Assignment Realtime Couponing

Assignment: Realtime Couponing System

Your task is to design and architect a Realtime Couponing System for an e-commerce company. The system should be able to generate and deliver personalized coupon codes to customers in real-time based on their purchase history, preferences, and behavior. The system should also track the usage and effectiveness of each coupon code.

Requirements:

* The system should be able to handle a large volume of customer data and coupon codes.
* The system should provide personalized coupon codes to each customer in real-time based on their purchase history, preferences, and behavior.
* The system should be able to track the usage and effectiveness of each coupon code.
* The system should be able to generate reports on coupon usage and effectiveness.

Non-functional Requirements:

* The system should be highly available and scalable.
* The system should be secure and protect customer data and coupon codes.

Assignment Deliverables:

* Architecture diagram showing the components and their interactions.
* Detailed design document for each component.
* High-level implementation plan including the technologies and tools to be used.
* Presentation to explain the architecture, design, and implementation plan.

Note: You can use any programming language and technology stack of your choice. Be sure to justify your choice of technology stack and highlight any trade-offs made during the design process.