Introduction to using Markdown language for taking notes in Computer Science

Taking notes in Computer Science can be iffy when using text-editors like Word, OneNote or Google Docs. There's a filetype named `Markdown` or `.md` for the filetype extension.

This filetype allows for text-formatting, including: Headings, code-highlighting, lists, bold and italic text.

"*Why should we use it?*", you may ask.

Let me explain shortly what markdown is, followed by how to use it, and hopefully you'll understand *why*.

What is Markdown?

Markdown is a `markup` language, making it possible to format text for webpages, using a text-editor.

There are multiple ways of styling such document, i.e. by using headings, lists (numbered or bullet points), emphasis (**bold text** or *italics*) or code highlighting, like this:

```java
public class HelloWorld{
    public static void main(String[] args) {
        System.out.println("Hello World!");
    }
}
```

Examples of using headers:

Heading Type	Example
# Heading 1	# Heading 1
## Heading 2	## Heading 2
### Heading 3	### Heading 3
#### Heading 4	**Heading 4**
##### Heading 5	**Heading 5**

Heading Type	Example
###### Heading 6	**Heading 6**

- One `#` equals to `Heading 1` in Word or in Google Docs.
- Two `##` equals to `Heading 2` in Word or in Google Docs.
- Three `###` equals to `Heading 3` in Word or in Google Docs.
- And so forth...

Example:

The `What is Markdown?` heading, is a type 2 heading, formatted with two hashtags `##`, whereas the title `Introduction to using Markdown language for taking notes in Computer Science` is using a heading 1, formatted with a single `#`.

Bullet points and lists

One may need to showcase a numbered list or list of bullet points. This is also possible, simply by prefacing your list item with a `*` for bullet-points and a `1` for numbered items (remember to increment the number for each list-item).

Bullet-point list example:

- This is item 1
- This is item 2
- This is item 3

Numbered list example:

1. This is item 1
2. This is item 2
3. This is item 3

Sidenote: Some editors (like IntelliJ and Visual Studio Code, etc.) will increment the number automatically, if you press the `Enter` key to jump to the next line.

Emphasising Text

Sometimes you may need to put certain words in **bold** text or in *italic* text, to emphasize the said word.

Some text-editors (IntelliJ and Visual Studio Code, etc.) allows for keyboard shortcuts to said functions:

- Windows: `ctrl+b` for **bold text** and `ctrl+i` for *italic text*.
- MAC: I assume that would be `Command+b` for **bold** and `Command+i` for *italic*.

Otherwise, to do it manually, you would need to put double asterisk (`*`) before and after the string of text: `**text you want to be bold**`, and for italic text, that would be `_some text you want to be italic_`.

Code-highlighting (Also called 'Syntax highlighting')

This is probably the most important and most valuable aspect of using Markdown language for taking notes and describing your Coding-project in detail.

Code-highlighting is a pain to setup in text-editors like Word or the like, but it is rather simply in Markdown language.

All one have to do is type triple '`' followed by the code language, you want to use the highlighting from. To see exactly how the setup looks, I advice to look in the "Readme.md" file provided in this project.

Java example:

```java
public class HelloWorld{
    public static void main(String[] args) {
        System.out.println("Hello World!");
    }
}
```

output:

```
Hello World!
```

Python example:

```python
print("Hello world!")
```

output:

```
Hello World!
```

C# example (Taken from: GeeksForGeeks):

```csharp
// C# program to print Hello World!
using System;

// namespace declaration
namespace HelloWorldApp {

    // Class declaration
    class Geeks {

        // Main Method
        static void Main(string[] args) {
```

```
            // statement
            // printing Hello World!
            Console.WriteLine("Hello World!");

            // To prevents the screen from
            // running and closing quickly
            Console.ReadKey();
        }
    }
}
```

output:

```
  Hello World!
```

Sidenote: Please note the **Syntax Highlighting** is only highlighting the Java code if being viewed in IntelliJ, as IntelliJ will only provide syntax-highlighting for the programming language in question, which is Java.

Should you view this Readme.md in your browser, i.e. on GitHub, or in Visual Studio Code it will provide syntax-highlighting for ALL the examples.

And as such, you have now been introduced to the basics of using Markdown language. This should be enough for you to start taking notes, using markdown language.

For more information, see GitHub's QuickStart guide! 😃

This link provides information on how to do the following:

- Make tables
- Inserting quotes
- Adding comments
- Adding collapsable sections
- Inserting images
- And more advanced features