# Proof of Concept

1. **Objective:** The objective of this Proof of Concept (PoC) is to demonstrate the feasibility of a personalized product recommendation system using user interactions and preferences.
2. **Overview:** The provided code implements a basic version of a personalized product recommendation system within a Streamlit web application. The PoC showcases how user interactions, such as cart additions, wish-lists, and searches, can be utilized to generate personalized product rankings. The recommendation algorithm considers user-specific tags and interactions to provide relevant product suggestions.
3. **Key Components:**

   **1.User Authentication:** The PoC utilizes Firebase authentication to allow users to sign up or log in. Users are required to verify their email addresses before gaining access.

   **2.User Interactions:** The system records user interactions, including adding products to the cart, wishlists, and search queries, in a Firebase database.

   **3.Product Data:** Product data is loaded from pickled files, which represent a simplified product dataset.

   **4.Personalized Recommendation Algorithm:**

   1. The recommendation algorithm calculates personalized product scores based on user interactions.
   2. User-specific tags from cart, wish-list, and search interactions are combined with product tags to determine relevancy.
   3. Products are ranked based on combined scores, and the top recommendations are displayed.