice);
    switch (choice)
    {
    case 1:
        printf("size of data type 'int' is %d bytes \n", sizeof(int));
        break;
    case 2:
        printf("size of data type 'char' is %d bytes \n", sizeof(char));
        break;
    case 3:
        printf("size of data type 'float' is %d bytes \n", sizeof(float));
        break;
    case 4:
        printf("size of data type 'double' is %d bytes \n", sizeof(double));
        break;
    case 5:
        printf("size of data type 'long double' is %d bytes \n", sizeof(long double));
        break;
    case 6:
        printf("size of data type 'long long' is %d bytes \n", sizeof(long long));
        break;
    default:
        printf("Invalid Input\n");
    }
    return 0;
}
```

6. Program to find power of x i.e x^n using for loop

```
#include <stdio.h>
/*
    Program to find power of x i.e x^n using for loop
*/
int main()
{
    float x, product = 1;
    int n;
    printf("Enter number and it's power separated by ^: ");
    scanf("%f^%d", &x, &n);
    for (int _ = 0; _ < n; _++) // throwable variable
    {
        product *= x;
    }
    printf("%.2f^%d = %.2f\n", x, n, product);
    return 0;
}
```

7. Program to calculate total seconds for hrs and mins as input

```
#include <stdio.h>
/*
    Program to calculate total seconds for hrs and mins as input
*/
int main()
{
    int hours, mins, secs;
    printf("Enter Hrs and Mins: ");
    scanf("%d %d", &hours, &mins);
    secs = (hours * 60 * 60) + (mins * 60);
    printf("Total Seconds: %d\n", secs);
    return 0;
}
```

8. Simple Program To Check Whether Given Program Is Vowel

```
#include <stdio.h>
/*
    Simple Program To Check Whether Given Program Is Vowel
*/
int isVowel(char c)
{
    char VOWELS[] = {'a', 'e', 'i', 'o', 'u', 'A', 'E', 'I', 'O', 'U'};
    for (int i = 0; i < sizeof(VOWELS); i++)
    {
        if (c == VOWELS[i])
        {
            return 1;
        }
    }
    return 0;
}
int main()
{
    char c;
    printf("Enter a character: ");
    scanf("%c", &c);
    if (isVowel(c))
    {
        printf("'%c' is vowel\n", c);
    }
    else
    {
        printf("'%c' is not vowel\n", c);
    }
    return 0;
}
```

9. Program to calculate sum and average from the 10 integer user input

```
#include <stdio.h>
/*
    Program to calculate sum and average from the 10 integer user input
*/
```

```
int main()
{
    float a, sum = 0, average;
    for (int i = 1; i < 11; i++)
    {
        printf("Enter Number (%d/10): ", i);
        scanf("%f", &a);
        sum += a;
    }
    printf("Sum: %.2f\nAverage: %.2f\n", sum, (sum / 10));
    return 0;
}
```

10. Program determine whether the given triangle is equilateral,isosceles,scalene

```
#include <stdio.h>
/*
    Program determine whether the given triangle is equilateral,isosceles,scalene
*/
int main()
{
    // declare sides of triangle
    float a, b, c;
    printf("Enter sides of triangle separated by comma: ");
    scanf("%f,%f,%f", &a, &b, &c);
    if (a == b && b == c)
    {
        printf("It is an equilateral triangle\n");
    }
    else if ((a == b) || (b == c) || (c == a))
    {
        printf("It is an isosceles triangle\n");
    }
    else
    {
        printf("It is scalene triangle\n");
    }
    return 0;
}
```

11. Program to calculate sum of N given odd natural number

```
#include <stdio.h>
/*
    Program to calculate sum of N given odd natural number
    formula = n^2
*/
int main()
{
    int n;
    float sum;
    printf("Enter number the nth term: ");
    scanf("%d", &n);
    sum = n * n;
    printf("Sum of first %d odd number is %.2f\n", n, sum);
    return 0;
}
```

12. Program to check whether the given character is alphabet, digit or special character

```
#include <stdio.h>
/*
    Program to check whether the given character is alphabet, digit or special character
*/
int main()
{
    char c;
    printf("Enter a character: ");
    scanf("%c", &c);
    if ((c >= 'a' && c <= 'z') || (c >= 'A' && c <= 'Z'))
    {
        printf("'%c' is an alphabet\n", c);
    }
    else if (c >= '0' && c <= '9')
    {
        printf("'%c' is digit\n", c);
    }
    else if ((c >= 32 && c <= 47) || (c >= 58 && c <= 64) || (c >= 123 && c <= 126))
    {
        printf("'%c' falls under special characters\n", c);
    }
    return 0;
}
```

13. This program just checks whether two given integers are equal or not

```
#include <stdio.h>
/*
    This program just checks whether two given integers are equal or not
*/
int main()
{
    int a, b;
    printf("Enter Two Integers Separated by space: ");
    scanf("%d %d", &a, &b);
    if (a == b)
        printf("%d equals %d\n", a, b);
    else
        printf("%d doesn't equal %d\n", a, b);
    return 0;
}
```

14. Checks if the given year is leap

```
#include <stdio.h>
/*
    Checks if the given year is leap
*/
int leapYear(int year)
{
    if (year % 4 == 0)
    {
        if (year % 100 == 0)
```

```
        {
            if (year % 400 == 0)
            {
                return 1;
            }
        }
        else
            return 1;
    }
    return 0;
}
int main()
{
    int year;
    printf("Enter Year: ");
    scanf("%4d", &year);
    if (leapYear(year))
        printf("%4d is leap year\n", year);
    else
        printf("%4d is not leap year\n", year);
    return 0;
}
```

15. Finds the largest numbers from given three

```
#include <stdio.h>
/*
    Finds the largest numbers from given three
*/
int main()
{
    float a, b, c;
    printf("Enter three numbers separated by comma: ");
    scanf("%f,%f,%f", &a, &b, &c);
    if ((a >= b) && (a >= c))
    {
        printf("%.2f is the largest number\n", a);
    }
    else if ((b >= a) && (b >= c))
    {
        printf("%.2f is the largest number\n", b);
    }
    else
        printf("%.2f is the largest number\n", c);

    return 0;
}
```

16. Program to find factorial

```
#include <stdio.h>
/*
    Program to find factorial
    example:
        5! = 5*4*3*2*1 = 120
*/
int factorial(int n)
```

```
{
    if (n == 0)
        return 1;
    return n * factorial(n - 1);
}
int main()
{
    int n;
    printf("Enter number to compute it's factorial: ");
    scanf("%d", &n);
    printf("%d! is %d\n", n, factorial(n));
    return 0;
}
```

17. This program merely calculates the sum of N numbers

```
#include <stdio.h>
/*
    This program merely calculates the sum of N numbers
    formula = n(n+1)/2
*/
int main()
{
    int n;
    float sum;
    printf("Enter number to calculate it's sum: ");
    scanf("%d", &n);
    sum = (n * (n + 1)) / 2;
    printf("Sum of first %d number is %.2f\n", n, sum);
    return 0;
}
```

18. Program to calculate area of triangle when three sides are given

```
#include <stdio.h>
#include <math.h>
/*
    Program to calculate area of triangle when three sides are given
    forumla = (s(s-a)(s-b)(s-c))^1/2; where s = semi perimeter;
*/
int main()
{
    float a, b, c, s, area;
    printf("Enter sides of triangle separated by space: ");
    scanf("%f %f %f", &a, &b, &c);
    s = (a + b + c) / 2;
    area = pow(s * (s - a) * (s - b) * (s - c),0.5);
    printf("Area of triangle is %.2f\n", area);
    return 0;
}
```

19. This Program calculates the fibonacci series upto nth given terms

```
#include <stdio.h>
/*
    This Program calculates the fibonacci series upto nth given terms
```

```
    formula
    fn = fn-1+fn-2
*/
int fibonacci(int n)
{
    if (n == 0)
    {
        return 0;
    }
    else if (n == 1)
    {
        return 1;
    }
    return fibonacci(n - 1) + fibonacci(n - 2);
}
int main()
{
    int n;
    printf("Enter Nth term for fibonacci series: ");
    scanf("%d", &n);
    for (int i = 0; i < n; i++)
    {
        printf("%d\n", fibonacci(i));
    }
    return 0;
}
```

20. Display multiplication table of given integer

```
#include <stdio.h>
/*
    Display multiplication table of given integer
*/
int main()
{
    int num;
    printf("Enter number to display it's multiplication table: ");
    scanf("%d", &num);
    printf("\e[1;1H\e[2J"); // clear screen on linux using ansi escapse codes
    printf("Table of %d\n", num);
    for (int i = 1; i < 11; i++)
    {
        printf("%d X %d = %d\n", num, i, (num * i));
    }
}
```

21. Program to calculate the perimeter of rectangle

```
#include <stdio.h>
/*
    Program to calculate the perimeter of rectangle
    formula: 2(l+w)
*/
int main()
{
    float l, w, p;
```

```
    printf("Enter Length And Width Of Rectange In Meter: ");
    scanf("%f %f", &l, &w);
    p = 2 * (l + w);
    printf("Perimeter of rectange is %.2f\n", p);
    return 0;
}
```

22. Finds whether person of given age is eligible to vote in an upcoming election or not

```
#include <stdio.h>
/*
    Finds whether person of given age is eligible to vote in an upcoming election or not
*/
int main()
{
    int age;
    printf("How young are you?: ");
    scanf("%d", &age);
    if (age >= 18)
    {
        printf("You're eligible to vote.\n");
    }
    else
    {
        printf("You're still minor.\n");
    }
    return 0;
}
```