Lec 06 - Forms And Input In Elm

CS 1XA3

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Review: Basic Elm App Template

```
type alias Model = ...
type Msg = ...

init : Model
init = ...

update : Msg -> Model -> Model
update msg model = ...

view : Model ->Html Msg
view model = ...

main : Program Never Model Msg
main = beginnerProgram
    { model = init, view = view, update = update }
```

Elm Buttons

- An Html tag for button is defined in Html

  ```
  button : List (Attribute msg) -> List (Html msg)
                                -> Html msg
  ```

- Attributes or a button should include an event from Html.Event

  Example

  ```
  main = div []
         [button [onClick Msg] [text "Label"]]
  ```

Elm Mouse Events

Mouse events are defined in Html.Event

```
onClick : msg -> Attribute msg

onDoubleClick : msg -> Attribute msg

onMouseDown : msg -> Attribute msg

onMouseUp : msg -> Attribute msg

onMouseOver : msg -> Attribute msg

onMouseOut : msg -> Attribute msg
```

Case Study: Pic Selector

- Consider the following model

```
type alias Model = { imgs : List String }

init : Model
init = { imgs = ["Img1.jpg","Img2.jpg","Img3.jpg"]  }

getImage model = ...

rotateRight model = ...

rotateLeft model = ...
```

- We can use this functionality to build a Pic Selector

Other Input Methods: RadioButtons

Example

```
view model = fieldset [] [radio "Image1" Image1,
                          radio "Image2" Image2,
                          radio "Image3" Image3 ]

radio : String -> msg -> Html msg
radio value msg =
  label
    [ style [("padding", "20px")] ]
    [ input [ type_ "radio", name "font-size",
              onClick msg ] []
    , text value
    ]
```

See https://www.w3schools.com/html/html_form_input_types.asp for a reference on different input types

Other Input Methods: Text Fields

Create a textfield using the input Html tag and update the model with the onInput Html event

```
type Msg = Content String
view model =
   input [ placeholder "Place", onInput Content ] []
```