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Links

Here are the main links for accessing the ELibrary project and its documentation:

- **Web Application:** [ELibrary Application](#)
Access the live version of the ELibrary application, deployed on Microsoft Azure.
- **Backend Documentation:** [ELibrary Backend Docs](#)
Explore the backend's API documentation, generated with DocFX.
- **Frontend Documentation:** [ELibrary Frontend Docs](#)
View the frontend documentation, generated with Compodoc.

Tech Stack

- **Frontend:** Angular with NgRx for state management
- **Backend:** ASP.NET Core Web API
- **Database:** PostgreSQL with Entity Framework Core
- **Authentication:** JWT and OAuth 2.0
- **API Gateway:** Ocelot for routing across microservices
- **Resilience:** Polly for retry policies and fault tolerance
- **Containerization:** Docker and Kubernetes
- **CI/CD:** GitHub Actions for automated workflows
- **AI Integration:** OpenAI's GPT for recommendations

Features

- **ASP.NET Web API Backend:** Built using ASP.NET Core, the backend provides a robust, RESTful API that supports a variety of CRUD operations and complex resource management. The application follows a “Code First” approach using Entity Framework Core with a PostgreSQL database, ensuring seamless database migrations and schema management.
- **Angular Frontend with NgRx:** The frontend is built with Angular, offering a dynamic and responsive user experience. It leverages NgRx (Redux pattern) for state

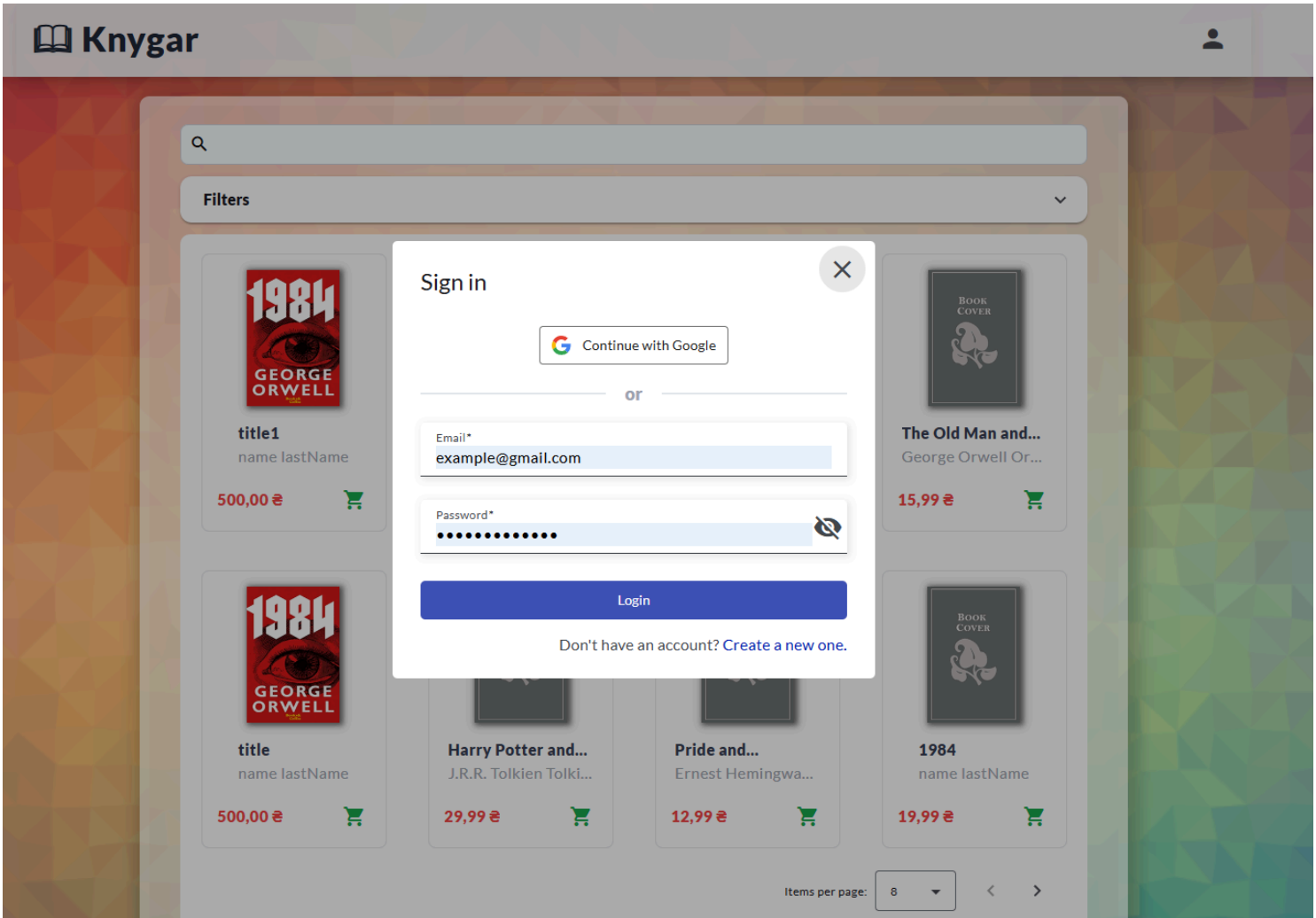
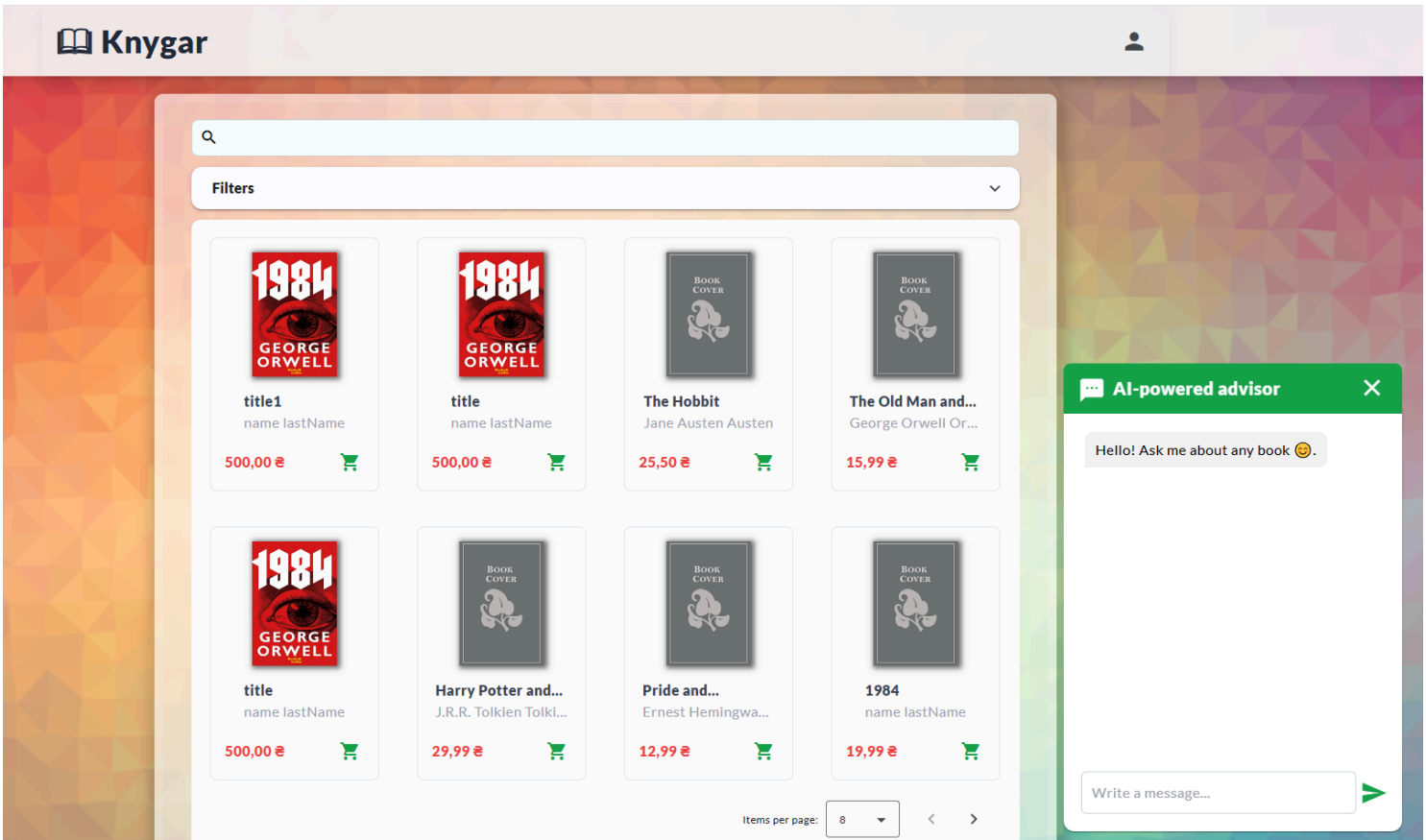
management, making the codebase scalable and maintainable, even as the application grows.

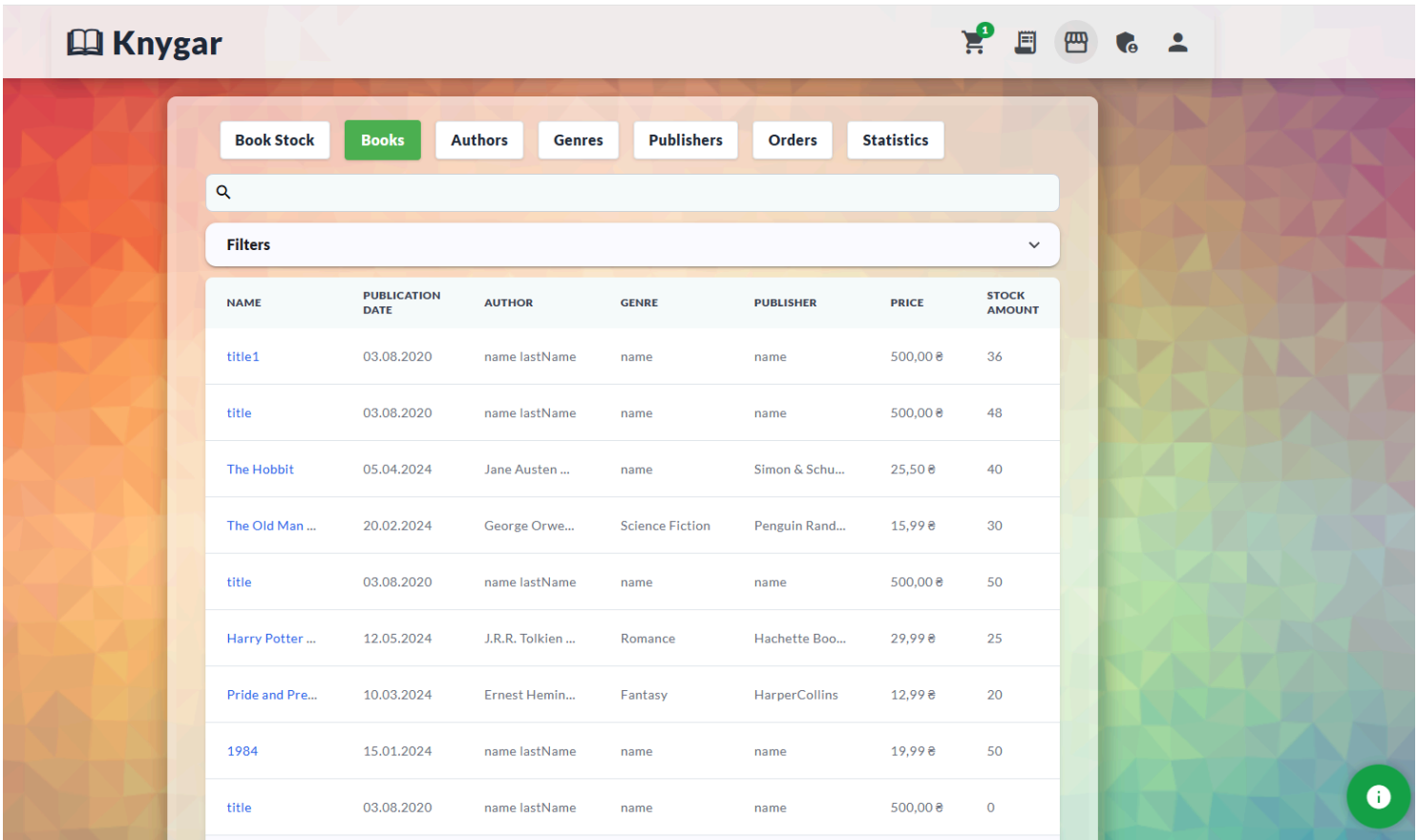
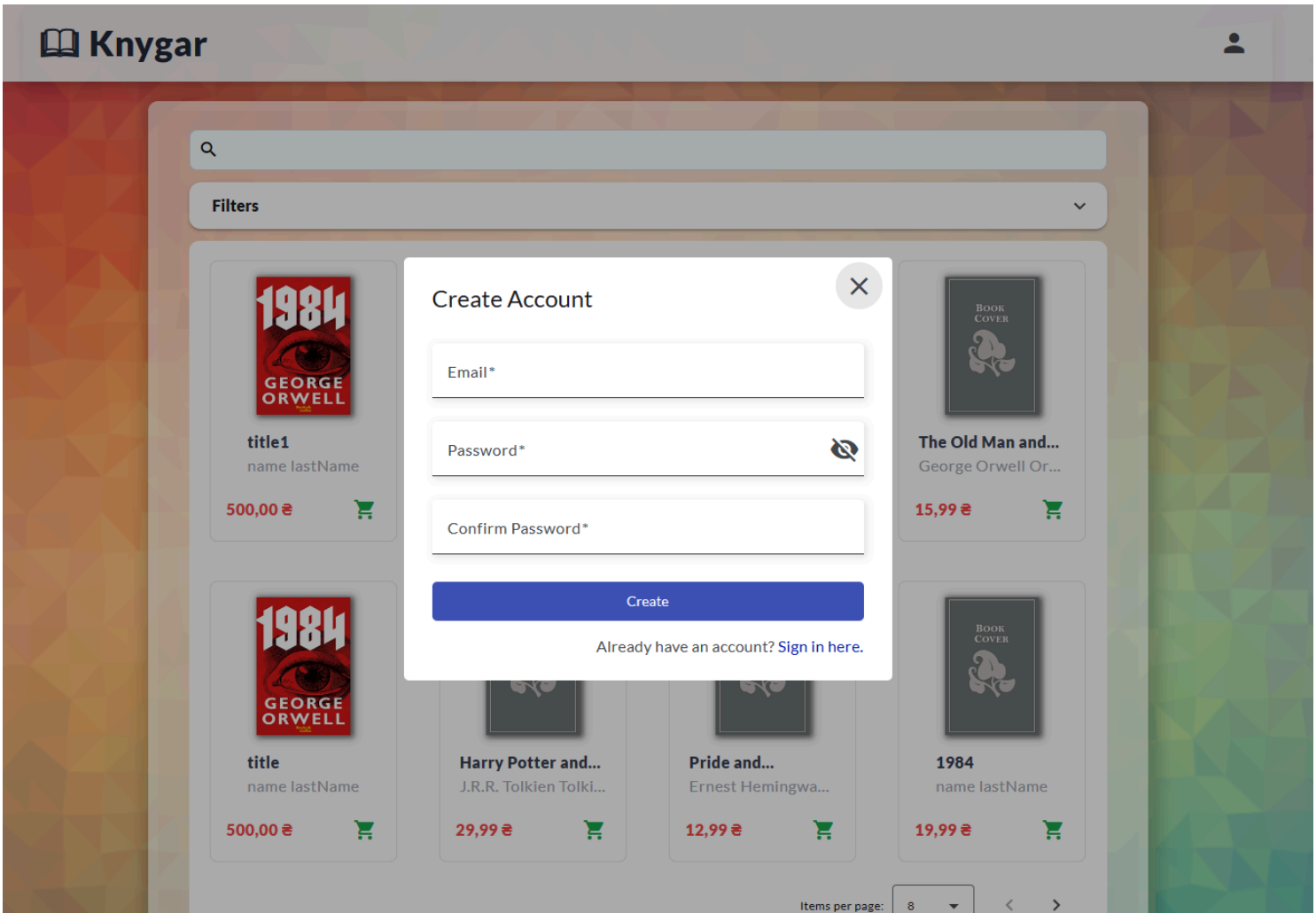
- **User Authentication:** Implements secure user authentication and authorization through JWT-based tokens for session management, and supports OAuth 2.0 for seamless third-party integrations.
- **API Gateway with Ocelot:** An Ocelot API Gateway is used to route and manage requests between microservices, improving scalability and simplifying service management. This setup helps in optimizing requests and load balancing.
- **Polly for Resilience:** The Polly library is integrated to handle transient faults with retry policies, circuit breakers, and timeouts, improving application resilience and reliability under different conditions.
- **OpenAI Integration for AI-powered Book Recommendations:** Leveraging OpenAI's GPT model, hosted on Azure, the application features an AI-based online consultant. The AI can provide personalized book recommendations by accessing real-time data from the database, enhancing user engagement.
- **Containerization with Docker Compose:** All services are containerized using Docker and managed via Docker Compose, ensuring consistent environments across development, testing, and production stages.
- **Continuous Integration and Continuous Deployment (CI/CD):** The project uses GitHub Actions for automated CI/CD pipelines, enabling seamless deployments to Azure. Testing is supported with NUnit and Test Containers to ensure reliability and code quality.
- **Design Patterns:** Incorporates various design patterns for better code organization and maintainability. This includes the Mediator pattern (via MediatR), which facilitates decoupled communication between services.
- **Testing and Quality Assurance:** Implements NUnit and Test Containers for unit and integration tests, ensuring that all components are thoroughly tested in isolated environments.

Contributors



Screenshots





Book Stock

Books

Authors

Genres

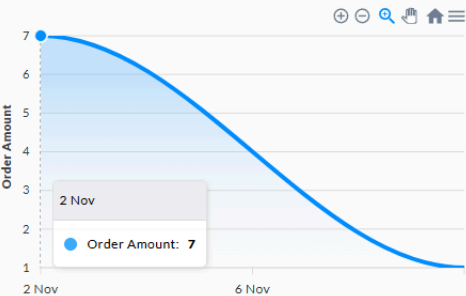
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Statistics

Statistics

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Items per page: 10





Title Harry Potter and the Sorcerer's Si
Author J.R.R. Tolkien Tolkien
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Description

The story of a young boy who discovers he is a wizard and attends Hogwarts School of Witchcraft and Wizardry, uncovering his past and facing dark forces.



Namespace ApiGateway

Classes

[Configuration](#)

[Utility](#)