Introduction to Computer Communications – Project —a website in MVC

The project – Online shop

Instructions:

1. The project must* be developed in MVC. **In addition to MVC**, you can choose to implement other web development technologies on YOUR RESPONSIBILITY but you must ask the permission from the lecturer (Alona).
2. You can develop the project in the teams of singles, pairs, thirds and fours. (The team of 4 will get an extra features to develop.
3. The project is to be presented during the dates published in Moodle (later in the course). All the partners must be present during the meeting. **All the partners will be graded separately for their part in their project.**
4. The project must be submitted till 31/03/2024 into Moodle. Only one partner should submit the project but the names of all partners must be included.
5. The delay can be granted **only** due to the sickness and military reservation service (miluim). The delay can be asked **only** via an email to the lecturer (Alona 😊) with the attachment of relevant documents.
6. Copying ANY part is strongly prohibited and will be graded by 0, all the students will stand to disciplinary committee in this case.

The online shop

You are to develop a website for managing the items/products that are for sale at the Online Shop (local host) using all the technologies taught during the lab sessions.

The user types and their permissions, respectfully: admin (managing the site) and users (buying an item and confirming the payment). Other users can be added with their permissions.
All of the types of users should get a separate page view according to their permissions.

The Online Shop is a slight version of the real Online Shop, like Amazon, Apple Store, etc., which should manage products, stocks, payments, etc.

The following is a necessary list of requirements to be implemented in the project.
You are responsible of taking care of other possible constraints (e.g., different users are simultaneously trying to buy the same product and this product is the last one while browsing the site from the same localhost, etc.). All the constraints, which does not meet requirements, must give a relative error message.

The following requirements are general for any online store but the examples will be given to the Online Bookstore 😊.

LAB part: Admin (can be managed in database) is responsible for:

- adding/removing products
- managing the prices
- managing the stock available – if there is no product left in the storage, the admin must order it from the warehouse. For example, if someone bought the last book of “Harry Potter and the Half-Blood Prince” and it is of a huge demand, the admin is responsible to order more copies of the book.
- managing the product position in the store (e.g., where each book is located: fiction, non-fiction, best-sellers sections, etc.)
- etc.

Lab part: Users can:

- choose a product according to its full name, product number and the related words (e.g., you can search for “Harry Potter” (and all the books in the series will be displayed and related to them)
- buy a product in stock
- order a book that is not available by pressing “the notify” button. In this case the buyer will be notified that the product is available for sale.
- change a product (or amount of products) till the booking (that is, after the product is chosen and payment is processed, the product cannot be changed).
- Make a payment
- Etc.

Course project: Product gallery:

- has a list of products with their image, release date, price and category in which they are placed.
- has an age limitation
- has an option of filtering (e.g., fiction, non-fiction, etc.)
- a product list can be ordered according to
    - price increase
    - price decrease
    - most popular
    - category
- Users can choose a product of a specific date/category/price range
- Products list can be filtered to show only items with the decreased price (on sale)
- Different products can be shown in different formats (e.g., hardback, soft cover, etc.)
- Products must be shown with two buttons: “place in the shopping cart”, “buy now”. In case the product is unavailable, there must be a “notify when in stock” button.
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Course project part - Buying a product:

- Users can choose a specific product that MUST be available to buy
- There is an option of the shopping cart where a user can place a product he chose.
- The payment may be processed from the shopping cart or directly from the gallery of products.
- Show availability of the product (how many products there are in stock).
- A product can be changed only before pressing “confirm” button in payment section.
- It’s impossible to choose an unavailable product.
- Registered/unregistered users can buy a product. But pay attention that a registered user may have some options, like tracking the shipping.

- If a product has a price decrease, show the ~~strikethrough previous price~~, and a new price.

Course project part - Payment:

- Managing a shopping cart
- Processing a payment (using SSL certificate – there are free ones online – is a **bonus (up to 5 points) but a MUST for a team of 4**)
- **No** real credit card must be stored in the database. **Bonus (up to 7 points) but a MUST for a team of 4:** storing a credit card in the database encrypted, using AES encryption.
- **Bonus (up to 8 points):** the ability to pay with a PayPal (redirection to a PayPal site using its API)
- The user can choose to enter a book to a shopping cart and process the payment from it or pay directly
- Show notification message after the payment is accepted or failed. After that, a user is redirected to Home page.

All data must be managed in the Database according to the user permission. For any violation, the points will be taken.

Note: You are responsible of other logical constraints as stated before!

Good Luck!!