

# Demo of admonition styles in DocOnce

H. P. Langtangen

Nov 20, 2020

## Abstract

This note demonstrates how admonitions look like in the output format `pdflatex`.

## 1 The four main types of admonitions

Key options when compiling this document were

```
--latex_admon=graybox2
```

Here is the warning admon:

### Division by zero is illegal!

Most math systems will give fatal errors if you divide by zero.

```
Terminal> python -c 'print 4/0'
Traceback (most recent call last):
  File "<string>", line 1, in <module>
ZeroDivisionError: integer division or modulo by zero
```

You should therefore be very careful with all expressions that may result in division by zero. In Python, you can use a `try-except` clause to test if some expression gives a `ZeroDivisionError` exception and take appropriate actions. One example of a numerical method where division by zero can cause problems is Newton's methods of finding solutions to algebraic equations  $f(x) = 0$ . In that algorithm, there is a division by  $f'(x)$ .

Question admon (without title).

**Question.**

What are the admon options for `doconce format html`?

Summary admon:

---

The most popular methods for solving algebraic equations

$$f(x) = 0$$

are

- Newton's method
- The Bisection method
- The Secant method
- The Fixed-Point method ( $f(x) = x - g(x)$ )

Of these, Newton's method is fastest, the Bisection method is the most reliable, the Secant method is a simplified Newton method, and the Fixed-Point method is obviously very problem dependent in its behavior since the user has to define the  $g$  function.

---

The `graybox2` style has a special summary box that is embedded in the text (aimed at proposals or popular articles to summarize main points; the summary box is small 50% if A4 format, otherwise it is 80% of the width).

Here is a *notice admon*:

**Tip: follow well-established conventions for variable names!**

For example, in Python, variable and function names use lower case letters separated by underscore, as in `vibration_with_damping` (while Java typically would have `vibrationWithDamping`). Class names apply cap words, as in `ProblemClass`.

The four main admons are warning, notice, question, and summary, but you may introduce other boxes by utilizing the title, as explained below.

**The title of the box is fully customizable.**

This means that if you want different types of boxes, e.g. a *detour* box and a *tip* box, you can just open introduce the convention that *detour* applies the summary box and starts with 'Detour:' in the title, while the notice box is used for tip boxes and as a title starting with 'Tip:'.

## 2 The block, quote and plain box environment

DocOnce features a `block` environment with or without title.

Blocks are often used in slides to frame a collection of things.

### **Block with title.**

Blocks can contain text, math, code, figures, movies.

Here is a quote environment (`quote`):

Sayre's law states that "in any dispute the intensity of feeling is inversely proportional to the value of the issues at stake."

By way of corollary, it adds:

"That is why academic politics are so bitter."

Source: [wikipedia](#)

Boxes are very simple frames (without any icons, background color, or stash, except for a shadow) used for important results like

The world most famous equation:

$$E = mc^2$$