



HOMEWORK

PART #1

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WHO AM I

- Kristof Werling
- 31 years of experience at HP:
DevOp, Developer, Architect
- Started KwerlingIT GmbH
- Focus: IT / Cyber Security
- Security Audits, IT consulting,
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EXERCISE SUMMARY

- Create a Java program, which reads in a Markdown file (*.md) and translates it into HTML.

A decorative graphic consisting of thin, grey, stylized circuit lines with small circles at the ends, extending horizontally from the left and right sides of the central black box.

MARKDOWN & HTML

JUST WRITING SOME JAVA CODE AND GETTING TO KNOW SOME
OF THE ODDITIES.

HEADINGS

Markdown	Html	Rendered Output
# Heading level 1	<h1>Heading level 1</h1>	Heading level 1
## Heading level 2	<h2>Heading level 1</h2>	Heading level 2
### Heading level 3	<h3>Heading level 1</h3>	Heading level 3
#### Heading level 4	<h4>Heading level 1</h4>	Heading level 4
##### Heading level 5	<h5>Heading level 1</h5>	Heading level 5
##### Heading level 6	<h6>Heading level 1</h6>	Heading level 6

PARAGRAPHS

Markdown	Html	Rendered Output
I really like using Markdown.	<code><p>I really like using Markdown.</p></code>	I really like using Markdown.
I think I'll use it to format all of my documents from now on.	<code><p>I think I'll use it to format all of my documents from now on.</p></code>	I think I'll use it to format all of my documents from now on.
Use a blank line to start / finish a paragraph		

TEXT FORMATTING

Markdown	Html	Rendered Output
I just love bold text .	I just love bold text.	I just love bold text .
Italicized text is the <i>cat's meow</i> .	Italicized text is the cat's meow.	Italicized text is the <i>cat's meow</i> .
This text is <i>really important</i> .	This text is really important.	This text is <i>really important</i> .

ORDERED LISTS

Markdown	Html	Rendered Output
1. First item 2. Second item 3. Third item 4. Fourth item	<pre> First item Second item Third item Fourth item </pre>	1.First item 2.Second item 3.Third item 4.Fourth item
1. First item 1. Second item 1. Third item 1. Fourth item	<pre> First item Second item Third item Fourth item </pre>	1.First item 2.Second item 3.Third item 4.Fourth item

ORDERED LISTS

Markdown	Html	Rendered Output
1. First item 8. Second item 3. Third item 5. Fourth item	<pre> First item Second item Third item Fourth item </pre>	1.First item 2.Second item 3.Third item 4.Fourth item
1. First item 2. Second item 3. Third item 1. Indented item 2. Indented item 4. Fourth item	<pre> First item Second item Third item Indented item Indented item Fourth item </pre>	1.First item 2.Second item 3.Third item 1. Indented item 2. Indented item 4.Fourth item

UNORDERED LISTS

Markdown	Html	Rendered Output
<ul style="list-style-type: none">- First item- Second item- Third item- Fourth item	<pre> First item Second item Third item Fourth item </pre>	<ul style="list-style-type: none">•First item•Second item•Third item•Fourth item
<ul style="list-style-type: none">* First item* Second item* Third item* Fourth item	<pre> First item Second item Third item Fourth item </pre>	<ul style="list-style-type: none">•First item•Second item•Third item•Fourth item

UNORDERED LISTS

Markdown	Html	Rendered Output
+ First item + Second item + Third item + Fourth item	<pre> First item Second item Third item Fourth item </pre>	<ul style="list-style-type: none">•First item•Second item•Third item•Fourth item
- First item - Second item - Third item - Indented item - Indented item - Fourth item	<pre> First item Second item Third item Indented item Indented item Fourth item </pre>	<ul style="list-style-type: none">•First item•Second item•Third item<ul style="list-style-type: none">• Indented item• Indented item•Fourth item

EXERCISE #1

- Familiarize yourself with the Markdown syntax (use the Github flavored one)
- For this exercise focus on headings and bold & italics formatting
- As for the java program:
 - Assume syntactically correct Markdown text
 - Start translation headings from MD into HTML. Document how the code determines if a heading is a heading and how long the heading text is. Ask yourself, if that rule might get conflict with other MD syntax.
 - If time permits, do so for the bold and italics formatting as well.

CHALLENGES TO SOLVE

- There are tags, which have the same start and end tag (i.e.: *, **). That should be fairly straightforward in coding.
- There can be nested / interwoven tags (i.e.: **italics ** italics bold * bold ***). This example is really difficult to process.
- There are tags, which end with a \n (i.e.: #, * (list))
- There are tags, which might be longer than one character (i.e.: #, ####)

INFORMATION ON MARKDOWN

URL	Info
https://github.github.com/gfm/	Github Flavored Markdown
https://github.blog/2017-03-14-a-formal-spec-for-github-markdown/	A formal spec for GitHub Flavored Markdown
https://en.wikipedia.org/wiki/Markdown	Wiki page on Markdown
https://babelmark.github.io/	Many Render Engines in comparison
https://commonmark.org/	CommonMark: A strongly defined, highly compatible specification of Markdown
https://www.smashingmagazine.com/2020/12/commonmark-formal-specification-markdown/	CommonMark: A Formal Specification For Markdown
https://spec.commonmark.org/0.30/	CommonMark: Spec v. 0.30 (latest)
I am sure you will find more	

SUMMARY OF ISSUES

- Markdown is not fully defined. Different Rendering Engines interpret it differently at times. There is no universal agreement on Grammar / Syntax.
- Because of the possibility to have nested tags as well as interwoven tags makes it complicated
- Opposite to (for example) HTML there are tags, which either do not require an end tag to finish
- There are tags, which mean different things in different context (e.g.: *)

TOOLS TO USE

- Markdown Viewer [\(For example: Windows Markdown Viewer\)](#)
- Web browser of your choosing
- Markdown Editor: IntelliJ