# Project Definition Document

## Workshop: Defining the Problem, Identifying Objects, and Modeling

### Problem

We need a web system that allows users to browse and purchase components and accessories to build custom PCs, while providing store administrators with tools to manage inventory, categories, users, and orders efficiently. The system should be intuitive and accessible from both desktop and mobile browsers, enabling a smooth experience for casual tech buyers as well as experienced hardware enthusiasts.

### Overview

In the domain of technology e-commerce, users demand quick, mobile-friendly platforms that allow them to compare products, view specifications, and make confident purchase decisions. Businesses require efficient systems to keep inventories updated, manage orders, and maintain communication with customers.  
  
This project will create a responsive and scalable web application tailored for a tech store — Blak Box — offering components like graphics cards, processors, SSDs, and more. Users will have a familiar shopping experience while administrators will have a powerful dashboard for managing the platform’s content and performance.

### Background

Blak Box is a startup focused on the sale of PC components. Unlike massive online retailers, this platform aims to provide a focused catalog for users building or upgrading their custom computers. Each product (e.g., CPU, GPU, RAM) includes technical data, compatibility notes, and real-time availability.  
  
The system requires two main interfaces:  
  
- A customer interface, which supports browsing, searching, filtering, and account management.  
- An admin interface, for CRUD operations on products, category organization, order management, and access to analytics.  
  
The project avoids payment processing and delivery tracking in this phase to stay within scope. Instead, it emphasizes simplicity, control, and extendability.

### Domain Elements

The domain includes:  
  
- Users: Customers who browse and purchase.  
- Admins: Personnel who manage content and data.  
- Products: Technology items (components, peripherals, accessories).  
- Categories: Logical groupings like GPUs, CPUs, RAM.  
- Orders: Customer requests stored with status tracking.  
- Inventory: Data about product quantities and availability.  
  
Each product includes:  
  
- productID  
- name  
- description  
- price  
- categoryID  
- quantity   
  
Orders store:  
  
- orderID  
- userID  
- status  
- items[]  
- createdAt

### System Goals

- Provide a user-friendly product browsing experience.  
- Allow customers to create and manage accounts.  
- Let admins manage product inventory and categories.  
- Enable order monitoring and updates by administrators.  
- Build the platform with scalability and modularity in mind.

### Conclusion

This project lays the foundation for a specialized tech e-commerce platform. By addressing both user and administrative needs, it ensures a maintainable and extensible architecture that supports current goals while allowing future growth, such as payment integration, discount systems, and real-time inventory APIs.