

C LIBRARY FUNCTION - ATAN2

http://www.tutorialspoint.com/c_standard_library/c_function_atan2.htm

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Description

The C library function **double atan2***doublyy, doublex* returns the arc tangent in radians of **y/x** based on the signs of both values to determine the correct quadrant.

Declaration

Following is the declaration for atan2 function.

```
double atan2(doubly y, double x)
```

Parameters

- **x** – This is the floating point value representing an x-coordinate.
- **y** – This is the floating point value representing a y-coordinate.

Return Value

This function returns the principal arc tangent of y/x, in the interval [-pi,+pi] radians.

Example

The following example shows the usage of atan2 function.

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

#define PI 3.14159265

int main ()
{
    double x, y, ret, val;

    x = -7.0;
    y = 7.0;
    val = 180.0 / PI;

    ret = atan2 (y,x) * val;
    printf("The arc tangent of x = %lf, y = %lf ", x, y);
    printf("is %lf degrees\n", ret);

    return(0);
}
```

Let us compile and run the above program that will produce the following result –

```
The arc tangent of x = -7.000000 y = 7.000000 is 135.000000 degrees
```

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