

Enhancing Web programming learning through mobile eCommerce paradigms

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We focus on Web Design and programming learning techniques through the use of educational web app tailored to introduce learners in a co-working and project based style. To enhance the learning curve the class is organized as a web farm of an online shopping center in which student mimics a real marketplace playing with eduAPP designed for shops and agencies devoted to Campus University and young student needs (eduCommerce). To discuss this framework we describe the organization and example of eduAPP and eduCommerce in the context of Young Tourism in Rome and its surroundings (Castelli Romani).

1. Introduzione

Nowadays Web programming learning requires new models of interaction and the jointly use of a plethora of different technologies [Ally, 2005], developed in close synergy with business and labor policies [Sidman e Jones, 2007]. For example, the strategy of adopting mainly power point slides [Mungay e Jones, 2003] is not suitable for the study of the e-commerce web programming because they require too much time for writing, and overall, the testing phase requires the use of other software platforms.

Therefore, there is a need to maximize the use of stimulating and creative platforms of exchanging information [Beynon, 2007] that effectively utilize advanced technology and learning instruments to meet students' needs for understanding content [Angelaccio e Buttarazzi, 2011].

To achieve this issue we propose a programming learning technique through the use of educational web app, called eduAPP, tailored to introduce learners in a co-working and project based style, in line with the new learning paradigms.

Furthermore, to enhance the learning curve we propose to organize the class as a web farm of an online shopping center, where learning groups are

able to play with eduAPPS, designed for shops and agencies devoted to Campus University and young student needs (eduCommerce), simulating a real marketplace. To discuss this advanced learning framework we describe the organization and example of eduAPP and eduCommerce in the context of Young Tourism in Rome and its surroundings (Castelli Romani).

The paper is organised as follows: Section II introduces “eduCommerce class organization” the proposed learning approach and the main features of webAPP. Section III shows an application example called “Tor Vergata Young Tourism”. Section IV concludes the paper and discusses the future work.

2. Class eduCommerce organization

To reach a true active learning methodology we organize the courses by following a webapp lab approach in which students cooperate and organize working groups devoted to design online shops/agencies starting from webapp templates. The working/learning scenario is similar to local commercial centre in which learning task are conducted as a marketing activity “in little”. The aim is to enhance project based learning and cooperation.

The class organization is based on the idea to integrate slides, links and other teaching material (API documentation, wikibooks, etc.) with running examples embedd into a WebAPP used as a learning demo and project activity support. In addition this could be inserted in a joint course with senior students applied to BACK END part of the online shops.

The overall organization is outlined in Fig.1.

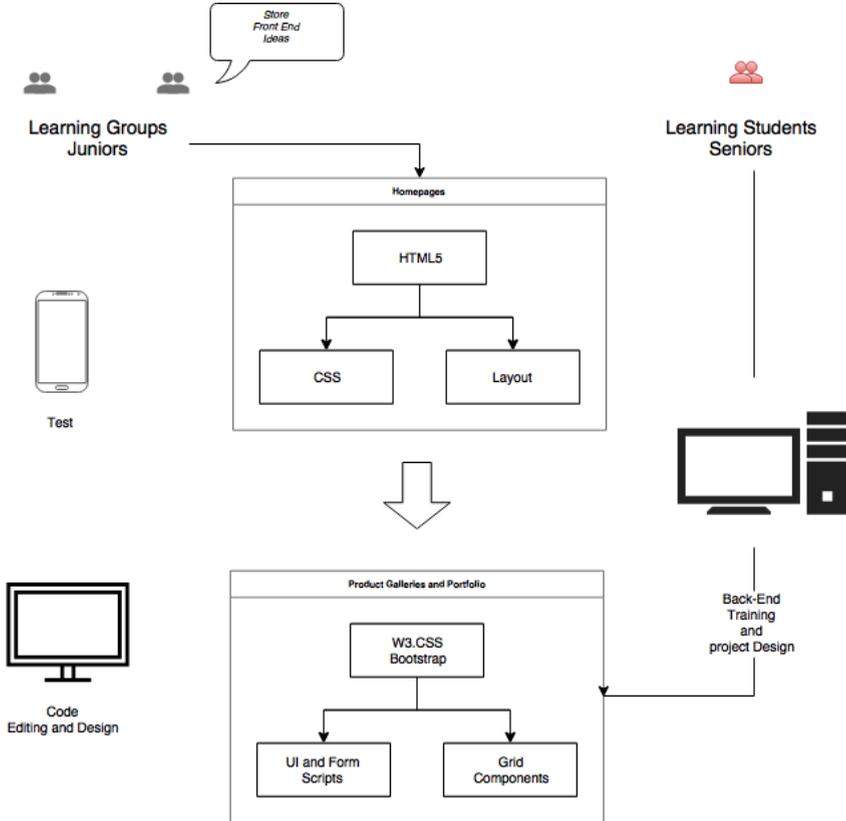


Fig.1 – eduCommerce Class organization

2.1 Definition of eduAPP

To obtain a general educational schema in place of traditional documents we make use of a special type of web App for learning named eduAPP.

An eduAPP is an app template that could be used to describe a set of learning cases sharing a set of examples.

Fig. 2 shows the generic idea of eduAPP obtained as a mobile learning template working similar to web running examples used in popular educational sites like w3Schools.com.

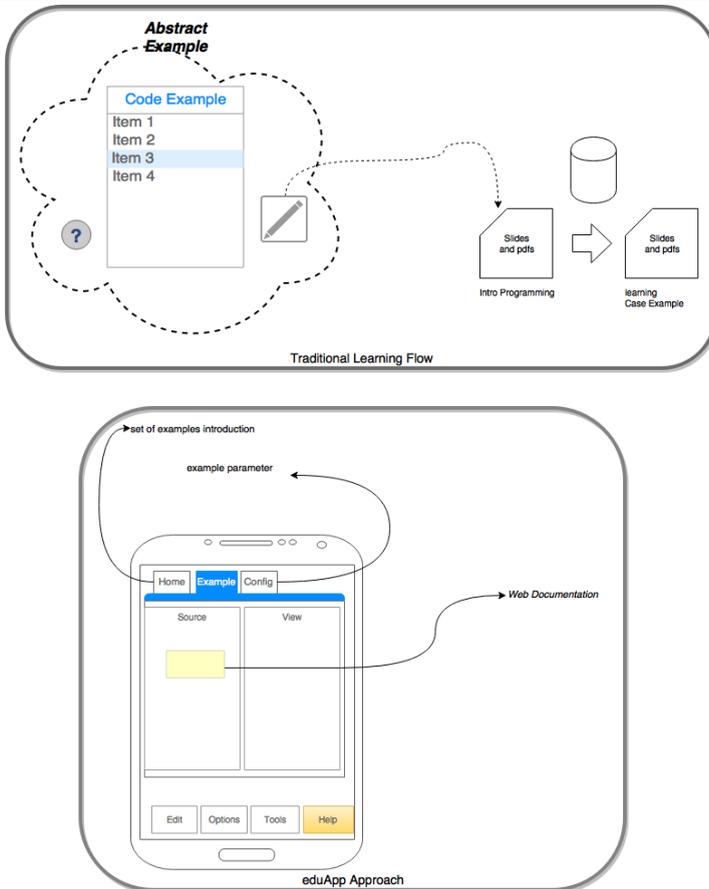


Fig.2 – eduApp Definition

While traditional learning flow process is strongly based on slides focusing on theoretical issues and practical examples, eduAPP, instead, integrates code lab and mobile e-book in a unique app working as multi-purpose learning app.

In the case of ecommerce this will be particular easy to manage due to the fact that we can assign task in accord to the target shopping idea. As example we make use of a Starter Web app for products or services (eduAPP-Vetrina) in which we have:

- Home landing page of the shop
- Nav-bar for navigating to configuration pages
- Communication-group tool for mobile social network in the class

3. “Tor Vergata Young Tourism” eduCommerce example

The eduCommerce organization has been applied in the context of two joint courses held in our University of Rome Tor Vergata: Fondamenti d’Informatica (Introduction to Programming) and Sistemi Informativi Web (Web Information Systems). In this way different classes cooperate by choosing different web level architecture (FRONT END for junior and BACK END for senior). Through the use of eduAPP designed at different level of complexity students, while gradually learn basics of web, are engaged in ecommerce project design.

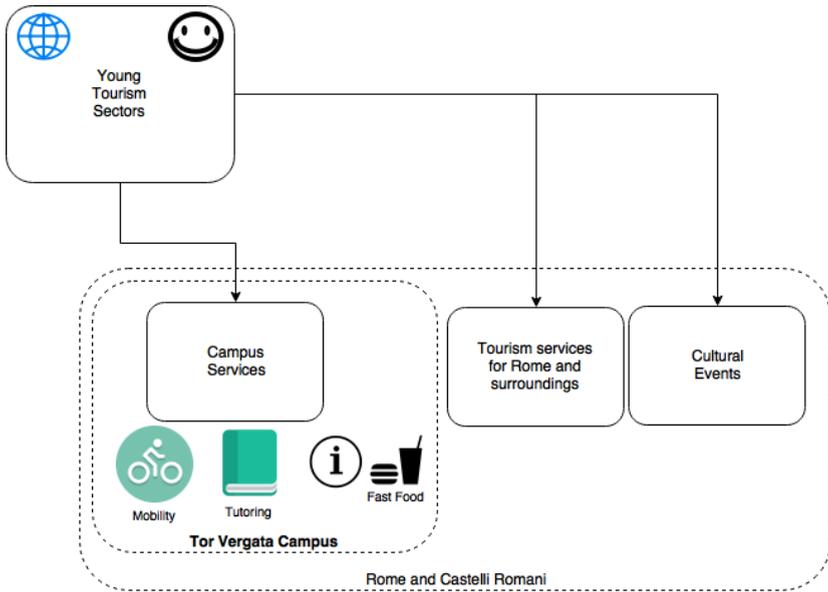


Fig.3 – Young Tourism sectors in Tor Vergata example

The Web lab has been launched at the beginning of the course (March 2016), and now it is in progress. However, a preliminary attempt towards this idea has been experimented last year as web lab organized for touristic agencies related to slow tourism. This experiment was organized in order to apply web concepts and the use of web gis tools for training students to learn google API and Leafletjs API. For each project group it was assigned a trip around Rome related to “Vie Francigene SUD” and students have autonomously carried out photos and walking trips by designing a map based web site of the trip.



Fig.4 – An example of Young Tourism eduCommerce for “Vie Francigene SUD” held at Tor Vergata University of Rome in 2015 Spring Course “Fondamenti Programmazione Web”

4. Conclusions

In this paper we have introduced eduAPP, a mobile app for Enhancing Web programming learning through mobile eCommerce paradigms to learn web programming (shops and agencies model) devoted to Campus University and young student (eduCommerce). We have focused on Web Design and programming learning techniques through the use of educational web app tailored to introduce learners in a co-working and project based style.

To enhance the learning curve the class has been organized as a web farm of an online shopping center in which students mimic a real marketplace playing with eduAPP.

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