Compiler Project | 01 GRAMMAR

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List of functionalities

1. Paragraph
2. Bold text
3. Italic text
4. Underlined text
5. Strikethrough text (--...--)
6. Titles (# to ######)
7. Links ([...](...))
8. Images (![...](...))
9. Quotes (> …)
10. Inline code (`...`)
11. Block code (```...```)
12. Horizontal rule (---)
13. Line Breaks
14. Bold and Italic (This text is ***really important***.)
15. Lists (Ordered Lists and unordered lists)
16. URLs and Email Addresses
17. Characters You Can Escape

Markdown

T = {TEXT, <newline>, *, _, ~, #, !, [,], (,), <, `, -, \n, \, >, ., +, {, }, | , line, polyline, polygon, circle, ellipse, rect, text, white, red, blue, yellow, cyan, black, purple, orange, INT, DIG, LET, middle, start, end, ε, xsvg, :}

N = {<paragraph>, <bold>, <italic>, <underlined>, <strikethrough>, <titles>, <h1>, <h2>, <h3>, <h4>, <h5>, <h6>, <image>, <block quote>, <nested block quote>, <multiple block quote>, <single block quote>, <code>, <block code>, <horizontal rule>, <new line>, <bold italic>, <list>, <url>, <escape sequence>, <color>, <canva>, <hex>, <position>, <canva>, <svg element>, <point>, <line>, <polyline>, <polygon>, <circle>, <ellipse>, <rect>, <text>}

P =   **<markdown doc>**: (<paragraph> | <canva>)*
       <paragraph>: (<title> | <list> | TEXT | <bold> | <italic> | <underline>| <strikethrough> | <links> | <images> | <inline code> | <bold and italics> | <escape sequence> | <url>)* <newline>
       <bold>: **TEXT**
       <italic>: *TEXT*
       <strikethrough>: ~~TEXT~~
       <title>: <h1> | <h2> | <h3> | <h4> | <h5> | <h6>
             <h1>: # TEXT

<h2>: ## TEXT
<h3>: ### TEXT
<h4>: #### TEXT
<h5>: ##### TEXT
<h6>: ###### TEXT
<h1>: #TEXT

<image>: ![TEXT] (TEXT)
<nested block quote>: > <single block quote>
<multiple block quote>: ((<single block quote>|<nested block quote)
<new line> > <new line> (<single block quote>|<nested block quote))+
<single block quote>: > <paragraph>,
<block quote>: <single quote> | <nested block quote> | <multiple block quote>
<code>: ` TEXT `
<block code>: ``` (TEXT | <newline>)* ```
<horizontal rule>: <newline><newline> (***+ | —+ | ___+)
<newline><newline>
<new line>: \n
<bold italic>: ***TEXT*** | ___TEXT___
<list>: (* TEXT<newline>)+ | (- TEXT<newline>)+
<url>: <TEXT> | TEXT
<escape sequence>: "\\" | "\!" | "\`" | "_" | "*" | "\{" | "\}" | "\(" | "\)" | "\<" | "\>" |
"\[" | "\]" | "\#" | "\+" | "\-" | "\." | "\|"

<canva>:```xsvg:INT,INT,INT,INT <newline> (<svg element><newline>)*```
<hex>: #(DIG|LET)(DIG|LET)(DIG|LET)(DIG|LET)(DIG|LET)(DIG|LET)
<color> : <hex>| white | red | blue | yellow | cyan | black | purple | orange
<position>: middle | start | end
<svg element>: <polygon> | <line> | <polyline> | <circle> | <ellipse> | <rect> |
<text>
<point> INT,INT
<line>: line <point><point><point><point> <color>(<color>|ε)
<polyline>: polyline <point><point><point><point> <color> (<color>|ε)
<polygon>: polygon <point><point><point> <color> (<color>|ε)
<circle>: circle <point> INT <color> (<color>|ε)
<ellipse>: ellipse <point> INT INT <color> (<color>|ε)
<rect>: rect <point> INT INT <color> (<color>|ε)
<text>: text <point> "TEXT" <position> (<color>|ε)

S = <**markdown doc**>

Paragraph
Markdown: <paragraph>
T = {TEXT, <newline>}

N = {paragraph}
P = <paragraph>: (<title> | <list> | TEXT | <bold> | <italic> | <underline>| <strikethrough> | <links> | <images> | <inline code> | <bold and italics> | <escape sequence> | <url>)* <newline>
S = <paragraph>

Bold text
Markdown: **bold text**
T = {TEXT, *}
N = {<bold>}
P = <bold>: **TEXT**
S = <bold>

Italic text
Markdown: *italic text*
T = {TEXT, *}
N = {<italic>}
P = <italic>: *TEXT*
S = <italic>

Underlined text
Markdown: __underlined text__
T = {TEXT, _}
N = {<underlined>}
P = <underlined>: __TEXT__
S = <underlined>

Strikethrough text
Markdown: <strikethrough text>
T = {TEXT, ~}
N = {<strikethrough>}
P = <strikethrough>: ~~TEXT~~
S = <strikethrough>

Titles
Markdown: <titles>
T = {TEXT, #}
N = { <h1>, <h2>, <h3>, <h4>, <h5>, <h6>, <title> }
P =   <title>: <h1> | <h2> | <h3> | <h4> | <h5> | <h6>
        <h1>: # TEXT
        <h2>: ## TEXT
        <h3>: ### TEXT
        <h4>: #### TEXT

        `<h5>`: ##### TEXT
        `<h6>`: ###### TEXT
        `<h1>`: #TEXT
S = `<title>`

Images
Markdown: ![this link](https://example.com/image.jpg)
T = {TEXT, [,], (,), !}
N = {`<image>`}
P = `<image>`: ![TEXT] (TEXT)
S = `<image>`

Quotes
Markdown: > paragraph text
T = { >}
N = {`<block quote>`, `<paragraph>`, `<nested block quote>`, `<multiple block quote>`, `<single block quote>` `<new line>` }
P =   `<nested block quote>`: > `<single block quote>`
    `<multiple block quote>`: ((`<single block quote>`|`<nested block quote>`) `<new line>` > `<new line>` (`<single block quote>`|`<nested block quote>`))+
    `<single block quote>`: > `<paragraph>`,
    `<block quote>`: `<single quote>` | `<nested block quote>` | `<multiple block quote>`

S = `<block quote>`

Inline code
Markdown: ` int i = 2**4 `
T = {TEXT, `}
N = {`<code>`}
P = `<code>`: ` TEXT `
S = `<code>`

Block code
Markdown: ``` TEXT ```
T = {TEXT, ```}
N = {`<block code>`, `<newline>`}
P = `<block code>`: ``` (TEXT | `<newline>`)* ```
S = `<block code>`

Horizontal rule
Markdown: ***
T = {*, _, -}
N = {`<horizontal rule>`, `<newline>`}

P = <horizontal rule>: <newline><newline> (***+ | —+ | ___+) <newline><newline>
S = <horizontal rule>

New Line
Markdown: new line
T = {\n}
N = {<new line>}
P = <new line>: \n
S = <new line>

Bold and Italic
Markdown: ***TEXT***
T = {TEXT,***,___}
N = {<bold italic>}
P = <bold italic>: ***TEXT*** | ___TEXT___
S = <bold italic>

Lists
Markdown: * _
T = {*, _, TEXT}
N = {<list>}
P = <list>: (* TEXT<newline>)+ | (- TEXT<newline>)+
S = <list>

URLs and email addresses
Markdown: <TEXT> | TEXT
T = {TEXT, <, >, [,], (,)}
N = {<url>}
P = <url>: <TEXT> | TEXT
S = <url>

Characters You Can Escape
Markdown: \!, \`, \\, _, *, …
T = {\, !, `, _, *, {, }, (,), <, >, [,], #, +, -, ., |}
N = {<escape sequence>}
P = <escape sequence>: "\\" | "\!" | "\`" | "_" | "*" | "\{" | "\}" | "\(" | "\)" | "\<" | "\>" | "\[" | "\]" | "\#" | "\+" | "\-" | "\." | "\|"
S = <escape sequence>

XSVG
Markdown: ```xsvg```

T = {`, line, polyline, polygon, circle, ellipse, rect, text, white, red, blue, yellow, cyan, black, purple, orange, INT, DIG, LET, TEXT, middle, start, end, ε, ", xsvg, :}

N = {<color>, <canva>, <hex>, <position>, <canva>, <svg element>, <point>, <line>, <polyline>, <polygon>, <circle>, <ellipse>, <rect>, <text>}

P =   <hex>: #(DIG|LET)(DIG|LET)(DIG|LET)(DIG|LET)(DIG|LET)(DIG|LET)

        <color> : <hex>| white | red | blue | yellow | cyan | black | purple | orange

        <position>: middle | start | end

        <canva>:```xsvg:INT,INT,INT,INT <newline>
                    (<svg element><newline>)*```

        <svg element>: <polygon> | <line> | <polyline> | <circle> | <ellipse> | <rect> |
                    <text>

        <point> INT,INT

        <line>: line <point><point><point><point> <color>(<color>|ε)

        <polyline>: polyline <point><point><point><point> <color> (<color>|ε)

        <polygon>: polygon <point><point><point> <color> (<color>|ε)

        <circle>: circle <point> INT <color> (<color>|ε)

        <ellipse>: ellipse <point> INT INT <color> (<color>|ε)

        <rect>: rect <point> INT INT <color> (<color>|ε)

        <text>: text <point> "TEXT" <position> (<color>|ε)

S = <canva>