Assignment #03

IT University of Copenhagen (ITU)
User Experience og Webprogrammering, BSc (UEWP)
(Spring 2022)

Deadline: May 03, 2022 at 23:59

Purpose The mandatory assignment (Assignment #03) aims to implement new functionalities to your "Café Analog" website, including integrating it with a Google Firebase project (i.e., a login system) and a payment system based on a fake currency. In the previous mandatory assignment, you have developed a responsive website for ordering products in Analog (ITU's coffee bar) based on the "mobile first" principle. Probably, you have designed a website with (at least) four pages: 1) login, 2) order, 3) receipt, and 4) pickup.

For Assignment #03, you will upgrade the website by implementing a login system using Google Authentication and/or Facebook Auth and simulating a payment system using fake credit cards. You are free to design the user interface as you like. It may be completely different from the user interface you have implemented in the previous assignment. You can also implement your solution by scratch (i.e., using "vanilla" JavaScript) or using a web framework of your preference.

Functionality and User Interface The cornerstone of the Café Analog website is to manage the orders of multiple users based on individual app accounts. Your website must be safe enough to allow users to pay their bills using only the credit available in their accounts. These are the functionalities you must implement on your website during this assignment:

- Google Firebase provides a simple, free multi-platform sign-in system called Firebase Authentication. You must integrate your website with a *backend* from the Google Firebase to authenticate users via the authentication provider of your preference (e.g., Google Sign-In, Email/Password, Phone Number, Facebook Auth, among others).
- You must simulate a payment system that allows authenticated users to pay their orders via a fake currency. The users will use a fake credit card, MobilePay, or cryptocurrency to pay their bills. You are free to define how to add credits to the users' accounts, e.g.:
    1. The users can add credits manually on their account profile page.
    2. The users receive a credit of $100 every time they sign in the system.
    3. A credit based on timestamp, among others.

Your solution must authenticate users via Firebase Authentication and pay the orders via a fake payment system. However, you are allowed to implement further features, such as using a database (e.g., Firebase Realtime or Cloud Firestore) to manage the users of your website, using a *bucket* (e.g., Firebase Storage) to share multimedia data between multiple users, deploy your web app on Firebase Hosting, among others. In the case of adding an extra feature, you must describe it in detail in the PDF document (see Documentation section).

Programming Languages By default, you must develop your project using `HTML5`, `CSS`, and `JavaScript`. However, you can be allowed to implement your Café Analog website using another web programming language or web API/Framework. You must have a formal agreement with Fabricio (by e-mail – narcizo[at]itu[dot]dk) before implementing your project.

Due date The mandatory assignment must be handed in before Tuesday, 03 May 2022 (23:59) via learnIT.

Grading Your assignment will be evaluated by the teacher/TA's, and you will get some feedback, including APPROVED/NOT APPROVED grade.

Team Work You can develop the Café Analog website individually or in a group (we recommend working in groups – preferably 2, max. 3 students). If you submit your solution as a group, remember to mention all group members at the top of the PDF file. We strongly recommend you to work with the same group as in Assignment #02.

Submission Information Your submission must consist of two parts: (i) *Code*; and (ii) *Documentation*.

Code You MUST submit a complete web project directory with a functional website. The entire project must be packed as **a single zip file** with the name `WXYZ_solution.zip` (which `WXYZ` is the ITU's account of one of the group members, e.g., `fabn_solution.zip`). It is essential to write a `README` file with all instructions to install and execute your project locally in our machines.

Documentation You MUST submit a report (in PDF format) explaining your solution. The document MUST be maximum 4 (four) pages and contain these sections:

- Most important *design choices*, including functionality and user interface;
- Short *user guide*;
- *Problems* with your website (if there are any), e.g., if something does not work as you want;
- Detailed information (theoretical and technical) about the additional functionalities you have implemented in your Café Analog website;

- Comparing the components available in the final version of your website with the prototype planned in Assignment #02.

Design Choices It would be best to describe your design choices related to the user interface and functionalities. For example, what alternatives did you consider, and why do you prefer the solution you ended up using. Here are some examples of design choices:

- The layout of the user interface and how it is implemented (using HTML, CSS and JavaScript or using a web framework);
- Details of authentication providers used by your application;
- Diagrams to show the overall structure of your website;
- How the essential functionalities work (sign-in, sign-up, sign-out, ordering a coffee, paying a bill, among others).