UNIVERSITÄT LUZERN

App Development

Tutor	Stefano Balietti, University of Mannheim and University of Heidelberg University
Organization	Digital Skills, University of Lucerne
Language	English
ECTS-Points	2
Contact	nadia.buehler@unilu.ch
Dates and time	May 11/12/19/20 from 12PM-16PM
Content	**Description** **Goal** The goal of this workshop is to get a good overview of the broad and evolving array of web technologies. Participants of this course will acquire the necessary knowledge to develop a small app (so to say "full stack"). Possible projects include (roughly in order of complexity): - A Chrome-based browser extension (https://developer.chrome.com/extensions), - A web app in Node.JS (e.g., with the Express framework https://expressjs.com/), - A game theory experiment with the nodeGame platform (https://nodegame.org), - A mobile app with the Ionic Framework (https://ionicframework.com/). **Format** Fully virtual with frontal lectures, videos, and exercises/materials. A group discussion channel will be created for questions and requests outside of the teaching schedule.

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Tentative Schedule

Schedule subject to change based on interest and knowledge of participants.
Students may decide to focus on a subset of the material, according to their own interest.

Prior to the beginning of the course (if needed)

- JavaScript/GitHub/Text Editor refresher,
- Developing environment checkup.

May 11th

- Node.JS and NPM,
- The golden triad of web development: HTML, CSS, and JavaScript.
- Asynchronous code in JavaScript,
- REST API calls

May 12th
- Introduction to Web frameworks: JQuery, Twitter Bootstrap.
- Overview of single-page application frameworks: do I need one? How to choose one.
- A simple web app with Express JS.
- Nginx / advanced Express JS.

May 19th
- Hosting: how to choose the right one.
- Storing and retrieving data from a MongoDB database.
- Properly encrypting and hashing sensitive data.
- Introduction to the Ionic Framework / Apache Cordova for mobile apps.
- Introduction to the nodeGame framework for behavioral research.

May 20th
- Introduction to Chrome-based browser extensions.
- Introduction to Progressive Web Apps (PWA)

Targeted material and exercises, custom support for students.
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Prerequisites/ Materials
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Requirements
This workshop follows the course on Introduction to Computer Programming for App Development, therefore some basic
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	programming knowledge is expected.
	The main language of this course is JavaScript, one of the most popular languages, currently the top language on GitHub (https://github.com/) for pull requests. Students with prior knowledge in a different programming language are welcome to join. Some knowledge of git/Github and familiarity with a modern text editor (e.g., Atom or Visual Studio) is also expected.
	Before the beginning of this course:
	- a short JavaScript/Git refresher will be offered for those in need,
	materials (video and or slides) will be provided to setup the programming environment.