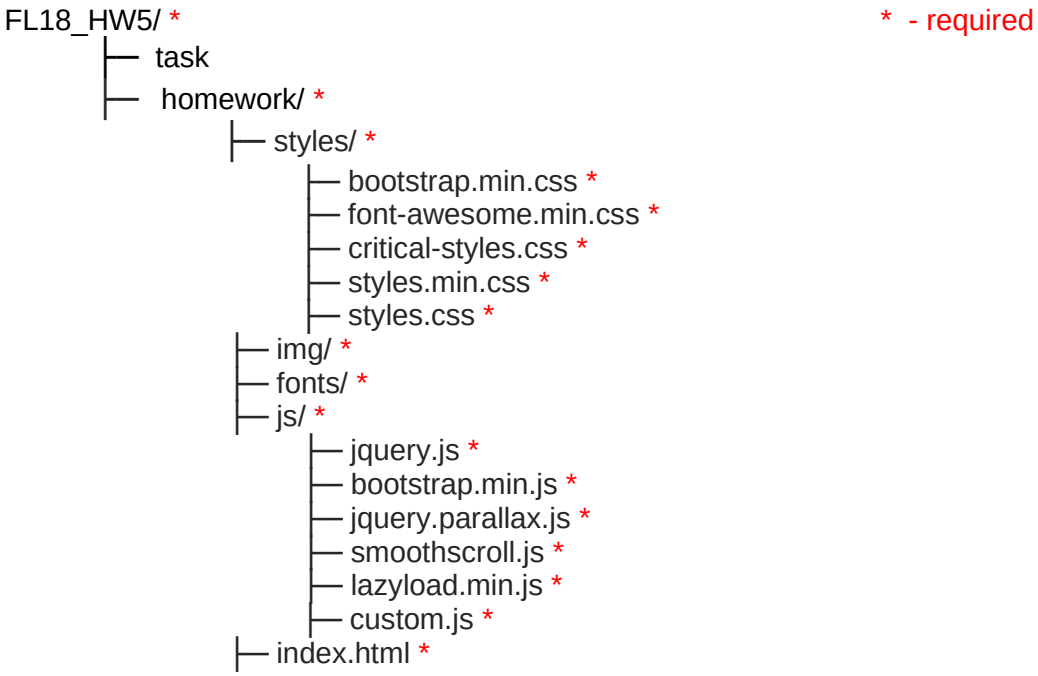
Frontend Optimization

DEADLINE: 02/02/2022

FOLDER STRUCTURE



TASK

Make front-end optimization for FL16 page including:

- Add “Critical CSS” to provide quick first meaningful paint:
  - Copy styles from “critical-styles.css”
  - Paste them in <head> as inline styles using tag <style>
- Minify and Concatenate CSS in one file (Use online tool Shrinker).
- Implement asynchronous load of CSS and JS:
  - For JS use ‘defer’ or ‘async’ attributes for ‘script’ tag
  - For CSS use “media” and “onload” attributes.
- Create smaller version of all images for mobile devices. Use ‘srcset’ attribute to show proper image depending on screen size.
- Deliver scaled image sizes for desktop and mobile devices
- Implement lazy load of images using “lazyload” plugin (lazyload.js)

Setup:

- Install Node.js and NPM (skip this step if already installed)
- Install local web server running `npm install -g http-server` (use `sudo` in case of permission errors)
- Open project folder in terminal/command line and run `http-server` command
- You can find your server running on 'http://127.0.0.1:8080'
- All CSS and JS libraries can be found already downloaded and ready to use in project folders
- Use 'Network' tab in browser Developer Tools to check performance improvements. Try it in Incognito mode as well.

- **Mandatory**: 'Disable cache' flag should be checked in 'Network' tab to prevent assets from caching

RESTRICTIONS

- Vendor libraries source files shouldn't be touched at all
- No need to use any of build systems (grunt, gulp, webpack)
- Adding **task/** folder is forbidden. Do not push it to repository. (Only **homework/** folder should be pushed)

BEFORE SUBMIT

- Code should be clean, readable, and tested
- Check 'Network' tab to be sure that all performance improvements work properly
- Using Chrome, open 'Lighthouse' tab in Developer tools menu. Run 'Generate report'. Score should be not less than **70**. Use settings:
  - Device – Desktop
  - Categories – Performance
- Make sure your GitLab folder structure meets folder structure from this document (without **task** folder)
- Fix all issues which was found by w3org Markup Validation Service (https://validator.w3.org/)

SUBMIT

- The **FL18_HW5** folder without **task** folder should be uploaded to GitLab repository "**FL-18**" into **main** branch.