

# Software

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# Chapter 1

## Markdown

### 1.1 Learn X in Y Minutes/Markdown

“Get the code: [markdown.md](#). Markdown was created by JOHN GRUBER in 2004. It’s meant to be an easy to read & write syntax which converts easily to HTML (& now many other formats as well). Markdown also varies in implementation from 1 parser to a next. This guide will attempt to clarify when features are universal or when they are specific to a certain parser.”

#### 1.1.1 HTML Elements

“Markdown is a superset of HTML, so any HTML file is valid Markdown.

```
<!--This means we can use HTML elements in Markdown, such as the comment element, & they won't be
affected by a markdown parser. However, if you create an HTML element in your markdown file, you cannot
use markdown syntax within that element's contents.-->''
```

#### 1.1.2 Headings

“You can create HTML elements <h1> through <h6> easily by pretending the text you want to be in that element by a number of hashes (#).

```
# This is an <h1>
## This is an <h2>
### This is an <h3>
#### This is an <h4>
##### This is an <h5>
##### This is an <h6>
```

Markdown also provides us with 2 alternative ways of indicating h1 & h2.

```
This is an h1
=====
```

```
This is an h2
-----''
```

#### 1.1.3 Simple Text Styles

“Text can be easily styled as italic or bold using markdown.

```
*This text is in italics.*
_And so is this text._
```

```
**This text is in bold.**
__And so is this text.__
```

```
***This text is in both.***
**_As is this!_**
*__And this!__*
```

In GitHub Flavored Markdown, which is used to render markdown files on GitHub, we also have strikethrough:

```
~~This text is rendered with strikethrough.~~
```

### 1.1.4 Paragraphs

“Paragraphs are a one or multiple adjacent lines of text separated by one or multiple blank lines.

This is a paragraph. I’m typing in a paragraph isn’t this fun?

Now I’m in paragraph 2.

I’m still in paragraph 2 too!

I’m in paragraph three!

Should you ever want to insert an HTML `<br />` tag, you can end a paragraph with 2 or more spaces & then begin a new paragraph.

I end with two spaces (highlight me to see them).

There’s a `<br />` above me!

Block quotes are easy & done with the `>` character.

```
> This is a block quote. You can either
> manually wrap your lines \& put a ‘>’ before every line or you can let your lines get really long & wrap on
> their own.
> It doesn’t make a difference so long as they start with a ‘>’.
```

```
> You can also use more than one level
>> of indentation?
> How neat is that?’’
```

### 1.1.5 Lists

“Unordered lists can be made using asterisks, pluses, or hyphens.

```
* Item
* Item
* Another item
```

or

```
+ Item
+ Item
+ One more item
```

or

```
- Item
- Item
- One last item
```

Ordered lists are done with a number followed by a period.

```
1. Item 1
2. Item 2
3. Item 3
```

You don’t even have to label the items correctly & Markdown will still render the numbers in order, but this may not be a good idea.

1. Item 1
1. Item 2
1. Item 3

(This renders the same as the above example)

You can also use sublists

1. Item one
2. Item two
3. Item three
  - \* Sub-item
  - \* Sub-item
4. Item four

There are even task lists. This creates HTML checkboxes.

Boxes below without the 'x' are unchecked HTML checkboxes.

- [ ] 1st task to complete.
- [ ] 2nd task that needs done

This checkbox below will be a checked HTML checkbox.

- [x] This task has been completed''

### 1.1.6 Code Blocks

“You can indicate a code block (which uses the `<code>` element) by indenting a line with 4 spaces or a tab.

```
This is code
So is this
```

You can also re-tab (or add an additional 4 spaces) for indentation inside your code

```
my_array.each do |item|
  puts item
end
```

Inline code can be created using the backtick character ‘

John didn’t even know what the ‘go\_to()’ function did!

In GitHub Flavored Markdown, you can use a special syntax for code

```
```ruby
def foobar
  puts "Hello world!"
end
```
```

The above text doesn’t require indenting, plus GitHub will use syntax highlighting of the language you specify after the ‘‘‘.’’

### 1.1.7 Horizontal Rule

“Horizontal rules (`<hr/>`) are easily added with 3 or more asterisks or hyphens, with or without spaces.

```
***
---
- - -
*****’ ’
```

### 1.1.8 Links

“1 of the best things about markdown is how easy it is to make links. Put the text to display in hard brackets [] followed by the URL in parentheses ()

```
[Click me!](http://test.com/)
```

You can also add a link title using quotes inside the parentheses.

```
[Click me!](http://test.com/ "Link to Test.com")
```

Relative paths work too.

```
[Go to music](/music/).
```

Markdown also supports reference style links.

```
[Click this link][link1] for more info about it!
[Also check out this link][foobar] if you want to.
```

```
[link1]: http://test.com/ "Cool!"
[foobar]: http://foobar.biz/ "Alright!"
```

The title can also be in single quotes or in parentheses, or omitted entirely. The references can be anywhere in your document & the reference IDs can be anything so long as they are unique.

There is also “implicit naming” which lets you use the link text as the id.

```
[This] [] is a link.
```

```
[this]: http://thisisalink.com/
```

But it’s not that commonly used.”

### Table of contents

“Some Markdown flavors even make use of the combination of lists, links & headings in order to create table of contents. In this case, heading titles in lowercase are prepended with hash (#) & are used as link ids. Should the heading have multiple words, they will be connected with a hyphen (-), that also replaces some special characters. (Some other special characters are omitted though.)

- [Heading] (#heading)
- [Another heading] (#another-heading)
- [Chapter] (#chapter)
  - [Subchapter <h3 />] (#subchapter-h3-)

Nonetheless, this is a feature that might not be working in all Markdown implementations the same way.”

### 1.1.9 Images

“Images are done the same way as links but with an exclamation point in front!

```
![This is the alt-attribute for my image](http://imgur.com/myimage.jpg "An optional title")
```

And reference style works as expected.

```
![This is the alt-attribute.][myimage]
```

```
[myimage]: relative/urls/cool/image.jpg "if you need a title, it's here"''
```

### 1.1.10 Miscellany

#### Auto-links

```
<http://testwebsite.com/> is equivalent to
[http://testwebsite.com/] (http://testwebsite.com/)
```

## Auto-links for emails

<foo@bar.com>

## Escaping characters

I want to type *\*this text surrounded by asterisks\** but I don't want it to be in italics, so I do this: \\*this text surrounded by asterisks\\*.

## Keyboard keys

“In GitHub Flavored Markdown, you can use a `<kbd>` tag to represent keyboard keys.

Your computer crashed? Try sending a  
`<kbd>Ctrl</kbd>+<kbd>Alt</kbd>+<kbd>Del</kbd>`”

## Tables

“Tables are only available in GitHub Flavored Markdown & are slightly cumbersome, but if you really want it:

|              |          |               |  |
|--------------|----------|---------------|--|
| Col1         | Col2     | Col3          |  |
| :-----       | :-----:  | -----:        |  |
| Left-aligned | Centered | Right-aligned |  |
| blah         | blah     | blah          |  |

or, for the same results

|                     |         |      |
|---------------------|---------|------|
| Col 1               | Col2    | Col3 |
| :--                 | :-:     | --:  |
| Ugh this is so ugly | make it | stop |

### 1.1.11 Markdownlint

“In order to simplify work with Markdown & to unify its coding style, Markdownlint has been created. This tool is available also as a plugin for some IDEs & can be used as an utility to ensure validity & readability of Markdown.”

### 1.1.12 Further Reading

“For more info, check out [John Gruber's official post of syntax](#) & [Adam Pritchard's great cheatsheet](#). If you want to learn more on some major Markdown flavors' features, see:

- [GitHub flavored Markdown](#)
- [GitLab flavored Markdown](#)

Originally contributed by DAN TURKEL, & updated by [13 contributor\(s\)](#).”

# Bibliography

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