

convert double to int

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What is the best way to convert a `double` to an `int` ?
Should a cast be used?

129

c#

.net

casting

type-conversion



10

edited Mar 11 '16 at 22:48



Levent Divilioglu

6,729 3 34 86

asked Nov 15 '10 at 6:27



user496949

32.8k 124 278 397

- 7 define "best". depends if you want up/down rounding, etc. – [RPM1984](#) Nov 15 '10 at 6:30
- 7 @RPM1984: Define etc. :) – [Armen Tsirunyan](#) Nov 15 '10 at 6:37
- 17 @Armen - touche` :) Doesn't really matter anyway - Skeet is here, nothing else matters. – [RPM1984](#) Nov 15 '10 at 6:42

10 Answers



You can use a cast if you want the default truncate-towards-zero behaviour. Alternatively, you might want to
USE `Math.Ceiling` , `Math.Round` , `Math.Floor` etc - although

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Don't forget that the range of `int` is much smaller than the range of `double`. A cast from `double` to `int` won't throw an exception if the value is outside the range of `int` in an unchecked context, whereas a call to `Convert.ToInt32(double)` will. The result of the cast (in an unchecked context) is explicitly undefined if the value is outside the range.

answered Nov 15 '10 at 6:30



[Jon Skeet](#)

1107k 704 8051
8510

24 @user: The size of an `int` is always 32 bits, regardless of whether you're using a 32 or 64 bit machine. – [Joren](#) Nov 15 '10 at 10:15

2 And doubles can be much huger than even a 64 bit int. – [Adrian Ratnapala](#) May 1 '13 at 8:07

6 For C# noobs like me: both `Math` and `Convert` are part of `System`. So the complete answer looks like this: `intVal = System.Convert.ToInt32(System.Math.Floor(dblVal));` – [kris](#) May 1 '16 at 8:07

8 @user1290746: That would work, but you'd usually just have using `System;` at the top of the file, at which point it could just be `intVal = Convert.ToInt32(Math.Floor(dblVal));` – [Jon Skeet](#) May 1 '16 at 8:08

2 @user1290746: But in that case, I don't think the right solution is to advise people to use the fully-qualified names - the better solution is to learn about using directives. – [Jon Skeet](#) May 1 '16 at 8:15



if you use cast, that is, `(int)SomeDouble` you will truncate the fractional part. That is, if `SomeDouble` were 4.9999 the result would be 4 not 5. Converting to int doesn't round

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answered Nov 15 '10 at 6:30

[Armen Tsurunyan](#)

94.4k 44 280 392



Yeah, why not?

29

```
double someDouble = 12323.2;  
int someInt = (int)someDouble;
```

Using the `Convert` class works well too.

```
int someOtherInt = Convert.ToInt32(someDouble);
```

answered Nov 15 '10 at 6:29

[Jeff Mercado](#)

94.5k 20 191 217

`Convert.ToInt32` is the best way to convert

7

answered Nov 15 '10 at 6:30

[anishMarokey](#)

10.1k 2 27 43



This a typically unsafe function because it accepts just anything. – [Ant_222](#) Jul 5 '16 at 14:48



The best way is to simply use `Convert.ToInt32` . It is fast and also rounds correctly.

edited Mar 10 '15 at 18:11



Jeff Bridgman

5,181 13 43 109

answered May 30 '13 at 1:59



majed

55 4

Here is a complete example

2

```
class Example
{
    public static void Main()
    {
        double x, y;
        int i;

        x = 10.0;
        y = 3.0;

        // cast double to int, fractional component lost (Line
        i = (int) (x / y);
        Console.WriteLine("Integer outcome of x / y: " + i);
    }
}
```

If you want to round the number to the closer integer do the following:

```
i = (int) Math.Round(x / y); // Line replaced
```

edited Nov 15 '10 at 7:38



Cheng Chen

31.1k 15 88 143

answered Nov 15 '10 at 7:26



majed

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▲ I think the best way is `Convert.ToInt32` .

2

edited Aug 18 '12 at 23:39



[Christoffer Lette](#)

10.5k 6 40 50

answered Nov 15 '10 at 7:24



[Singleton](#)

3,338 3 20 36

▲ `int myInt = (int)Math.Ceiling(myDouble);`

1

answered Apr 19 '17 at 23:21



[mathewsun](#)

163 2 13

▲ My ways are :

0

- `Convert.ToInt32(double_value)`
- `(int)double_value`
- `Int32.Parse(double_value.ToString());`

answered Nov 15 '10 at 6:37



[kst](#)

1,013 3 15 33

11 Don't you think the third way is unnecessarily complex and slow? – [Armen Tsirunyan](#) Nov 15 '10 at 6:38

6 The third will not work with doubles with fractional parts. e.g.,

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```
label18.Text = "" + years.ToString("00") + " years";
```

0



when you want to send it to a label, or something, and you don't want any fractional component, this is the best way

```
label18.Text = "" + years.ToString("00.00") + " years";
```

if you want with only 2, and it's always like that

answered Jul 14 '14 at 18:59



Ruth

17 1