Assignment 12 (HF, major subject)

Due: Wed 01.02.2017; 20:00h (1 Week)

Goals

After doing this assignment

- You can discuss video playing capabilities of browsers
- You know more details about state-of-the-art web applications.
- You can build a web-application layout with Polymer Elements

Task 1: HTML5, DASH   Difficulty: Easy

Read the article "YouTube drops Flash for HTML5 video as default".

Briefly answer the following questions:

a) What are the reasons for which YouTube made the switch to HTML5?
b) Why does Adaptive Bitrate (ABR) reduce buffering?
c) Why is reducing buffering desirable
d) What does "heavily congested networks" mean?
e) What does this article have to do with DASH?

Put your solution into a text file 'task1.txt' and include it in your submission.

Task 2: Modern Web Apps   Difficulty: Easy

In the Polymer universe, you come across a number of technical terms and paradigms that you may not have heard of yet. However, if you're planning to work in this domain, it's important to know what people are talking about.

Do an online research about these topics:

- RAIL Model
- PRPL Pattern
- Progressive Web App (PWA)
- Critical Rendering Path
- Accelerated Mobile Pages (AMP)
- App Shell

Write down the problem that each of these things is trying to solve, and the general idea. (maximum three sentences per item).
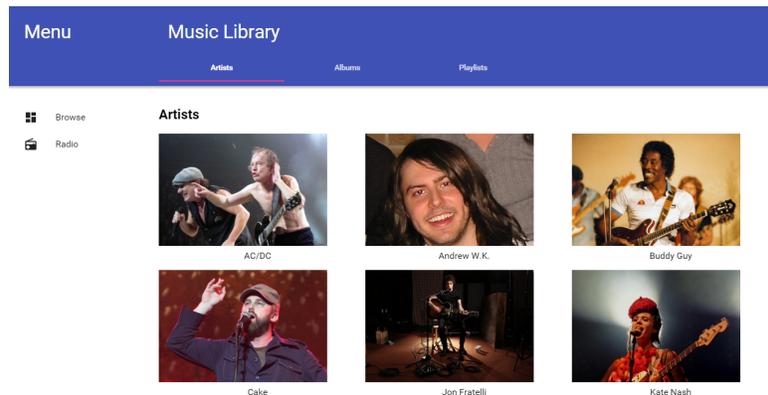
Include your solution in the submission.

Task 3: Music Web App   Difficulty: Medium

In this task, we would like you to try out as many polymer elements from the element catalog as possible.

You should create a webpage that displays a music library including artists, albums and playlists like this:

We created a little video demonstrating the music library: https://youtu.be/3fTV5JnPntw

We used the following elements for the sample solution shown in the video:
iron-icons, iron-icons/av-icons, **iron-pages**, paper-card, **app-drawer-layout**, **app-drawer**, app-header-layout, app-header, paper-item, paper-icon-item, paper-listbox, paper-menu, **paper-tabs**, **paper-tab**, **app-toolbar** (The ones in bold script are recommended to try out)
We recommend this procedure to help you get started:

1. As a root element, use an app-drawer-layout. As a first child, add an app-drawer, the second child is an app-header-layout.
2. The app-drawer has an app-toolbar and a paper-menu with paper-icon-items.
3. The app-header-layout's children are an app-header and one iron-pages element.
4. Put paper-tabs into an app-toolbar inside the app-header. Use data-binding on the selected attribute and make use of the attrForSelected property like this:
   `<paper-tabs attr-for-selected="page" selected="{{ selectedBrowsePage }}">`
   Each paper-tab then has to have an attribute "page", for example:
   `<paper-tab page="artists">Artists</paper-tab>`
5. Use iron-pages to switch the content (artists, albums or playlists). This works well together with the paper-tabs element – simply use the `selectedBrowsePage` variable from above and bind it to the "selected" attribute of iron-pages. Don't forget to set `attr-for-selected="page"`. too. Add a "page" attribute to each child element of iron-pages, just like for the paper-tabs.
6. Immediate children of iron-pages are the actual "pages". You can use regular divs that contain the content of the corresponding page.

You can go beyond these requirements. Put your solution containing your bower.json, html and css files into the folder 'task3'. **Please do not submit the bower_components folder!**

Task 4: Prepare for the exam

Difficulty: Depends

Reminder: Ask your questions here until February 03rd:

https://mimuc-mmn.firebaseapp.com/

After the deadline, we'll answer the questions in a dedicated document that we'll put online.

Submission

Please turn in your solution via UniWorX. You can form groups of up to three people.

We encourage you to sign up for Slack! All you need is a CIP account and an email address that ends in "@cip.ifi.lmu.de". Ask us if you don't know how to get them.

If you have questions or comments before the submission, please contact one of the tutors. They are on Slack @tobi.seitz, @peterjuras and @thomas-weber. Remember, that they also want to enjoy their weekends ☺

It also makes sense to ask the question in our #mmn-ws1617 channel. Maybe fellow students can help or benefit from the answers, too!

CodeLabs

As always, everyone is invited to participate in the CodeLabs on Wednesday between 6 and 8 pm. We encourage you to go there if you struggle with installation or nasty bugs that just don't seem to go away. The times are flexible, so you can join anytime during the CodeLab hours.