Html

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- Elm

Recap

Code recap

What can we infer from the following type annotation?

```
something : (Bool -> Int) -> Bool
-> Int
```

What does this function application produce?

```
double : Int -> Int
double x =
    2 * x

List.map double [1,2,3,4,5]
```

```
mystery : List Int -> Int -> Int
mystery l acc =
    case l of
        [] ->
            acc
        x :: xs ->
            mystery xs
                (if x > acc then
                    x
                 else
                    acc
                )
mystery [1,2,3,4,5,4,3,2,1] 0
```

What does this expression reduces to?
What does mystery calculate?

Commands recap

Create an elm project?

- elm init

Track changes in git?

- git add <file>

Commit changes in git?

- git commit -m'description'

Push to remote repo in git?

- git push origin main

Enforce format rules on our code?

- elm-format src/

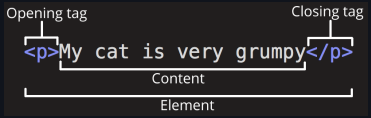
Html

> HTML (HyperText Markup Language) is a markup language that tells web browsers how to structure the web pages you visit.

HTML lives inside text files called HTML documents, or just documents, with a **.html** file extension. An HTML document contains the web page's content and specifies its structure.

Html elements

HTML consists of a series of elements:



- Openning tag -> Name of the element (eg p for paragraph) in angle brackets, marks the element starts.
- Content
- Closing tag -> Slash & name of the element, marks the element end.

Html demo

1. Create a folder "Ex2-html"
2. Inside "Ex2-html" create a file named main.html
3. Inside write " Web applications " and save changes
4. Open the file in your browser.
5. Right click on the page and choose "Inspect" or "Inspect element"
6. In the new sub-window, select "Elements" or "Inspector"

How many html element's are on our page?

Is there any hierarchical relationship between this elements?

> Elements can be placed within other elements. This is called nesting.

Html demo

Let's update our main.html

```
<!DOCTYPE html>
<html>
    <head></head>
    <body>
        <p>Web application</p>
    </body>
</html>
```

1. Notice the "<!DOCTYPE html>" at the first line, it defines that this document is an html5 document.
2. It's easier writting both opening and closing tags first
3. It's easier aligning opening and close tags identation

Html elements

- <p> -> Paragraph
- <h1> -> Header 1
- -> Bold text
- -> Divider (Structural) We can place several elements inside a container (div)

Let's update our file with:

```
<div>
    <h1>This is an header 1</h1>
    <p>This is a paragraph with a <strong>strong</strong> word</p>
</div>
```

Void elements

> Not all elements follow the pattern of an opening tag, content, and a closing tag.
> Some elements consist of a single tag, which is typically used to insert/embed something in the document.

Such elements are called void elements.

-
 -> Jump to a new line

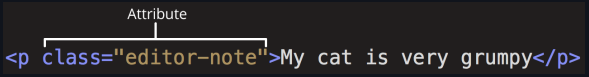
```
<p>Hello<br>World</p>
```

Html attributes

Html attributes

Elements can also have attributes.

> Attributes contain extra information about the element that won't appear in the content.



- A space between the attribute and the element name
- The attribute name followed by an equal sign.
- An attribute value, wrapped with opening and closing quotes
- Attributes are always specified in the start tag
- Attributes usually come in name/value pairs like: name="value"

Attributes demo

Let's add the attribute class into any of our html elements and see what happens on the browser.

Elements and attributes

Let's disect the following html code:

```
<a href="https://upa.edu.mx">My school</a>
```

- What's the element name?
  - a
- What is the element content?
  - My school
- Does it has attributes?
  - Yes
- Is it avoid element?
  - No (it has closing tag)
- What are the attribute key and value?
  - key = href
  - Value = https://upa.edu.mx


Elm

1. Let's create a new elm project in our "Ex2-html" folder (elm init)
2. Create a file "Main.elm"

```
module Main exposing (main)

import Html
import Html.Attributes

main : Html msg
main =
```

Elm html

In elm we can focus only on the content:

```
<!DOCTYPE html>
<html>
    <head></head>
    <body>
        <p>Web application</p>
    </body>
</html>
```

```
module Main exposing (main)

import Html
import Html.Attributes

main : Html msg
main =
    Html.p
```

```
Html.p : List (Html.Attribute msg) -> List (Html.Html msg) -> Html.
Html msg
```

Elm html

```
Html.p : List (Html.Attribute msg) -> List (Html.Html msg) -> Html.
Html msg
```

```
<!DOCTYPE html>
<html>
    <head></head>
    <body>
        <p>Web application</p>
    </body>
</html>
```

```
module Main exposing (main)

import Html
import Html.Attributes

main : Html msg
main =
    Html.p
        []
```

Do we have any attribute?

Elm html

```
Html.p : List (Html.Attribute msg) -> List (Html.Html msg) -> Html.
Html msg
---
Html.text : String -> Html.Html msg
```

```
<!DOCTYPE html>
<html>
    <head></head>
    <body>
        <p>Web application</p>
    </body>
</html>
```

```
main : Html msg
main =
    Html.p
        []
        [ Html.text "Web
applications"]
```

Elm html

Final complete code:

```
<!DOCTYPE html>
<html>
    <head></head>
    <body>
        <p>Web application</p>
    </body>
</html>
```

```
module Main exposing (main)

import Html
import Html.Attributes

main : Html msg
main =
    Html.p
        []
        [ Html.text "Web
applications" ]
```


elm reactor

Once our code is complete we can test it the regular way with:

```
elm repl
import Main
```

We should get no errors! Then we can proceed with:

```
elm reactor
```

And open a browser tab at localhost:8000
Navigate the file explorer to src/Main.elm

 Challenge

▒▒▒▒▒ Challenge

Are you able to produce the following html code in elm?

```
<div>
    <h1>Nested h1</h1>
</div>
```