Exercise Sheet 1

(Web-Shop - Preparations and HTML)

Submission until: 03./06.11.2024 23:59h **Presentation:** 04./07.11.2024

Introduction and Preparation

The aim of the practical course in this semester is to implement a web shop consisting of frontend and backend. The full implementation will be done during the semester. You will use different web technologies for it, i.e., HTML, CSS, JavaScript, PHP, and MySQL.

In this task sheet you will primarily focus on conceptual preparations and the development of your first HTML pages for the web shop. In particular, at least the following pages should be included in the structure.

- **index.html**: A welcome homepage. This page appears when the URL of the web shop has been requested. This page contains the general information of the web shop and important links to subpages, i.e., product categories, customer's area, and information about the seller.
- **<categoryName>LIst.html**: Products category page. This page is a presentation of all available products in the selected category.
- **<product_id>.html:** This is the product presentation page containing the name, picture, price and further important information.
- **login.html:** This is the login page to enter the individual customer's area.
- **registration.html:** This is the registration page to create a new user account.
- **logout.html:** This is the logout page that will be shown after leaving the customers area.
- **customer.html:** The main page of the customer's profile. It contains its personal information, recent orders, and the options to unregister and logout.
- **shoppingCart.html:** This page contains all selected items for the purchase. It is empty at the beginning.
- **about.html:** Sellers information website. This page contains the general information including the phone number and address of the web shop owner.

For implementation tasks you should use a simple editor of your choice. A good recommendation is to use **Notepad++** (https://notepad-plus-plus.org/) which has many helpful features.

It is recommended to separate the tasks in subtasks but remember that all team members must be prepared to explain all team solutions in the presentation sessions.

In this exercise sheet you don't need CSS, PHP, JS or other technologies besides HTML!

Task 1 (General questions)

1.1. Please compare the topologies star, bus, and meshed. What are the main advantages and drawbacks of those options?

1.2. What are the main differences between a circuit-switching and a packet-switching network? Please explain by using an appropriate example.

1.3. As you already know, communication on the internet is organized in layers. Please create an example sketch with four layers that considers the following situation:

- Two companies are interacting with each other by using well-defined protocols.
- The bosses are sending messages via their administrative employees.
- However, before the administration passes the messages to the postal carrier, a lawyer checks, if compliance rules are considered.
- Compliance checks will also be done before passing a received message to the boss.

Note: don't forget to name the protocols that are used on different layers.

Task 2 (Conceptual Model)

In this task you should develop a structural workflow model of your website. Start first by defining a topic for your web-shop, e.g., clothes, vegetables, electronic etc. It must be possible to find at least two categories and two sub-categories for each category.

Please use pages as nodes and page changes as edges. Write down the interactions for page changes at the edges, e.g., "enter login information", "logout", "register", "show a category or product" etc. You don't need to consider concrete categories in this task – keep it abstract at this point (e.g., show category instead of show shoes).

Try to find all important interactions that are relevant for this example and check their correctness. It should not be possible to result in deadlock situations!

Task 3 (index.html)

This main homepage must contain all starting options to use the website. You will need a small menu of links containing at least two different categories, the login to the customer area, and a link to the seller information. The functionality must not be implemented yet, you can just include relative links to the expected HTML files.

Define at least two different categories that are matching the topic of your website (e.g., shoes) and two sub-categories for each (e.g., sneaker). Use relative links to category pages (that don't exist yet!). Use the following pattern: **<categoryName>LIst.html → shoesList.html, sneakerList.html**

Task 4 (login.html)

Implement a view for users' login. The corresponding form should offer two input options. With the first input the username should be requested while the second input requests a valid password from the user. Each field should be displayed in a line with a corresponding label.

In addition, two buttons are necessary. The first button navigates to the registration form (registration.html) and the second button should send the entered values to the server. The server may check the input (not in this exercise sheet!).

Task 5 (registration.html)

If the user is not yet registered, a registration form should be used to create a user account. The form should offer three input options. With the first entry, the username should be entered, the second and the third entries, the password and the confirmation of the password should be requested.

Each field should be displayed in a line with the corresponding label. In addition, two buttons are to be created. The first button should give the option to cancel the input and navigate back to the login form. The second button allows to send the entered values to the server.

The server may check the input (not in this exercise sheet!).

Task 6 (logout.html)

If the user is logged out from the users area, a simple view is required for confirmation. This view shows a message that the user is logged out and gives a link to navigate to the login page (**login.html**) or to the main page (**index.html**). You can also add a figure if you like.

Task 7 (customer.html)

The personal information of each user is shown in the users area and can be updated. At this stage only the username is presented and the current password. Both are presented in form fields in order to allow to change them.

As the functionality is not implemented yet and the user data is not available, please use sample data to develop this page as an example.

Task 8 (about.html)

Implement a simple information page for sellers data.

Task 9 (<categoryName>List.html)

In this task you should implement a sequential list of products from a certain category/subcategory, e.g., list shoes or list of sneakers. It is up to you how you want to present the product in a list. You can use a small picture and a short description text, you can use a price etc. It is important that there must be a link to the products detailed information. When you click on the link, the product page (**<product_id>.html**) must be opened.

Task 10 (<product_id>.html)

In this last task you must implement the pages for the products that you have. Each product must have an individual page with detailed information. In this task it is sufficient, if you implement a product's page for one example product of your web-shop, e.g., sneakerMax203.

It is up to you what kind of information you are aiming to present in this task but you will definitely need a button to add this product to the shopping cart. The shopping cart itself will be implemented in later exercise sheets.

Submission hints:

- Upload a solution **ZIP document** containing all solution files (i.e. html and pdf).
- Please write all names of the team that participated in the solving process of this task in the PDF file.
- All team members must be present for a certificate in the following course. For a successful acceptance, the proposed solution must be explained by all team members.