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# Project Brief 2

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Computer Science Team Project

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A business owner approaches your newly formed team asking you to build them an e-commerce platform to sell its products. Their business has grown rapidly over the last few years, and their current solution is clunky and slow. They would like a new e-commerce platform with a Java backend that can be used to manage their inventory of products, and the incoming and outgoing orders. The inventory management system will help the business manage and view their stock to better meet customer demand and avoid the expense of overstock or loss of business with stock outs. To achieve this, they need a database that can manage their list of items, customers and other users of the system etc., and also want you to host their solution for them. You may use any hosting solution you wish, but it is recommended you use the university server provided.

The business (of which you must decide on the name, vision, and product line) requires at least:

1. A home page;
2. A page to display the products that the company sells;
3. A page to display the user's current basket;
4. An "About Us" page (or similarly named) to state the vision of the business;
5. A page with contact details for the business;
6. A page to sign up to use the website, or log in if they already have an account.

This also gives rise to the following requirements:

1. The website must be hosted online, and must always be in a functional state;
2. The company must have a brand including logo, colour scheme, consistent font, etc. (consider this in the design phase of your project);
3. Customers must be able to access their basket at any time;
4. Customers must be able to place an order, which submits their basket and registers it as an order in the database, along with the total price (it is NOT necessary to include any method of payment, either by taking details or through online payment systems);
5. There must be at least five different categories of products listed within the platform, with each category having at least five different products listed;
6. The products page must include a way to filter the products, depending on the category or other filters;
7. The home page must display the categories of products, and clicking one of these categories will take the user to the products page which will only display that category of products;
8. There must be at least three types of user who each have a different view of the website and the functionality available to them – an admin, an employee, and a customer:
  - (a) Admins must have a way to add products to the inventory through the java application, including the image for the product, the name, a description, and an initial stock level;
  - (b) Employees must be able to check the stock level for products, update the stock level for individual products, and manage orders (i.e., mark as processed, or mark as shipped);

- (c) Customers must be able to check the status of their orders, and view their past orders;
9. The inventory management system will be a Java application that is implemented in the backend of the system, to help manage website requests asynchronously. This system will be used (offline) by admin and employee user types to manage stock levels and other associated actions. The application will include several features that are essential to the business including, (but not limited to):
- (a) Inventory alert system: If an item goes out of stock, or under a specified threshold this must be automatically communicated to the user in an effective and friendly way;
  - (b) The application should be able to generate reports in real-time that will be displayed on the website about current stock levels as well as incoming and outgoing orders for all products.
  - (c) The system will allow authorized users to search, filter and view the status of selected products and orders.
  - (d) A product listing must include an image of the product, a price, a description, an indication of the stock level (either units available, or “in stock/low stock/out of stock” (where you decide the thresholds), or your own choice) and any further information if needed (such as if selling clothing or shoes, the individual sizes – which must each have a stock level tracked in the back end);
  - (e) The system will allow authorized users to initiate and process an incoming order in a friendly way. Following this entry, the stock level will be automatically updated.
  - (f) You **may** decide in your teams an additional functionality for the inventory management system, on top of the above features. **Use the creativity of your team!**

The web application must be deployed in a working state and accessible at all times. The code for the website must also be professionally managed with a version control system – GitHub/GitLab – and its use must be documented in a README file for accessibility and maintainability.

