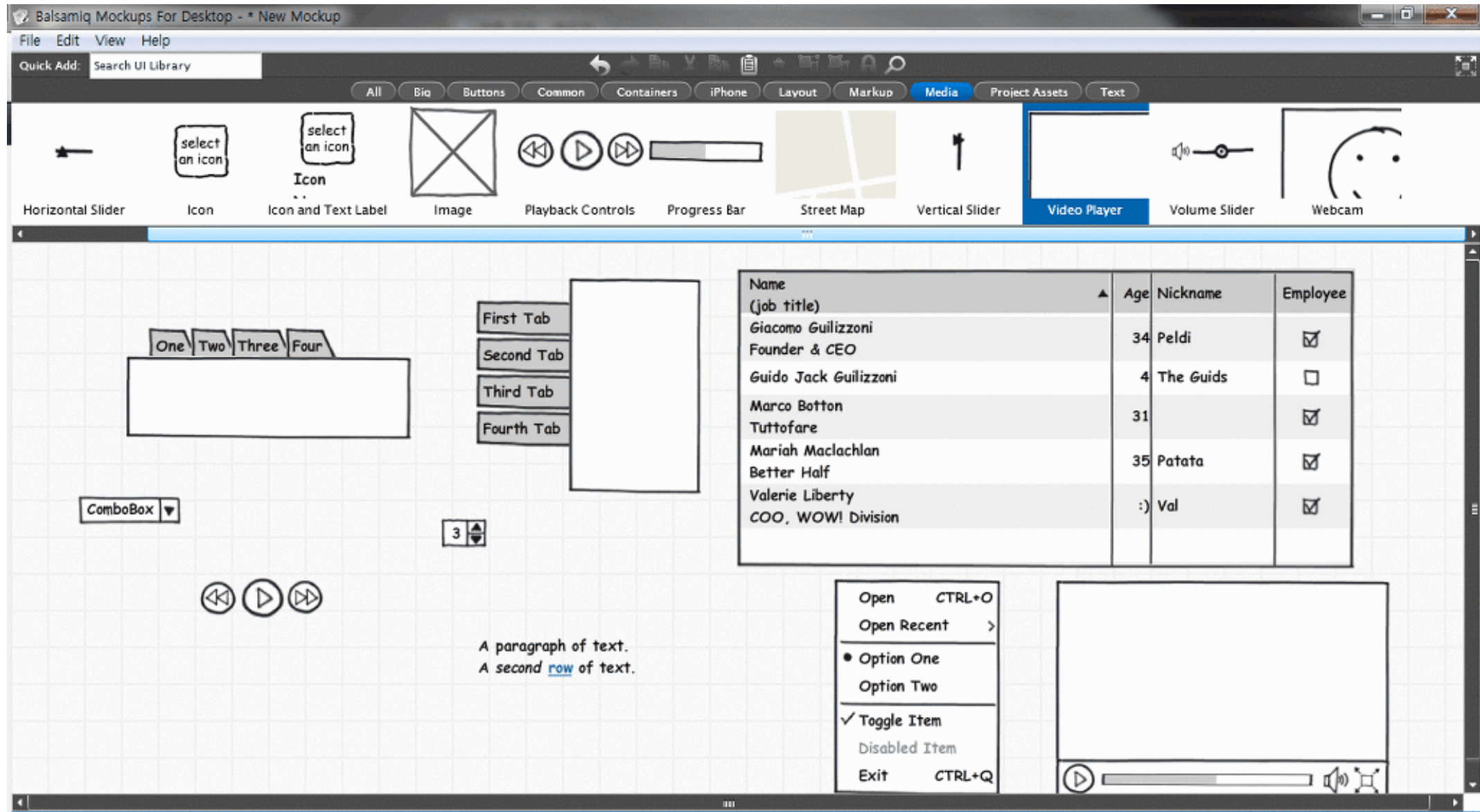# Tools for interface design

Fethi Rabhi

There are tools for low fidelity prototyping

High fidelity prototypes

Two approaches:

- Use a sophisticated tool, but what is created cannot be used in implementation
- Directly implement the GUI

For inexperienced developers, we recommend:

- Develop a simple Web interface / HTML / CSS
- Implement only parts of the GUI that can help demonstrate user experience
- Some of these elements can be reused in the final implementation

Here we focus on using Bootstrap

Web interface prototyping – HTML

- Assumes familiarity with HTML
- Create HTML pages
- Example

```html
<!DOCTYPE html>
<head>
   <title>EBDX Cloud</title>
</head>


<body>
            <h1>Hello world </h1>
            <p>This is a web page <br/> Look at my nice
logo</p>
        <img src="EBDX_logo.PNG"/>
</body>
</html>
```

Hello world

This is a web page
Look at my nice logo

Cascading Style Sheets (CSS)

What is CSS ?

- CSS describes *how HTML elements are to be displayed on screen, paper, or in other media*
- CSS *saves a lot of work*. It can control the layout of multiple web pages all at once
- External stylesheets are stored in *CSS files*

What is Bootstrap?

- Bootstrap is a collection of HTML and CSS *predefined* design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins
- Bootstrap is free and allows faster and easier web development
- Bootstrap also gives you the ability to easily create *responsive* designs

Cascading Style Sheets

HTML5 and CSS3
Elizabeth Castro and Bruce Hyslop
7th ed. Berkeley, Calif. : Peachpit, c2012

- HTML: content; CSS: formatting

- Colour, margin, position, animation, etc...

- Specified in-line or in a separate .css file

Web interface prototyping – CSS/Bootstrap

https://getbootstrap.com/docs/4.5/getting-started/introduction/

Adding Bootstrap can be done in 2 ways:

- Download and link locally
- Link from the Web: go to download page, select starter template, copy and paste into your HTML page

Starter template

Be sure to have your pages set up with the latest design and development standards. That means using an HTML5 doctype and including a viewport meta tag for proper responsive behaviors. Put it all together and your pages should look like this:

```
<!doctype html>
<html lang="en">
  <head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css" integrity="sha384-Gn5384xqQ1aoWXA+058RXPxPg6fy4IWvTNh0E263XmFcJlSAwiGgFAW/dAiS6JXm">

    <title>Hello, world!</title>
  </head>
  <body>
    <h1>Hello, world!</h1>

    <!-- Optional JavaScript -->
    <!-- jQuery first, then Popper.js, then Bootstrap JS -->
    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js" integrity="sha384-KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js" integrity="sha384-ApNbgh0B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js" integrity="sha384-JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"></script>
  </body>
</html>
```

Copy to clipboard
Copy

Copy and paste

Bootstrap examples

- Bootstrap has a rich collection of examples
  - See examples in https://getbootstrap.com/docs/4.0/examples/
  - Creating interfaces from examples is easy
- Examples:
  - Dashboard: https://getbootstrap.com/docs/4.0/examples/dashboard/
  - Album: https://getbootstrap.com/docs/4.0/examples/album/
- Bootstrap makes it easy to do responsive design
  - Components can adapt to different screen sizes

Boostrap components

Components
Alerts
Badge
Breadcrumb
Buttons
Button group
Card
Carousel
Collapse
Dropdowns
Forms
Input group
Jumbotron
List group
Modal
Navs
Navbar
Pagination
Popovers
Progress
Scrollspy

- Bootstrap has
  - Many different types of Components
  - Each has online videos and tutorials
  - Navbars

- More on Navbars
  - Help users navigate through your system
  - See examples https://getbootstrap.com/docs/4.0/components/navbar/
  - Navbars will adapt to screen size without any change to the code

Conclusion

- Choosing a good for interface design is important for prototyping

- Needs to fit with choice of Web stack

- Guest lectures will be given on:
  - Front-end technologies
  - Web stacks