Stamford University Bangladesh

A Price Comparison System Exploiting the Potential of Bulk Web Scraping

Presented by
MD Fardeen Ehsan Shawon
CSE 068 07941

Dept. of Computer Science & Engineering

Supervised By,
Adnan Ferdous Ashrafi
Senior Lecturer

Overview

Introduction

Consumers face challenges in manually visiting various websites, navigating through different interfaces, and analyzing prices, resulting in a time-consuming and cumbersome process. This limits their ability to make informed purchasing decisions and find the best deals.

There is a need for a centralized price comparison system that aggregates and presents product prices from different platforms, simplifying the comparison process and empowering users with comprehensive and real-time information.

The Problems

Limited Price Transparency

Consumers face difficulty in comparing prices across multiple e-commerce platforms due to the lack of a centralized and comprehensive system for aggregating and presenting real-time product prices.

Time-Consuming Research

Manual price comparison requires users to visit numerous websites and navigate through different interfaces, resulting in a time-consuming and cumbersome process, hindering their ability to make informed purchasing decisions.

Inefficient Decision-Making

The absence of an efficient price comparison solution restricts consumers' ability to identify the best deals and obtain the most value for their money, leading to suboptimal purchasing decisions and potential financial loss.

Objective

01

Develop a centralized price comparison website that aggregates real-time product prices from various e-commerce platforms, providing consumers with a convenient platform for comparing prices and making informed purchasing decisions.

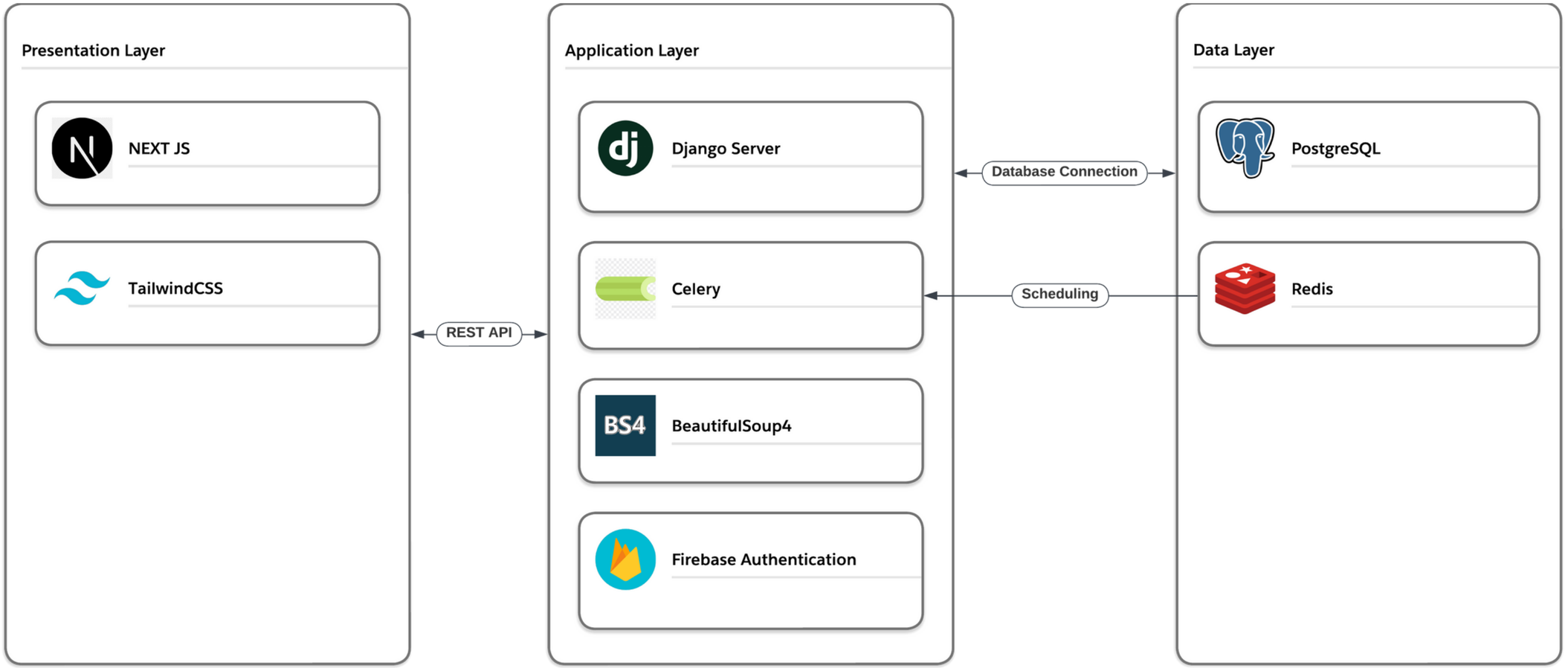
02

Enhance user experience by implementing features such as advanced search filters, product reviews, and ratings to assist users in finding the best deals, saving time, and increasing overall satisfaction.

03

Ensure scalability and reliability of the system by utilizing a three-tier architecture, implementing efficient data storage and retrieval mechanisms, and employing technologies that can handle large datasets and high user traffic.

System Architecture



System Architecture

Frontend

NextJS
ReactJS
TailwindCSS

Backend

Django
Django Rest Framework
Celery

Database

PostgreSQL
Redis

Features

01 Real-time Price Comparison

02 Advanced Search Filters

03 Product Reviews and Ratings

04 User-Friendly Interface

05 Scheduled Web Scraping

06 Secure Authentication

07 Scalability and Performance

08 Mobile Responsiveness

09 Saved Favorites and Price Alerts

10 Data Visualization

Implementation

Backend

REST API
Django
Django Rest Framework

Frontend

Next JS 13,
React JS,
Tailwind CSS

Authentication

JSON Web Tokens,
Firebase Social Auth

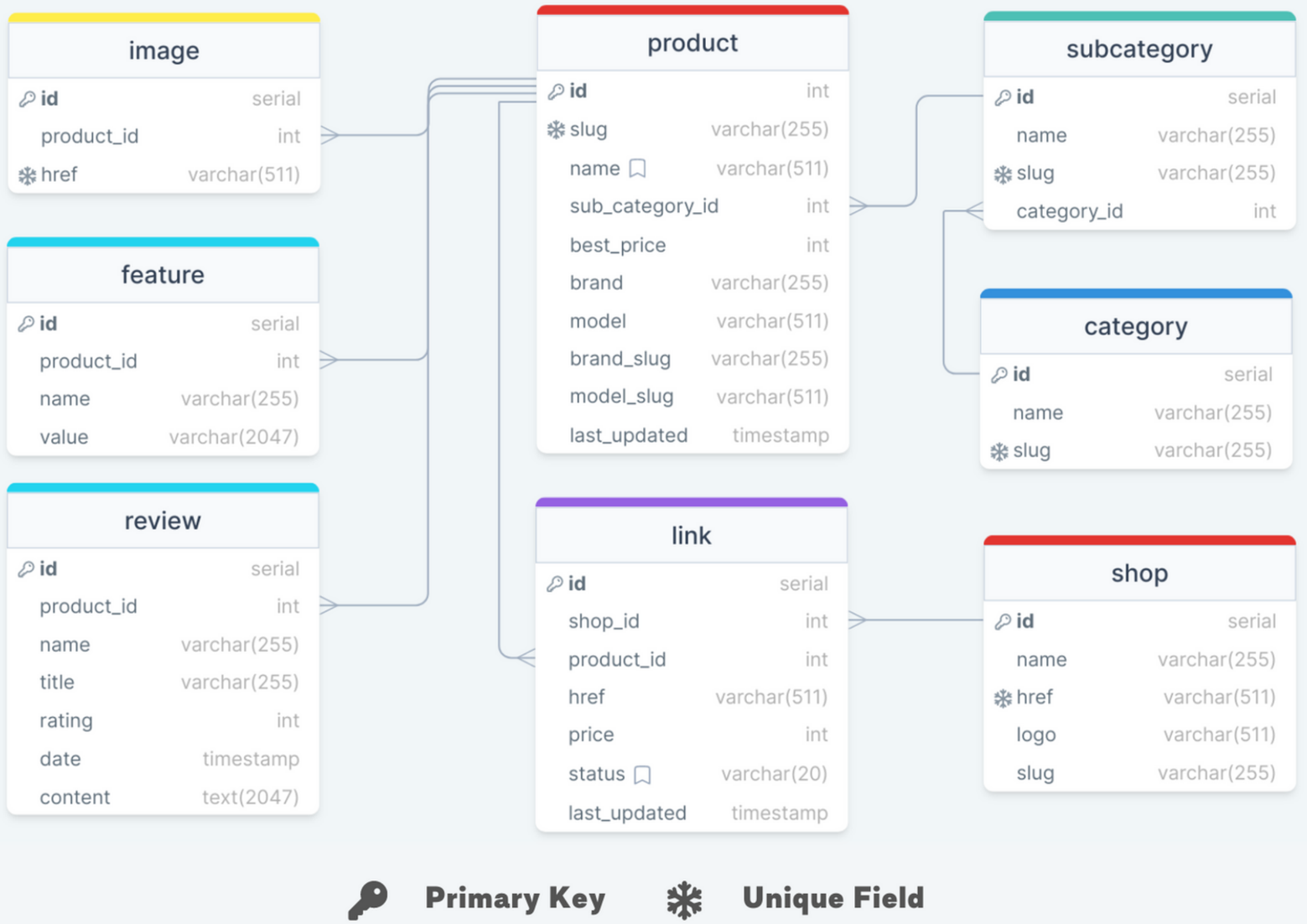
Database

PostgreSQL,
Redis

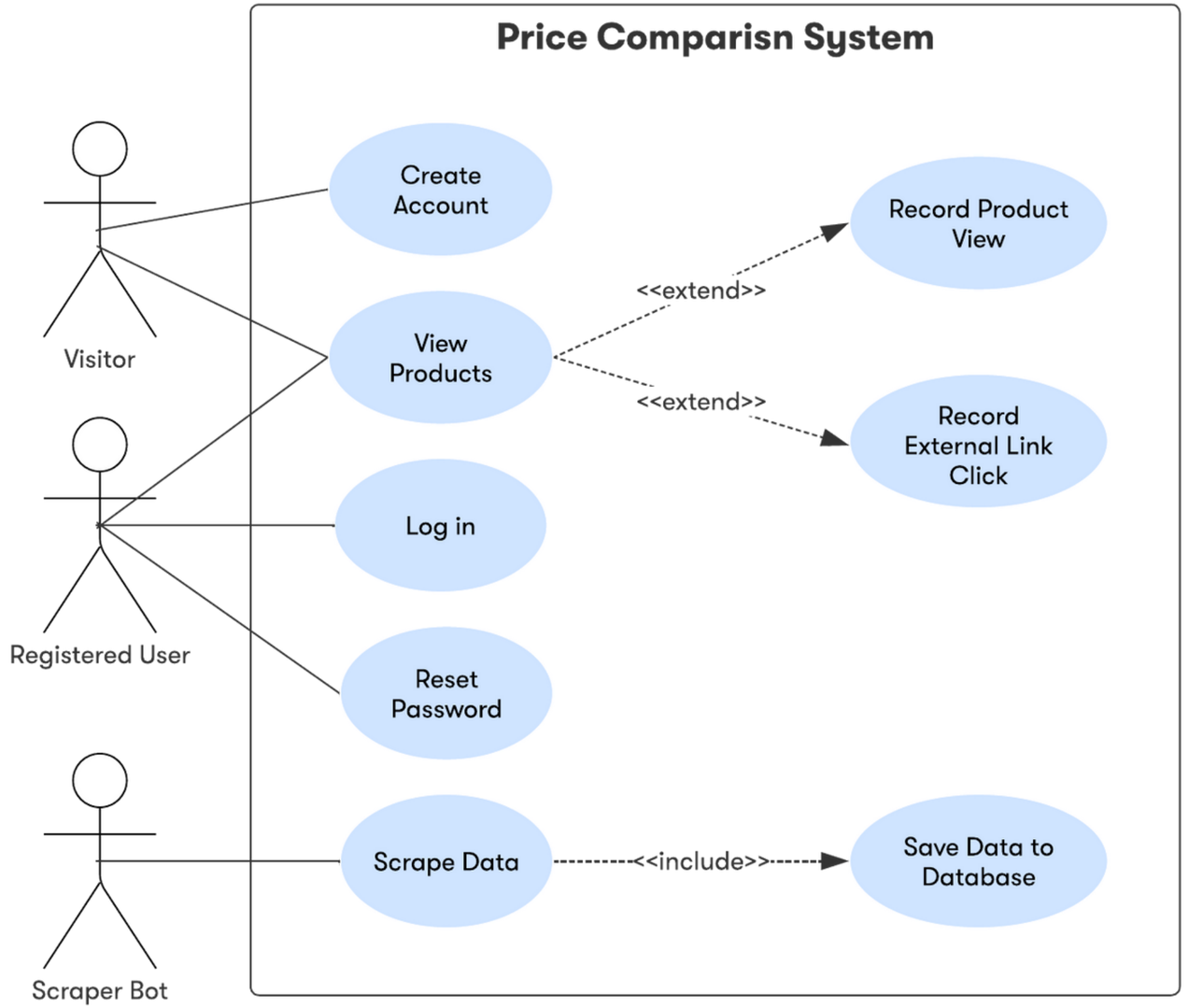
Scraper

Beautiful Soup 4
Requests
Celery

Schema Diagram

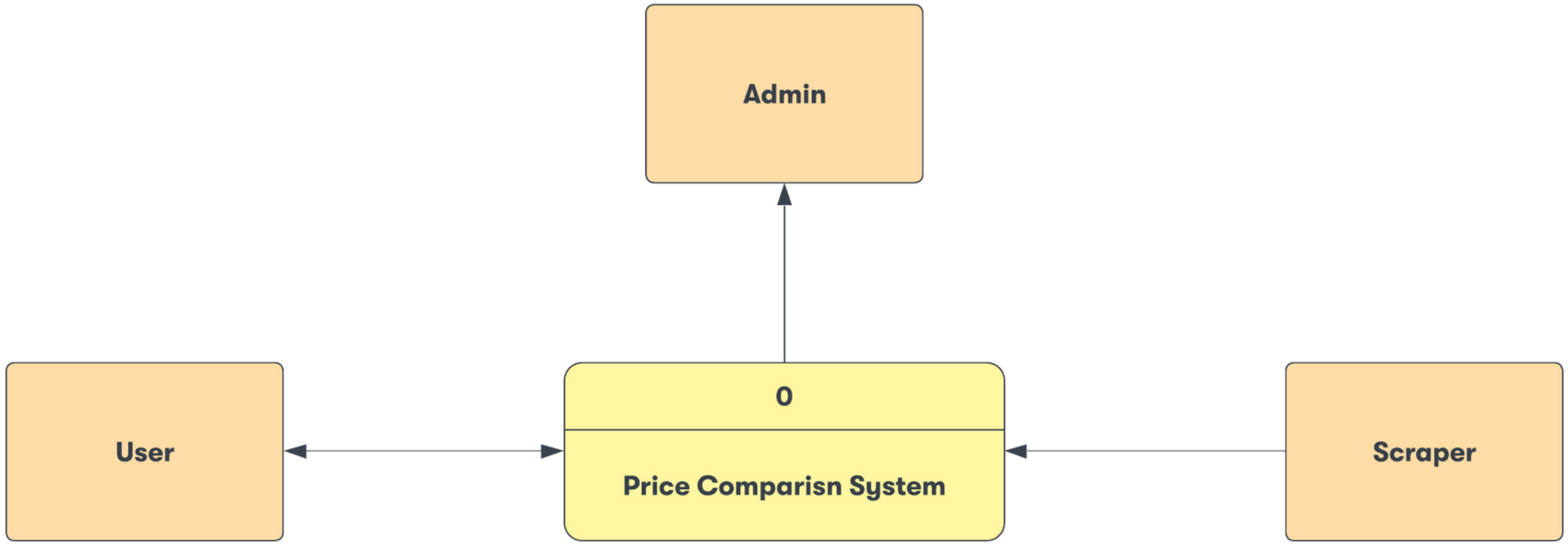


Use Case Diagram



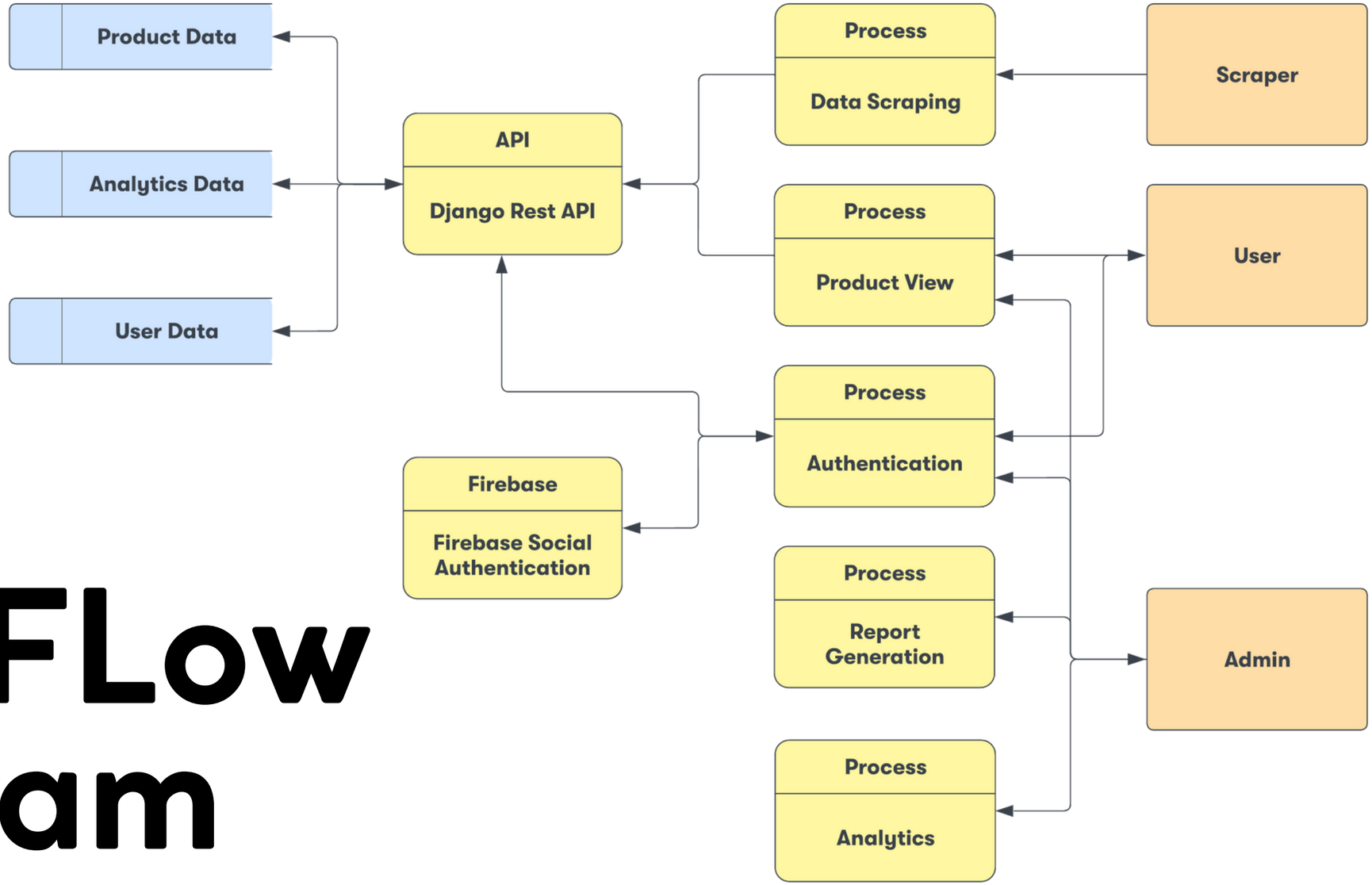
Use Case Diagram

Level O

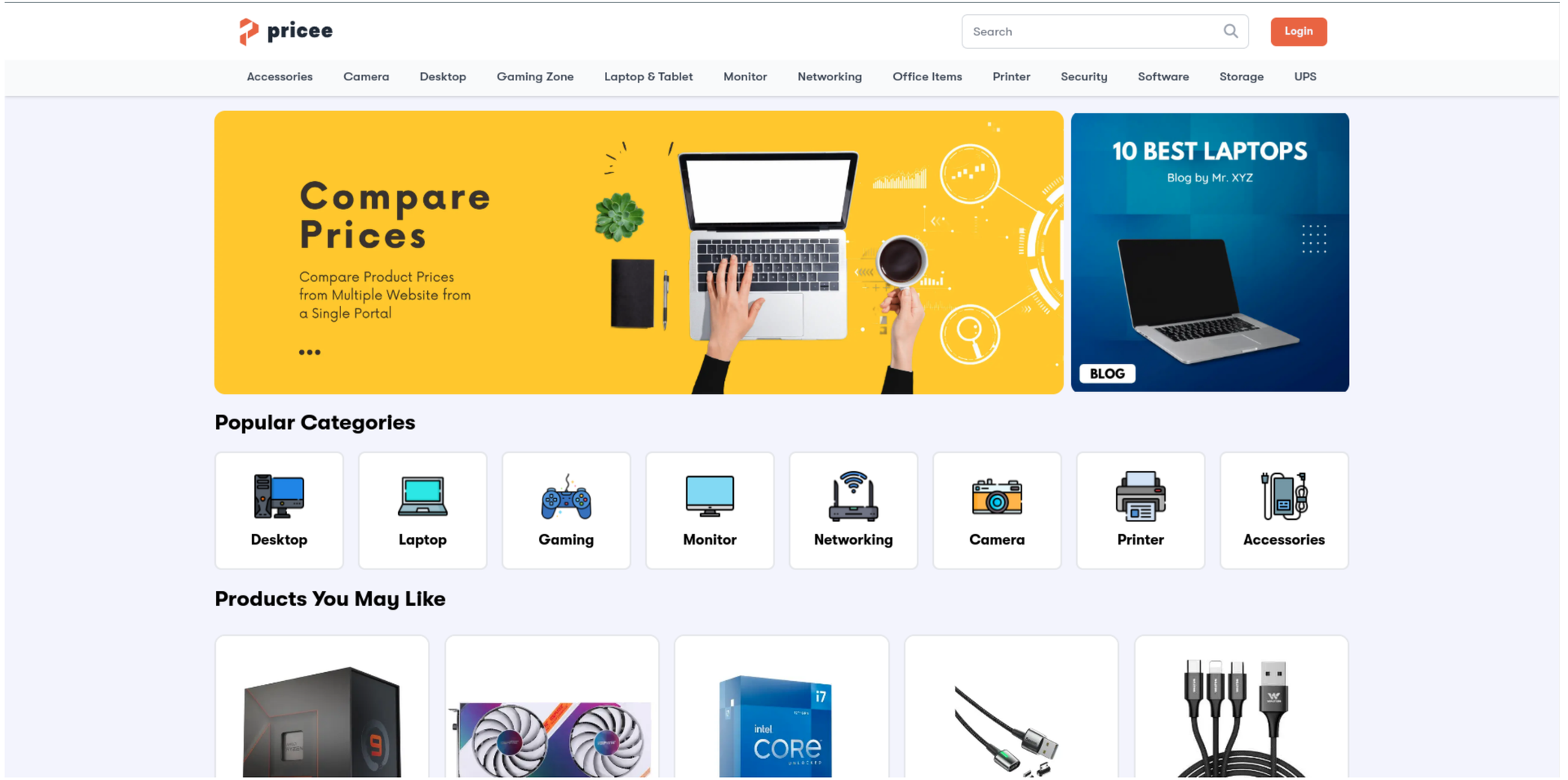


Level 1

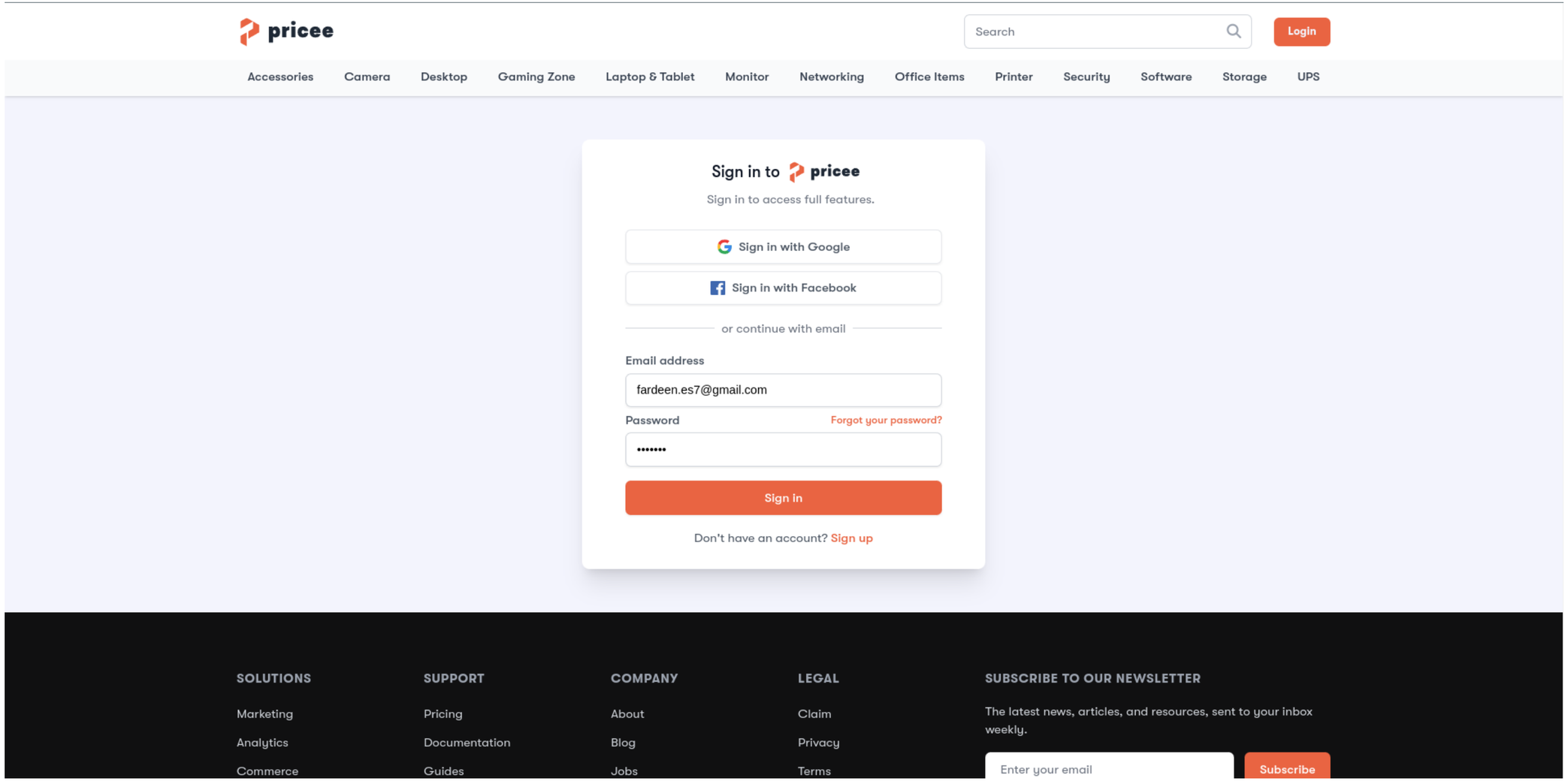
Data FLow Diagram



Landing Page



Login Page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Camera
Desktop
Gaming Zone
Laptop & Tablet
Monitor
Networking
Office Items
Printer
Security
Software
Storage
UPS
Sign in to pricee
Sign in to access full features.
Sign in with Google
Sign in with Facebook
or continue with email
Email address
fardeen.es7@gmail.com
Password
Forgot your password?
Sign in
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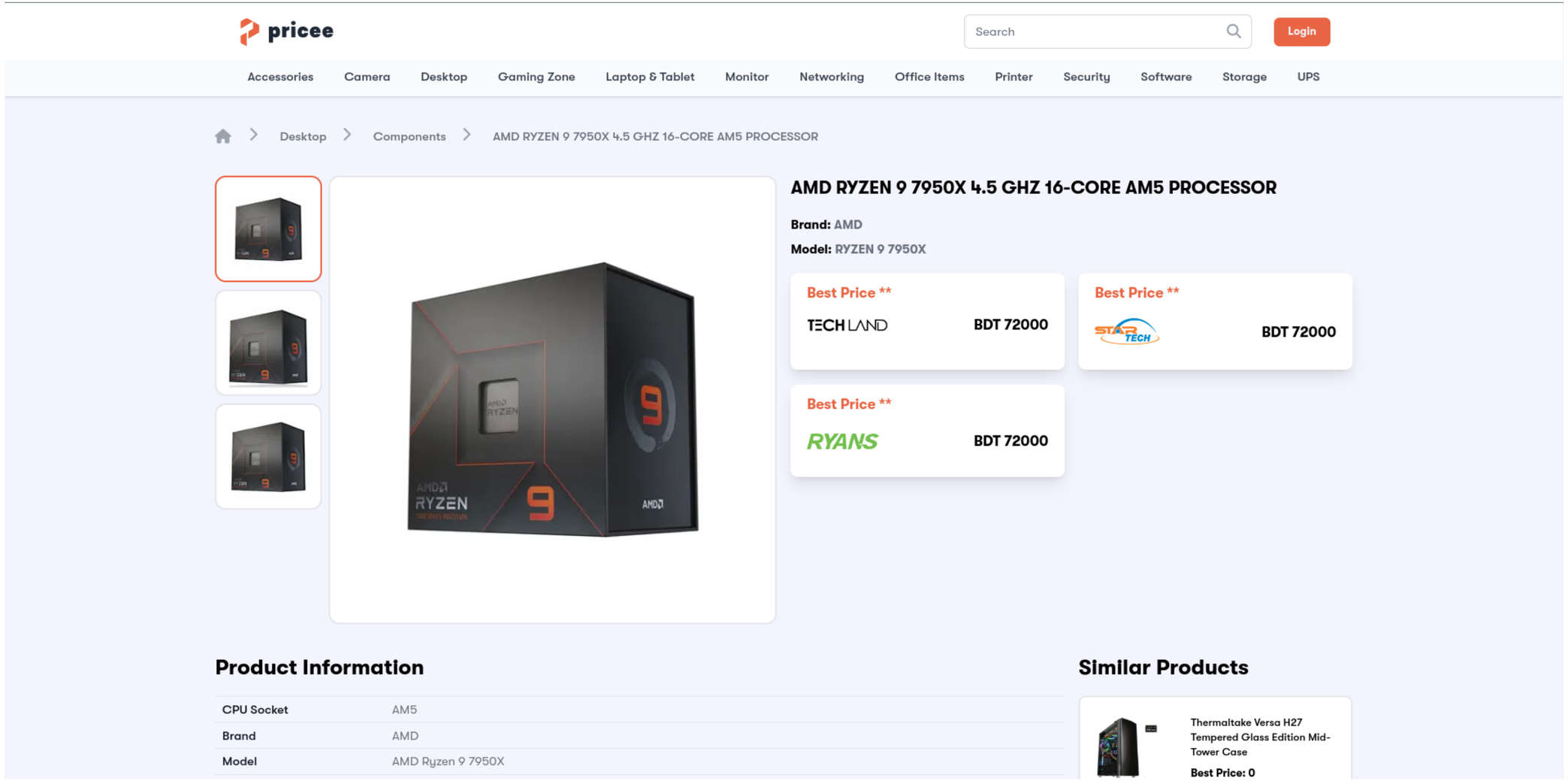
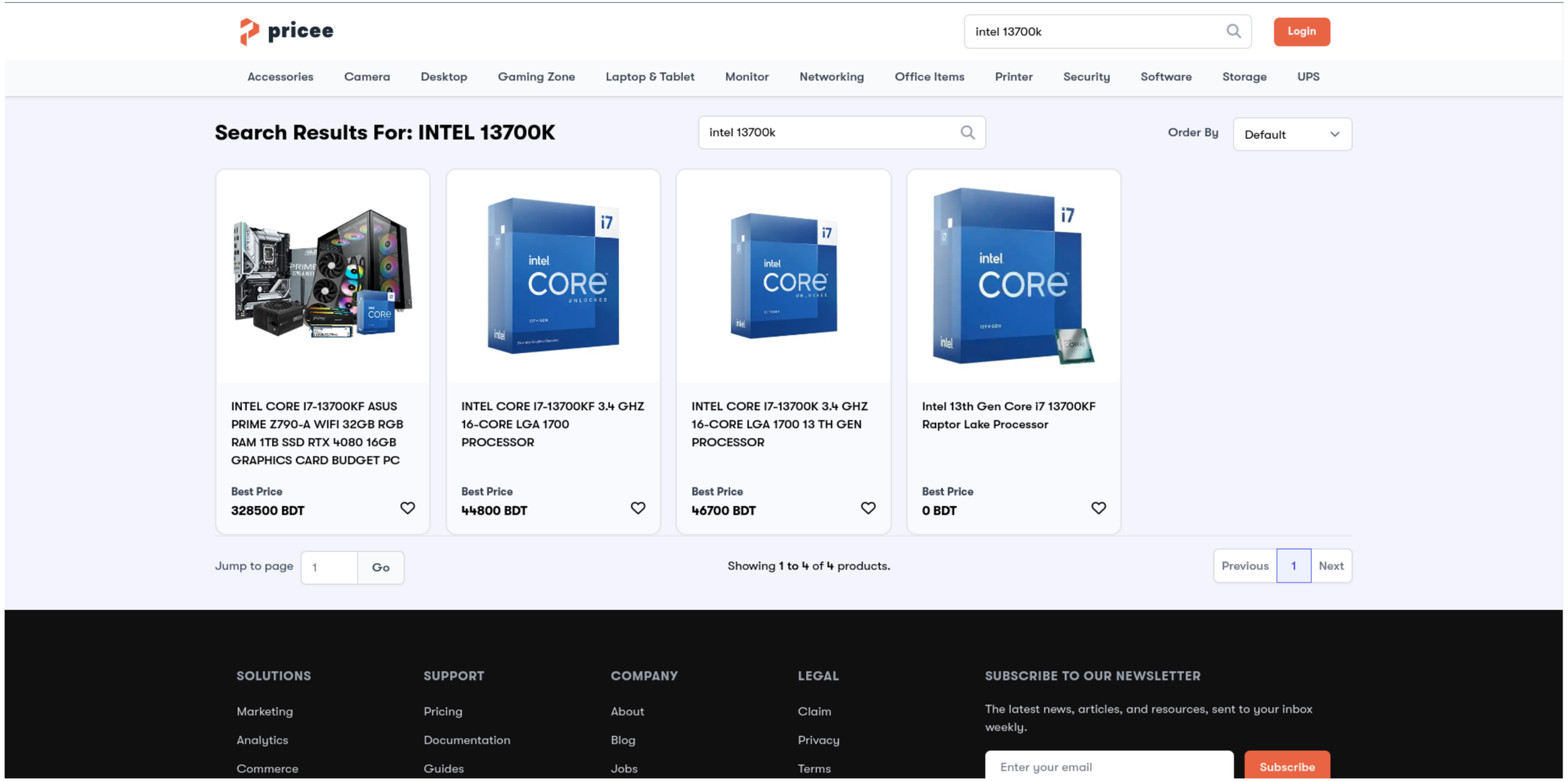
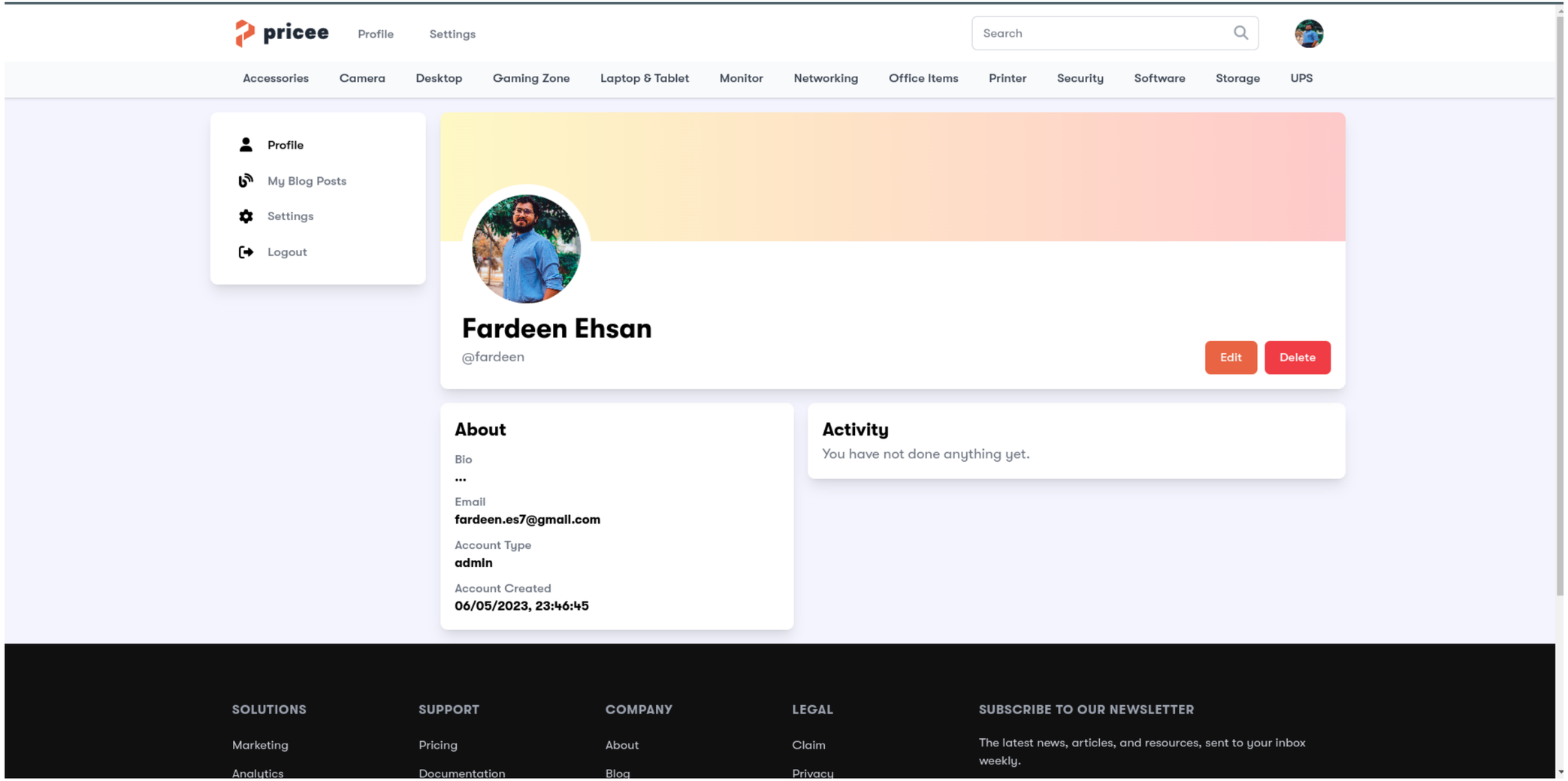
Product Page



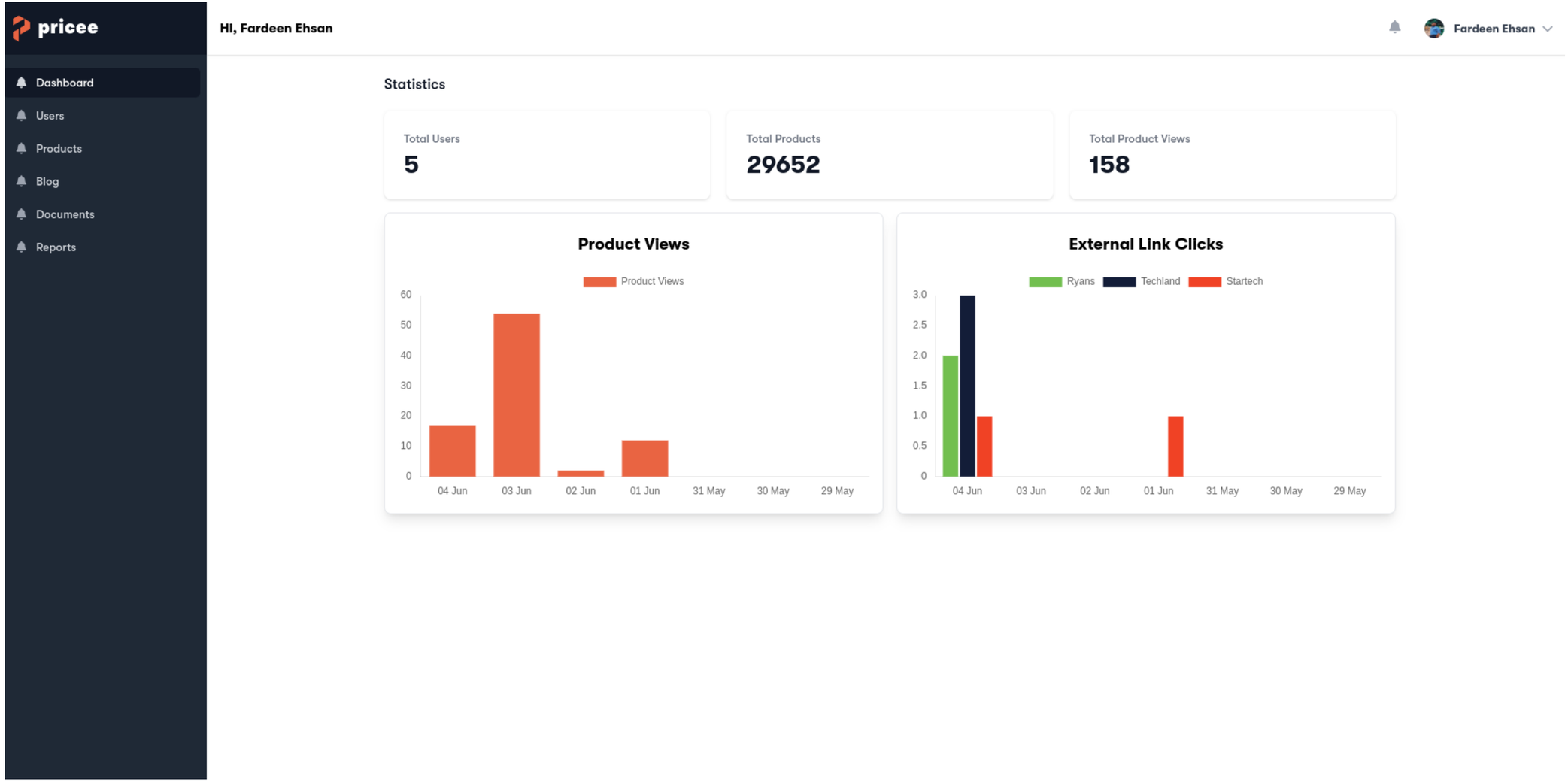
Search Results



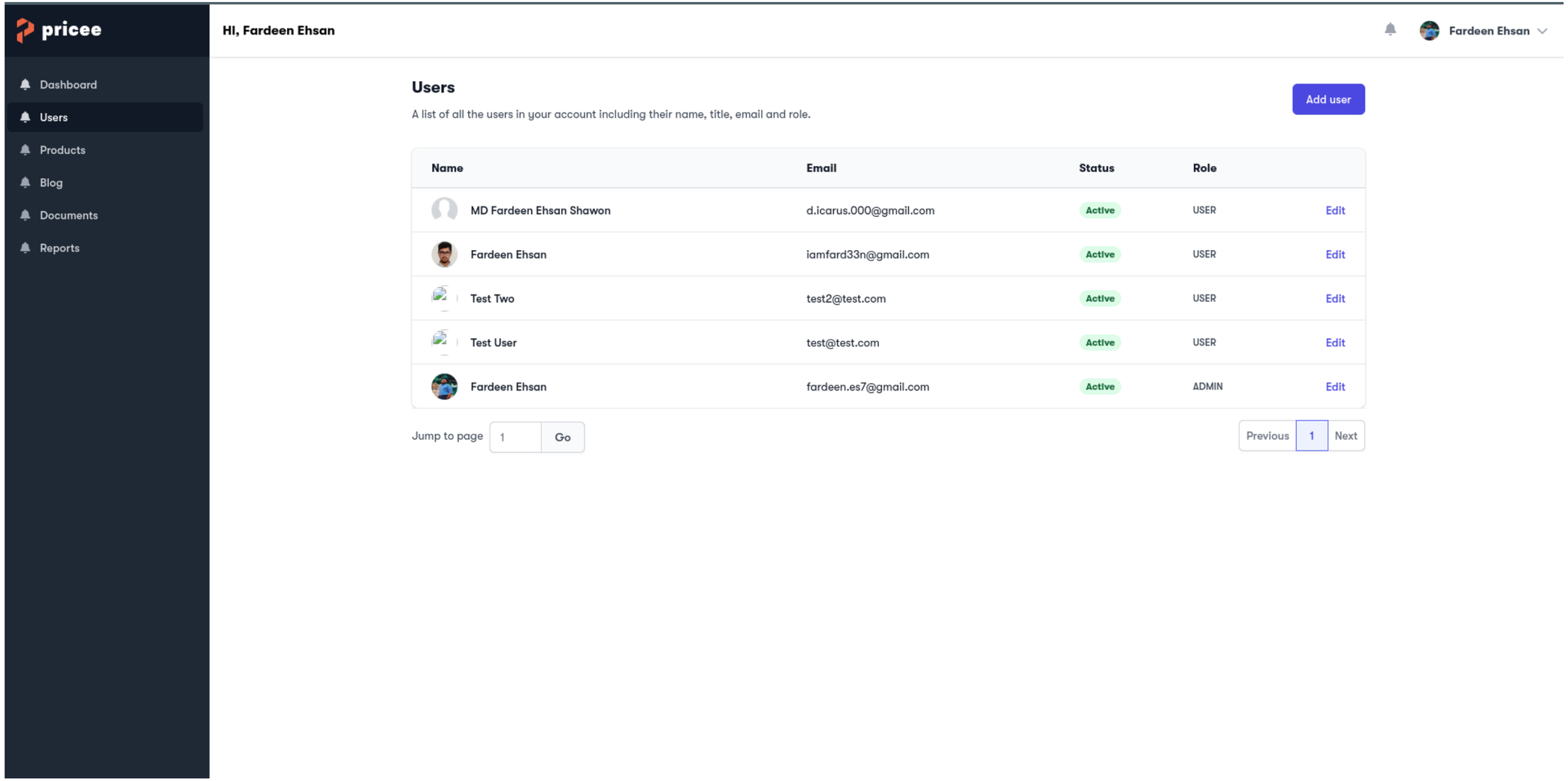
User Profile Page



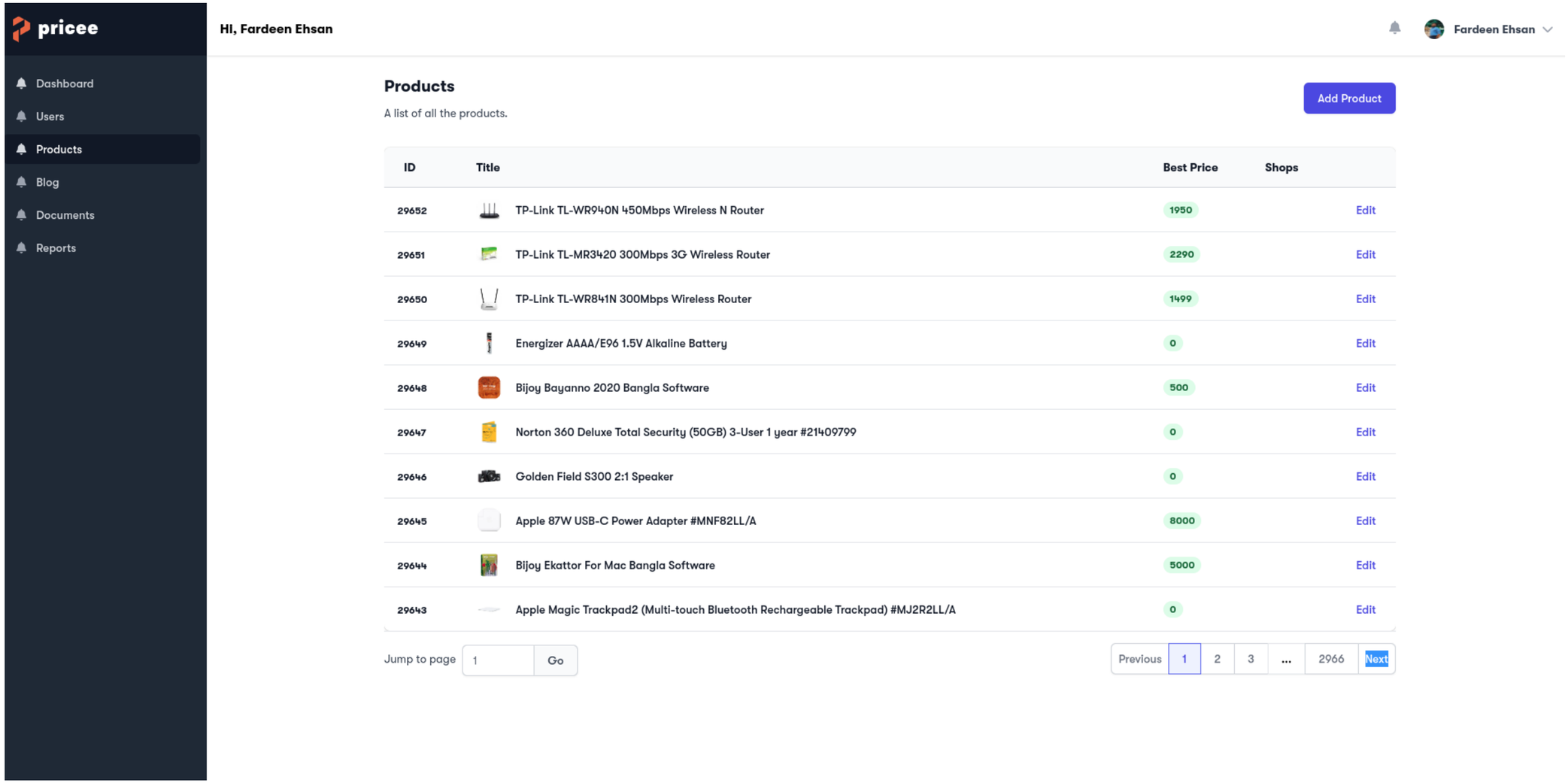
Admin Dashboard



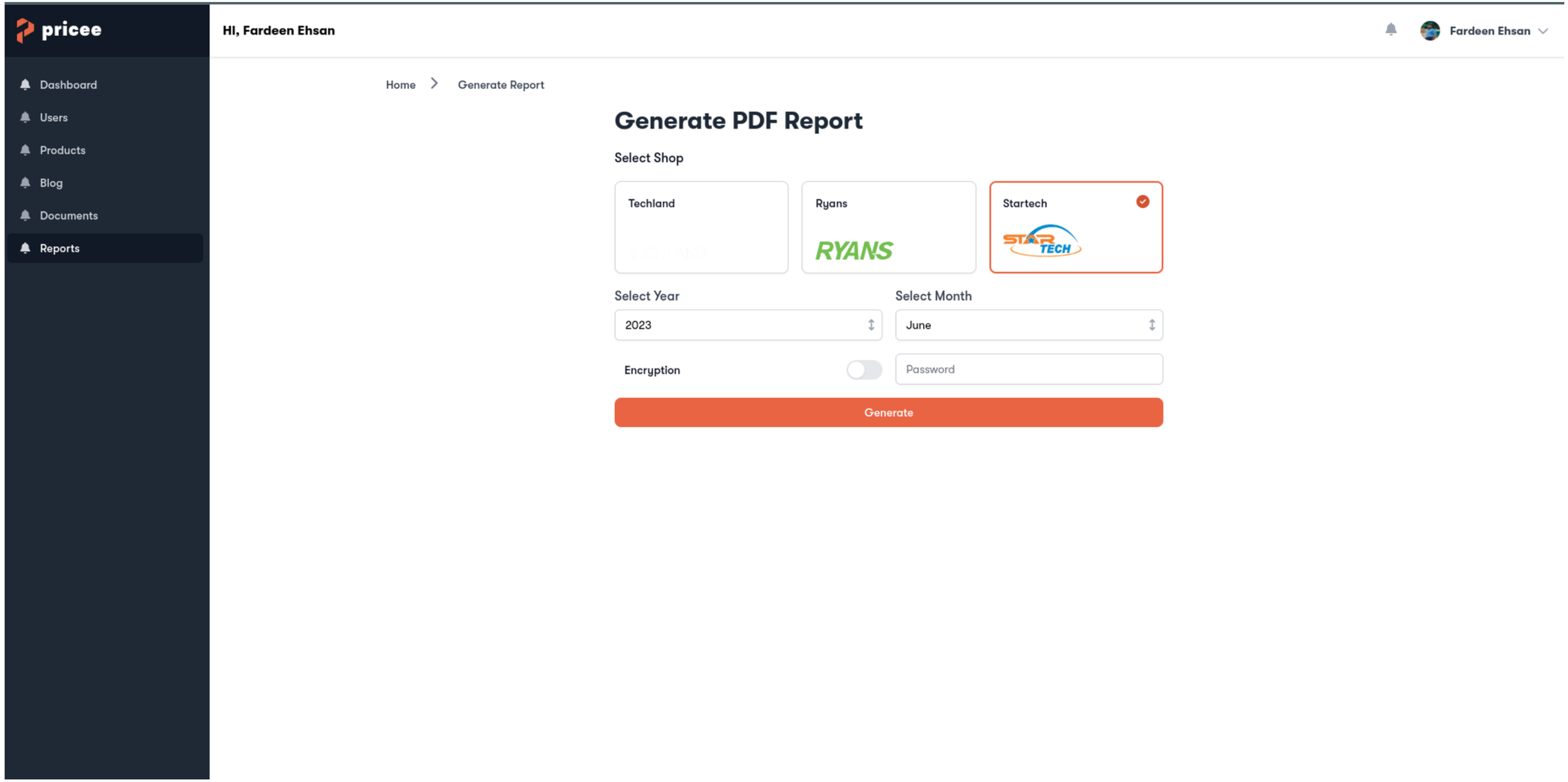
Dashboard Users List



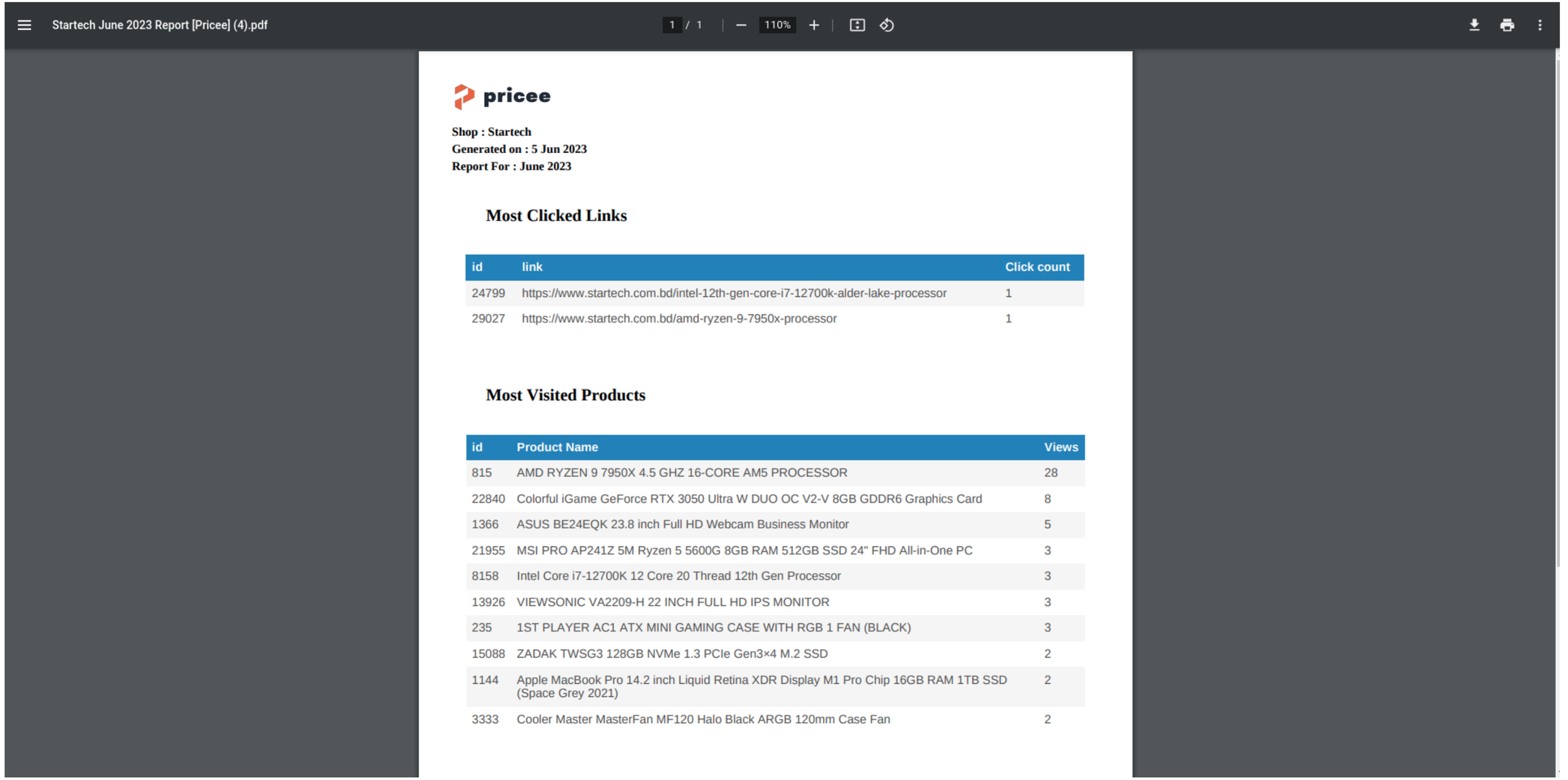
Dashboard Product List



Dashboard Report Generation



Generated Report



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MD Fardeen Ehsan Shawon

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