Lezione00-Introduction to the course (prof. Corno)

Sunday, February 28, 2021 8:06 PM

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2021

Applicazioni Web I
Web Applications I

Introduction to the course

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Goal

- Understanding web architectures
- Understanding and mastering web application design and development
- Gaining in-depth knowledge of the JavaScript language and ecosystem
- Becoming familiar with one of the most popular JavaScript frameworks (React)
- …with special focus on the front-end

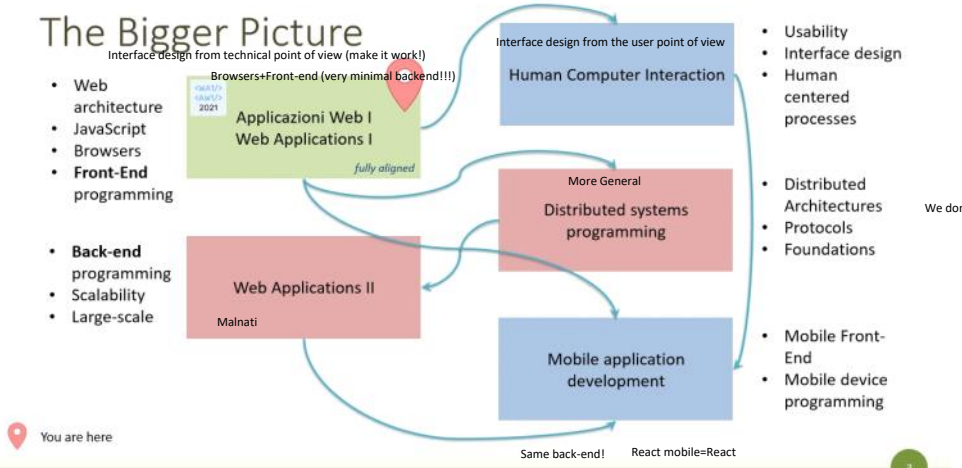
Approach design and development of webapps

Basic of language, how it is used in client side and server side

Facebook popularized react

Not a course on React! Only basic javascript+ framework to make life easier!

The Bigger Picture



We don't solve distributed synchronization problems (common editable page)

What We Will Learn

Rich modern strange language
Different programming experience

Forms, validations, not full web design

1 page with js code to create all elements
Node interpreter+js for backend

>50% + exam
Find problem but use React to solve it instead of solving them in js first

JavaScript as a language	The browser ecosystem	Single Page Applications	React framework
• ECMAScript ES6 • Language constructs • In-depth semantics • Functional, Asynchronous, Modular, …	• HTML, CSS, page structure • DOM • JavaScript in the browser • Events, Properties, Handlers, APIs	• Server-side (bare minimum) with node • API development • Backend storage • Sessions and Authentication	• Components, Properties, State • JSX • Hooks • Router

10 years ago->jQuery
2-3 years ago -> Angular was dominant framework, but we will understand browser and language so we will be able to adapt!

(Js set of coordinated library that will be used together to have a way(principles) of programming the system)

No real-time application/highly dynamic/videogames
Form based application (eCommerce) -> validate, filter, data to input, sort data

Weeks and Calendar… At a Glance!

1. Intro to JS: basics, objects, functions
2. Intro to JS: async programming, callbacks, DB interaction + Intro to Web
3. HTML, CSS, Bootstrap
4. JS: classes, modules, this + JS in the browser
5. Intro to React
6. React: props and state
7. React: context, life cycle, forms
8. React router
9. Server-side with Express
10. Fetch and client-server interaction (in React)
11. Authentication

Exam preparation

Course Organization

- Classes
  - 3 h/week
  - Lectures + Exercises (*mixed*)
- Laboratories (Online + LABINF)
  - 1.5 h/week
  - 3 Lab groups (A-K/L-Z + Online)
  - 3 Labs + 2 BigLabs, starting 3rd week
- **Exception**: first 2 weeks:
  - Class instead of Lab

	MO	TU	WE	TH	FR
08:30				Online	
10:00				Online	
11:30					
13:00	Online A-K				
14:30	LABINF				
16:00	Online L-Z				
17:30					

No recording of labs!
Questions on slack!

Classes

- On-line
- Using Zoom
  - Link valid for all the lectures
  - https://polito-it.zoom.us/j/91605611268?pwd=WjIxNGJ4T2Vla3oyWkc0VUMxTnZBUT09
- During the lectures, comments and questions will be handled in a dedicated Slack channel
  - #live-lecture

Laboratories

- Starting 15/03/2021
- Text online, some days in advance
- Exercises to be done during Lab hours
- Solution will be posted on GitHub
  - around 1 week after the end of each lab

Do labs before! Real time support for labs! Useful!

Laboratories

Keep pace!

- In (fixed) group
  - 3-4 people (Or by myself)
  - you decide the team
  - fill this out with your group composition: https://forms.gle/8nJ2G4zTgdnJCMot8 before March 14
- 3 Labs, each 1.5 hourslong
- 2 BigLabs, each 6 hours long (4 weeks) 6-9 9-12
  - if submitted, each BigLab gives up to +1 point to the exam
  - evaluated as a group
  - detailed instructions will follow

Online Labs

- Connection over Zoom
- Each group will enter a Zoom room
  - May work together
- Teachers will enter the rooms
  - When students request help
  - For a quick check

Learning Material

- Course website – http://bit.ly/polito-wa1
  - Slides (in English)
  - Full schedule
  - Links and supplementary material
- Video lectures (screencasts)
  - YouTube - https://youtube.com/playlist?list=PLqRTLIwsxDL9vSKdXgAm-_LMHl-AoK7ET
  - Portale della Didattica
- GitHub - https://github.com/polito-WA1-AW1-2021
  - Examples, exercises, labs, exams, …

Slack

- We will use Slack for all communications
  - among students, with teachers, etc.
  - new to Slack? -> https://slack.com/resources/using-slack/how-to-use-slack
- Join with your @studenti.polito.it email at https://join.slack.com/t/wa1-2021/signup
- During the lectures, comments and questions will be handled in the **#live-lecture** channel
  - not in the Zoom chat
- Announcements and official information in **#general**
- Feel free to contact the teachers for feedback and questions in **#discussion**

About the Exam

1. Project development
   - Individual
   - up to 24 points (minimum: 12)
   - 20 days of time

Submit the day before the exam

2. Oral discussion (on the project)
   - individual and mandatory
   - up to 6 points

No theoretical questions, explain project (in english) (know what's happening and your design choices)
(4 if unsure, 5 to everybody, 6 to best students)

3. BigLabs evaluation
   - *optional* (i.e., if submitted as a group)
   - up to 2 points -> the only way to get 30L

(32 total points)

Full exam rules in the course website (under "Exams")

Project Development

What

- Develop a web application using
  - React + JavaScript
  - Node + Express
  - SQLite
- According to a functional specification
  - published 20 days before each official exam date

Only what the website will do
How to organize it, classes, components will be decided by us!

How

- Individually (i.e., not in group)
- Using GitHub Classroom
  - commit + push your project
- Teacher's Evaluation
  - running the application on a clean Ubuntu 20.10 (with node)
  - examining the code

Fork empty version of project and push and commit all versions until the final one (add final tag)!
We can use personal github account because classroom will link it to our student id

Functionality test+code examination

Only constraint for interoperability between different operating system is to be consistent with directory capitalization (import 'Abc' fails in linux if folder is called ABC)

Oral Discussion

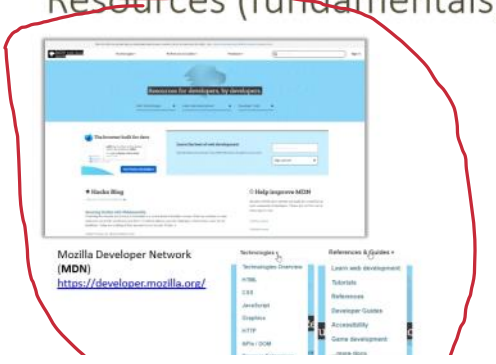
Goals

- To ensure that each student developed the web application by themselves
- To evaluate how much the student can explain the exact behaviour of the code

Evaluation Criteria

- Theoretical and practical knowledge of the project design
- Theoretical and practical knowledge of the project code base
- Readiness and clarity in the replies

Resources (fundamentals)



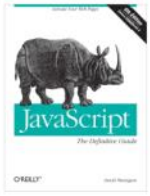
Mozilla Developer Network
(**MDN**)
https://developer.mozilla.org/

React Library
https://reactjs.org/

Defounded from mozilla foundation ;(

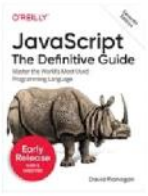
documentation

Resources (books)



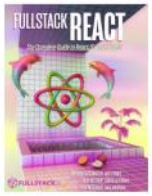
JavaScript: The Definitive Guide,
6th Edition
By David Flanagan
ISBN 978-0596805524
Release Date: May 2011
(not very updated...)

Old!



JavaScript: The Definitive Guide,
7th Edition
By David Flanagan
ISBN 978-1491952023
Release Date: July 2020

Modern



Fullstack React
By Anthony Accomazzo, Nate Murray, Ari Lerner, Clay Allsopp, David Guttman, and Tyler McGinnis
https://www.newline.co/fullstack-react
Release: r40 (January 2020)

... and many others

Resources (on-line books)

Useful online material for learning fundamentals: higher than beginner level, lower than nerdy specific details

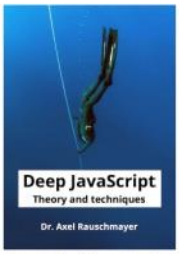
You Don't Know JS Yet (book series) - 2nd Edition
By Kyle Simpson (@getify)
https://github.com/getify/You-Dont-Know-JS

Flavio Copes Handbooks
https://flaviocopes.com/

Resources (on-line books)

https://exploringjs.com/impatient-js/index.html

+



https://exploringjs.com/deep-js/index.html

http://speakingjs.com/

More resources...

The Modern JavaScript Tutorial
https://javascript.info/

tutorials

DevDocs: API Documentation Browser
https://devdocs.io/

Documentation for css,js, react in a single searchable engine

... and many others

Tools

Node.js runtime
Version 14.15 LTS
https://nodejs.org/en/

Install on Linux using the instructions on
https://github.com/nodesource/distributions

React Developer Tools
Extension for Chrome and Firefox

Debugging (developed by facebook)

Programming Environment

Visual Studio Code
https://code.visualstudio.com/

Github integration?

Jetbrains WebStorm

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