

Hello World

```
# include <stdio.h>
int main() {
    printf ("Hello World");
    return 0;
}
```

Output

Hello World

Addition

```
#include <stdio.h>
int main() {
    int a, b, c;
    printf("Enter a:");
    scanf("%d", &a);
    printf("Enter b:");
    scanf("%d", &b);
    c = a + b;
    printf("Sum of a and b = %d", c);
    return 0;
}
```

Output

Enter a:

Enter b:

Sum of a and b =

Arithmetic Operator

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

```
int main()
```

```
int a, b, c, d, e, f, g;
```

```
Printf ("Enter a:");
```

```
Scanf ("%d", &a);
```

```
Printf ("Enter b:");
```

```
Scanf ("%d", &b);
```

```
c = a + b
```

```
Printf ("Sum=%d\n", c);
```

```
d = a - b
```

```
Printf ("Difference = %d\n", d);
```

```
e = a * b;
```

```
Printf ("Multiplication = %d\n", e);
```

```
f = a / b;
```

```
Printf ("Division = %d\n", f);
```

```
g = a % b;
```

```
Printf ("Remainder = %d\n", g);
```

```
return;
```

y

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Output

Enter a:

Enter b:

Sum =

Difference =

Multiplication =

Division =

Remainder =

Relational Operators

```
#include <stdio.h>
int main() {
    int a, b, c, d, e;
    printf("Enter a:");
    scanf("%d", &a);
    printf("Enter b:");
    scanf("%d", &b);
    printf("a > b %d\n", a > b);
    printf("a < b %d\n", a < b);
    printf("a >= b %d\n", a >= b);
    printf("a <= b %d\n", a <= b);
    printf("a == b %d\n", a == b);
    printf("a != b %d\n", a != b);
    return 0;
}
```

y

Output

Enter a:

Enter b:

a > b

a < b

a >= b

a <= b

a == b

a != b

Logical Operator

```
#include <stdio.h>
int main ()
{
    int a, b, c, d, e;
    printf ("Enter a=");
    scanf ("%d", &a);
    printf ("Enter b=");
    scanf ("%d", &b);
    printf ("a>0 && b>0=%d\n", (a>0&&b>0));
    printf ("a>0 || b<0=%d\n", (a>0 || b<0));
    printf ("!(a>b)=%d\n", !(a>b));
    printf ("(a||b)&& !(a||b)=%d\n", (a||b)&& !(a||b));
    return 0;
}
```

Output

Enter a=

Enter b=

a>0 && b>0=

a>0 || b<0=

!(a>b)=

(a||b)&& !(a||b)=

Bitwise Operators

```
#include <stdio.h>
int main() {
    int a, b, c, d, e;
    printf("enter a:");
    scanf("%d", &a);
    printf("enter b:");
    scanf("%d", &b);
    c = a & b;
    printf("a&b = %d\n", c);
    d = a | b;
    printf("a|b = %d\n", d);
    e = a ^ b;
    printf("a^b = %d\n", e);
    return 0;
}
```

Output

enter a:

enter b:

a & b =

a | b =

a ^ b =

Ternary Operator

```
#include <stdio.h>
int main () {
    int a,b;
    printf ("Enter a:");
    scanf ("%d", &a);
    printf ("Enter b:");
    scanf ("%d", &b);
    (a>b)? printf ("a is greater"):
        printf ("b is greater");
    return 0;
}
```

Output

Enter a:

Enter b:

If $a > b$ then it will print

a is greater

Increment & Decrement Operator

```
#include <stdio.h>
int main ()
{
    int a;
    printf ("Enter a=");
    scanf ("%d\n", &a);
    printf ("++a = %d\n", ++a);
    printf ("a++ = %d\n", a++);
    printf ("--a = %d\n", --a);
    printf ("a-- = %d\n", a--);
    return 0;
}
```

Output

Enter a=

$++a =$

$a++ =$

$--a =$

$a-- =$

WAP to check Δ is valid or not. If valid, do check if the Δ is isosceles, equilateral, right angled or scalene.

```
# include <stdio.h>
int main()
{
    int a, b, c;
    printf("Enter first side = ");
    scanf("%d", &a);
    printf("Enter second side = ");
    scanf("%d", &b);
    printf("Enter third side = ");
    scanf("%d", &c);
    if ((a+b)>c || (b+c)>a || (c+a)>b) {
        printf("Triangle is valid\n");
        if ("a==b || b==c || c==a") {
            printf("Triangle is isosceles\n");
        }
        if (a==b && b==c) {
            printf("Triangle is equilateral\n");
        }
        if ((a*a) == ((b*b)+(c*c)) || (b*b) == ((a*a)+(c*c)) || (c*c) == ((a*a)+(b*b))) {
            printf("Triangle is right angle\n");
        }
        else {
            printf("Triangle is not valid");
        }
    }
    return 0;
}
```

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Output

Enter first side = 8

Enter second side = 3

Enter third side = 3

(eg in \triangle $a+b > c$)

Triangle is valid

(eg $b=c$)

Triangle is isosceles

WAP to compute the BMI Index of the person
print the BMI values as per the following ranges.

```
# include < stdio.h >
int main()
{
    float a, b, c;
    printf ("Enter weight (in kg's) = ");
    scanf ("%f", &a);
    printf ("Enter Height (in metres) = ");
    scanf ("%f", &b);
    if (a>0 && b>0)
        c = (a) / ((b*b));
    printf ("\n\nBMI is: \n", c);
    if (c<=15)
        printf ("starvation");
    else if (c>15 && c<=17.5)
        printf ("anorexic");
    else if (c>17.5 && c<=18.5)
        printf ("underweight");
    else if (c>18.5 && c<=24.9)
        printf ("ideal");
    else if (c>24.9 && c<=25.9)
        printf ("overweight");
    else if (c>25.9 && c<=39.9)
        printf ("obese");
    else if (c>39.9)
        printf ("morbidity obese");
    else
        printf ("Enter valid height/ weight");
    return 0;
}
```

Output:

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Enter weight (in kg's) = 42.8 kg.

Enter height (in metres) = 1.75 m

BMI is: 14

(eg BMI is 14)

Starvation

/// Input length & breadth of three rectangles & find the greatest perimeter among them.

```
#include <stdio.h>
int main()
{
    int l1, l2, l3, b1, b2, b3, p1, p2, p3;
    int pmax;
    printf("Enter l1, l2, l3");
    scanf("%d %d %d", &l1, &l2, &l3);
    printf("Enter b1, b2, b3");
    scanf("%d %d %d", &b1, &b2, &b3);
    p1 = 2 * (l1 + b1);
    p2 = 2 * (l2 + b2);
    p3 = 2 * (l3 + b3);
    pmax = (p1 > p2) ?
        ((p1 > p3) ? p1 : p3) :
        ((p2 > p3) ? p2 : p3);
    printf("Perimeter of Rectangle 1: %d\n", p1);
    printf("Perimeter of Rectangle 2: %d\n", p2);
    printf("Perimeter of Rectangle 3: %d\n", p3);
    printf("The highest perimeter is: %d\n", pmax);
    return 0;
}
```

Output:

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Enter l_1, l_2, l_3

Enter b_1, b_2, b_3

Perimeter of Rectangle 1:

Perimeter of Rectangle 2:

Perimeter of Rectangle 3:

The highest perimeter is:

//WAP to check if three pts $(x_1, y_1), (x_2, y_2)$ & (x_3, y_3) are collinear or not

```
# include <stdio.h>
int main () {
    unsigned int x1, x2, x3, y1, y2, y3, area;
    printf ("Enter x1, y1:");
    scanf ("%d %d", &x1, &y1);
    printf ("Enter x2, y2:");
    scanf ("%d %d", &x2, &y2);
    printf ("Enter x3, y3:");
    scanf ("%d %d", &x3, &y3);
    area = 0.5 * (x1*(y2-y3) + x2*(y3-y1) + x3*(y1-y2));
    if (area == 0) {
        printf ("Points are collinear");
    } else {
        printf ("Points are non-collinear");
    }
    return 0;
```

}

Output

Enter x1, y1: (1, 1)
Enter x2, y2: (5, 2)
Enter x3, y3: (9, 5)
(eg if area = 0)

Points are collinear