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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 Docker Compose
- **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.

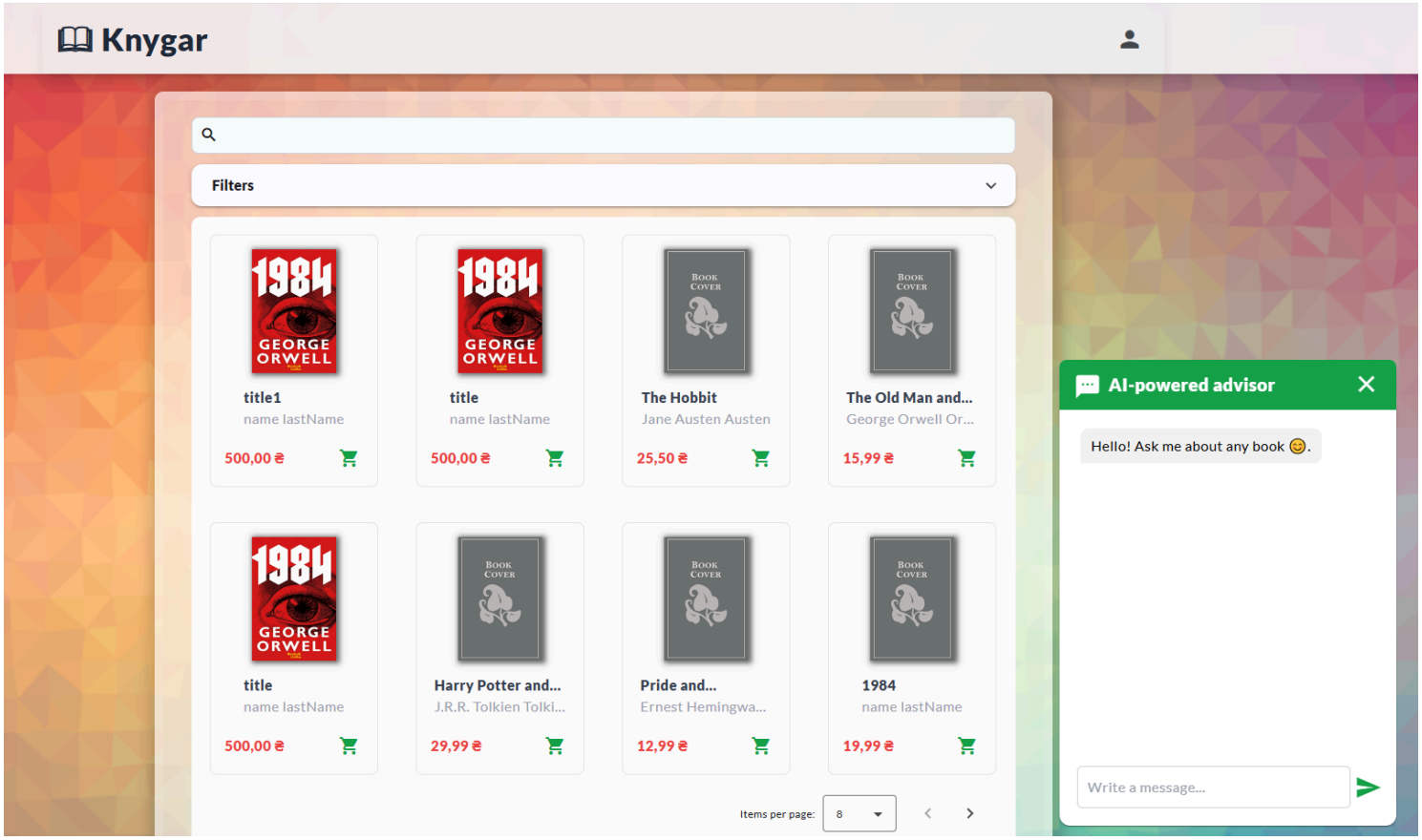
- **API Gateway with Ocelot**: An Ocelot API Gateway is used to route and manage requests between microservices, improving scalability and simplifying service management. This setup helps in optimizing requests and load balancing.

- **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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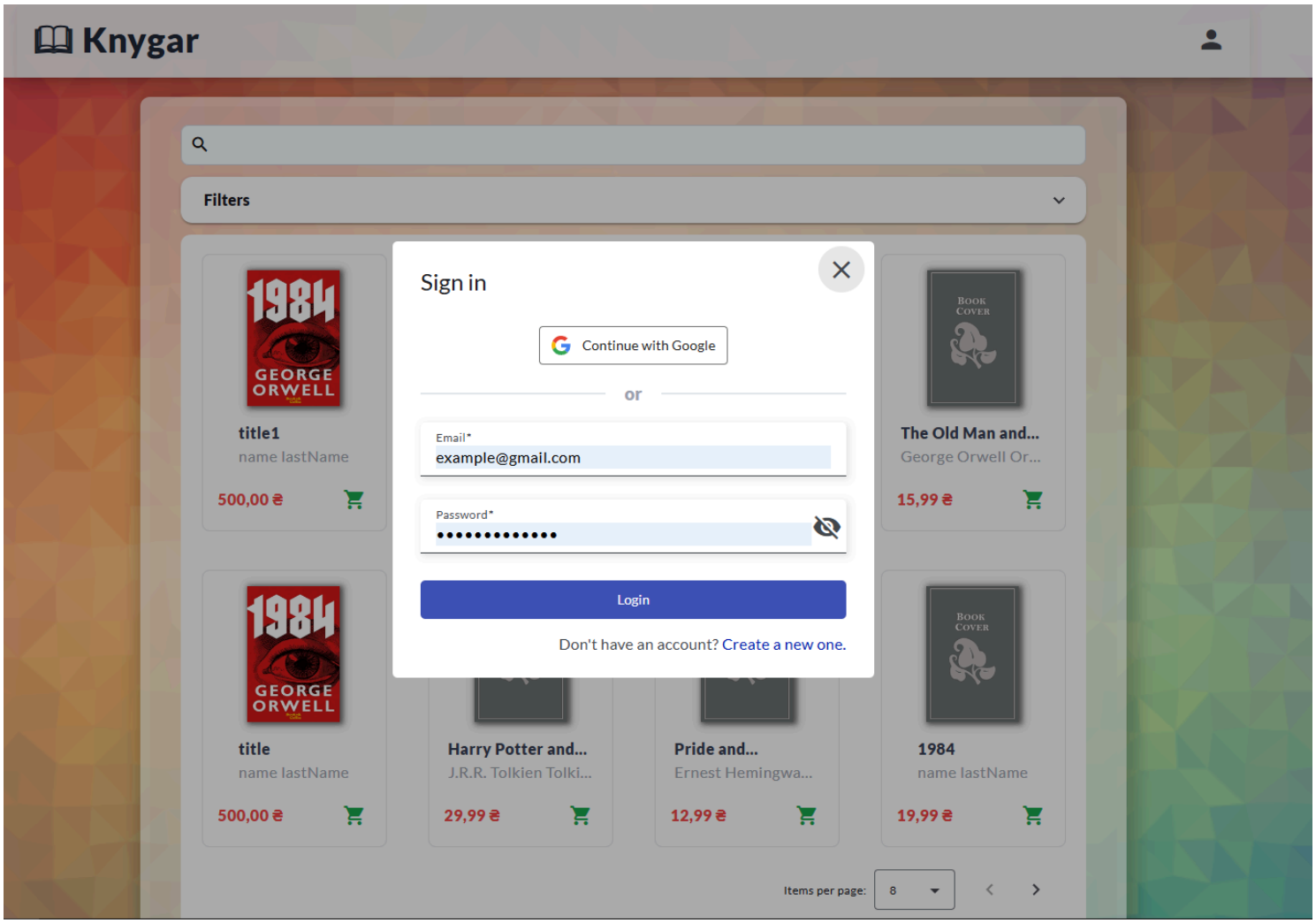
AI-powered advisor
Hello! Ask me about any book 😊.
Write a message...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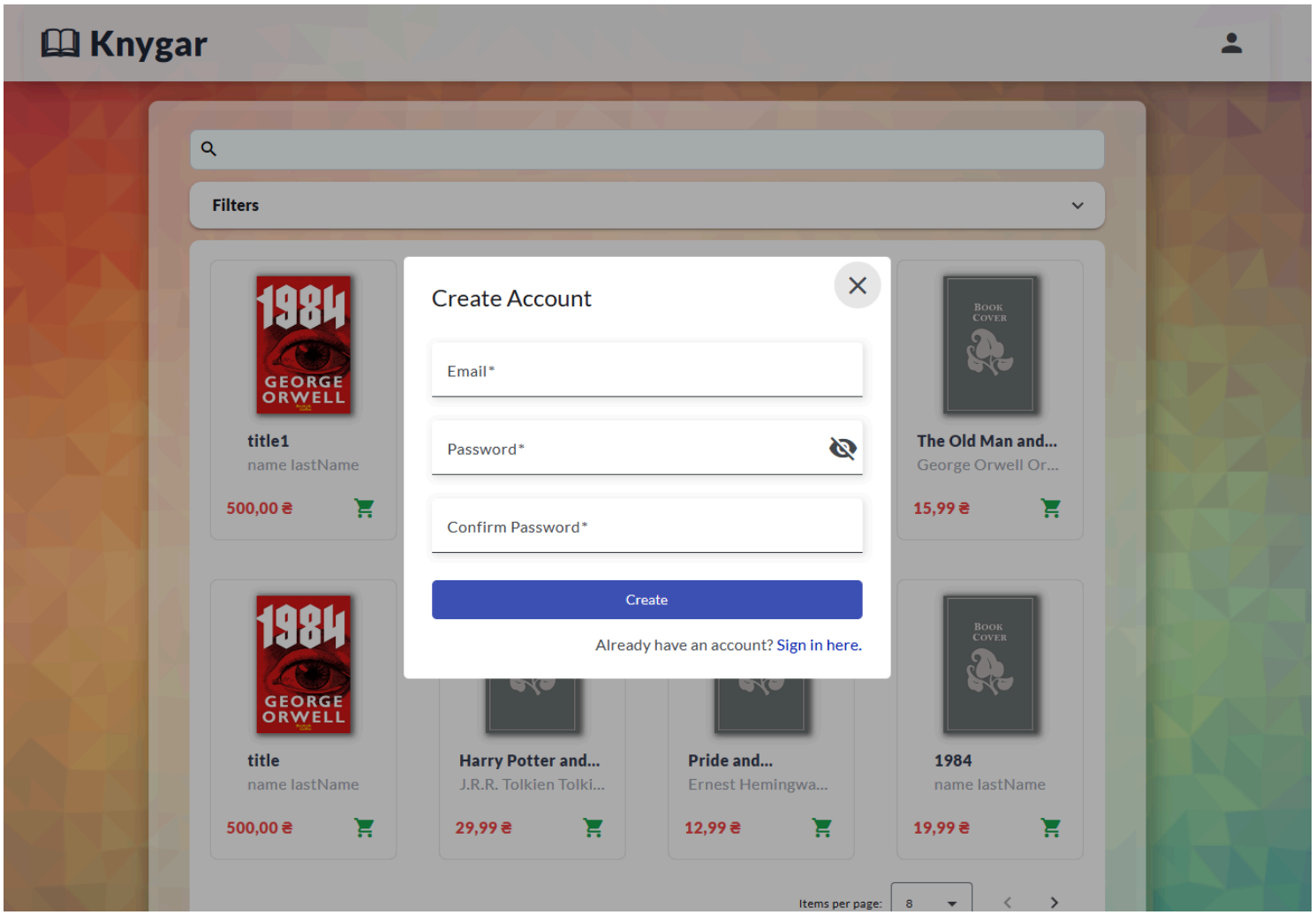
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Password*
Confirm Password*
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Already have an account? Sign in here.
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George Orwell Or...
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J.R.R. Tolkien Tolki...
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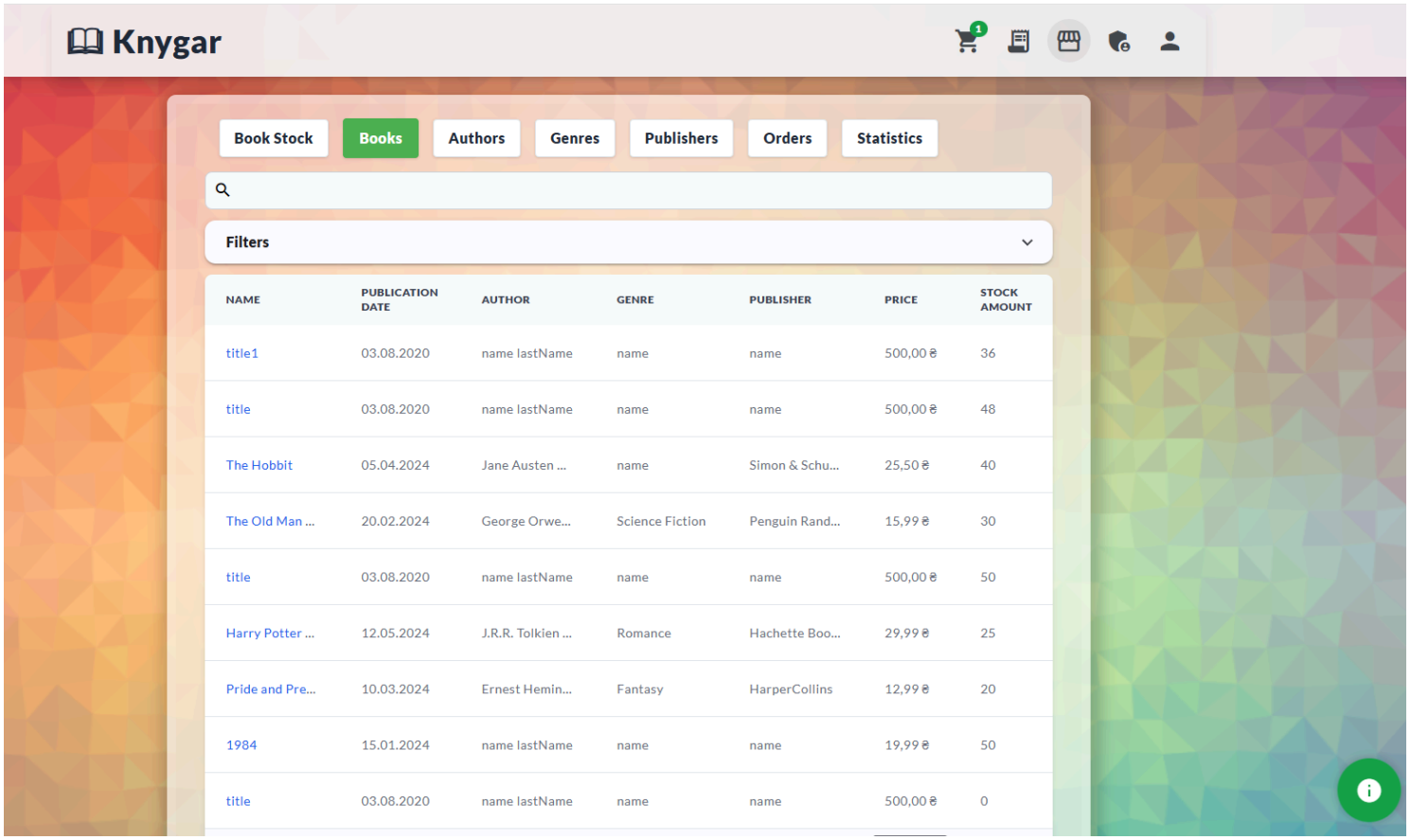
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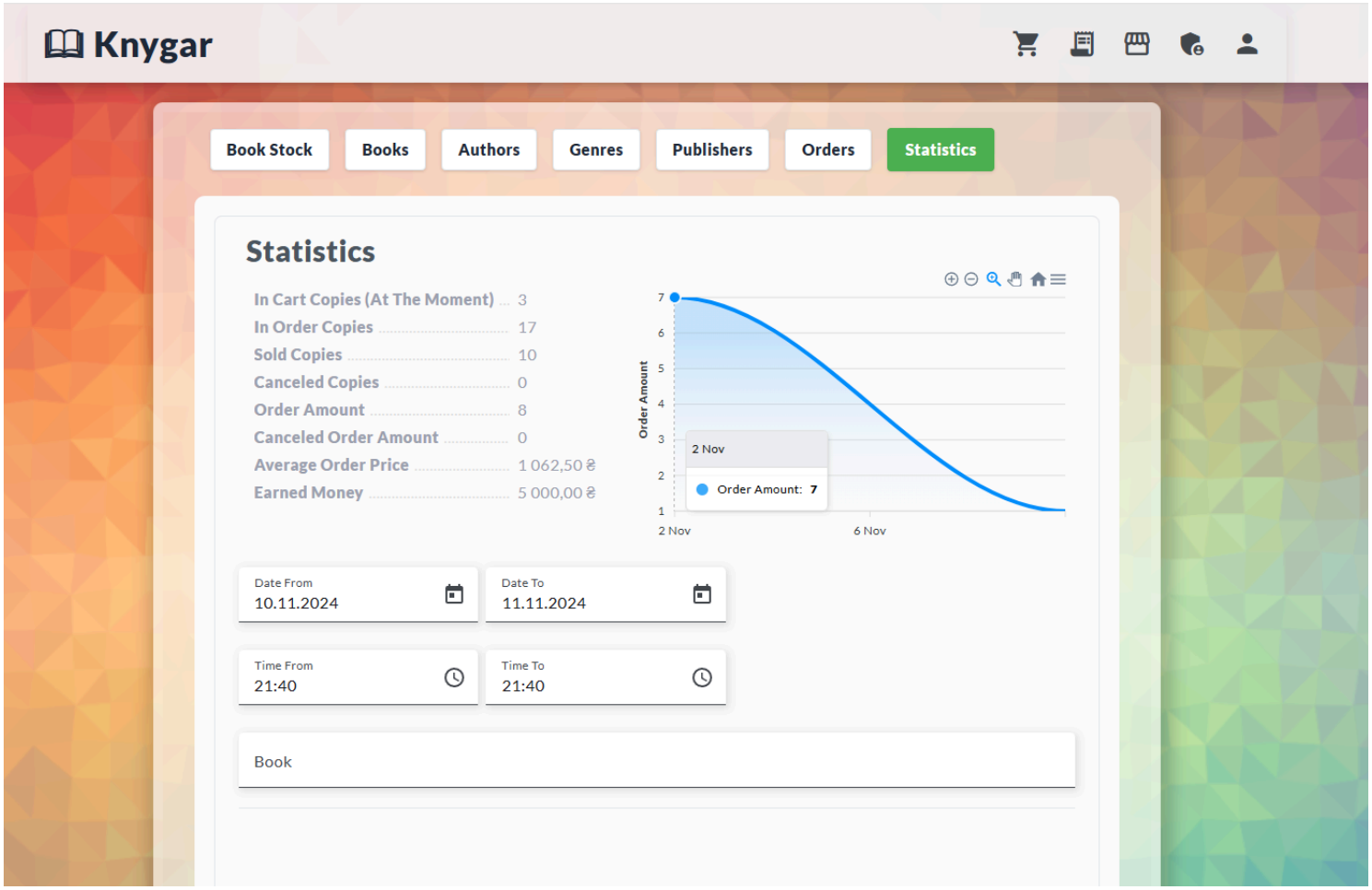
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Earned Money 5 000,00 ₴
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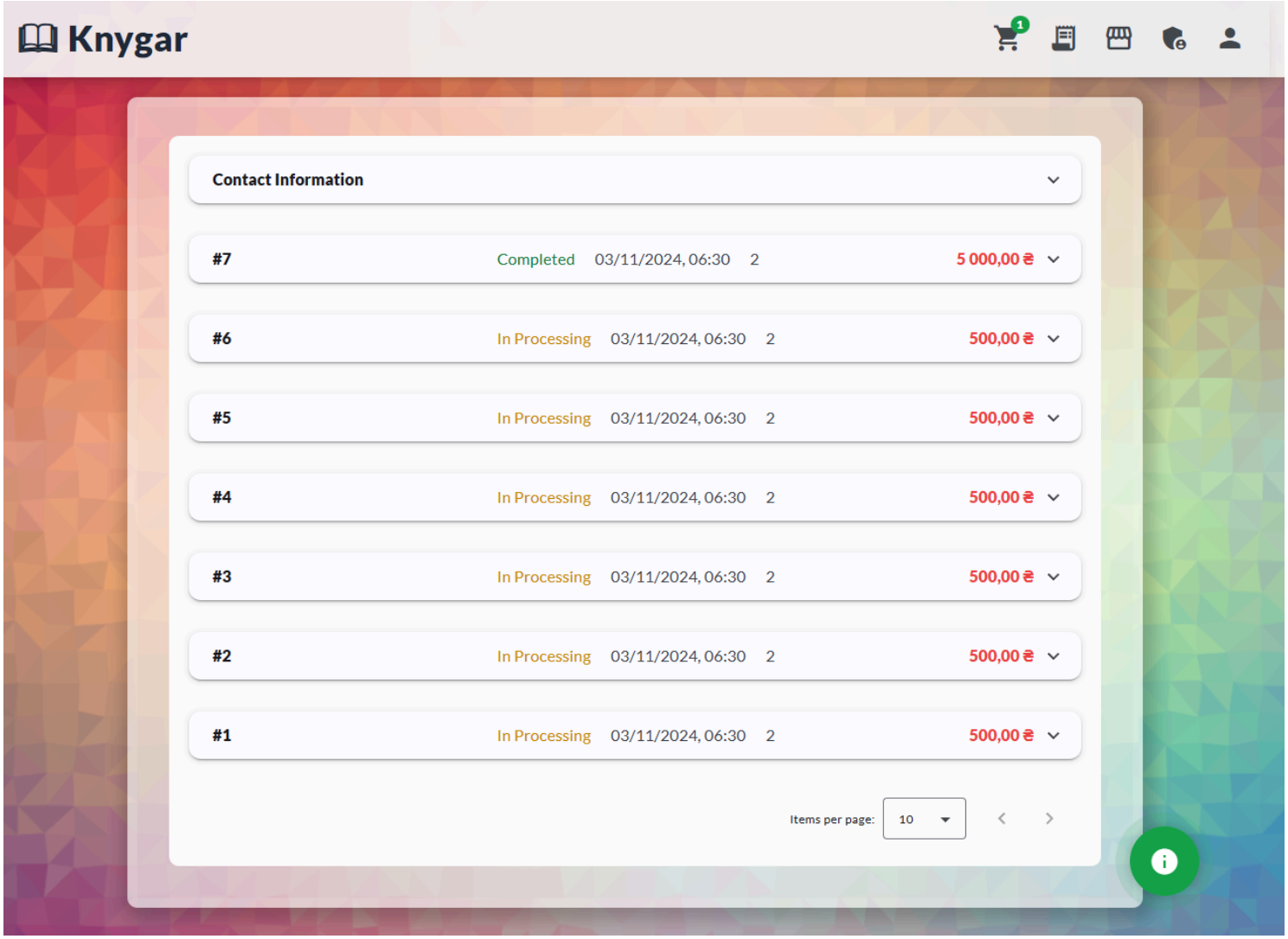
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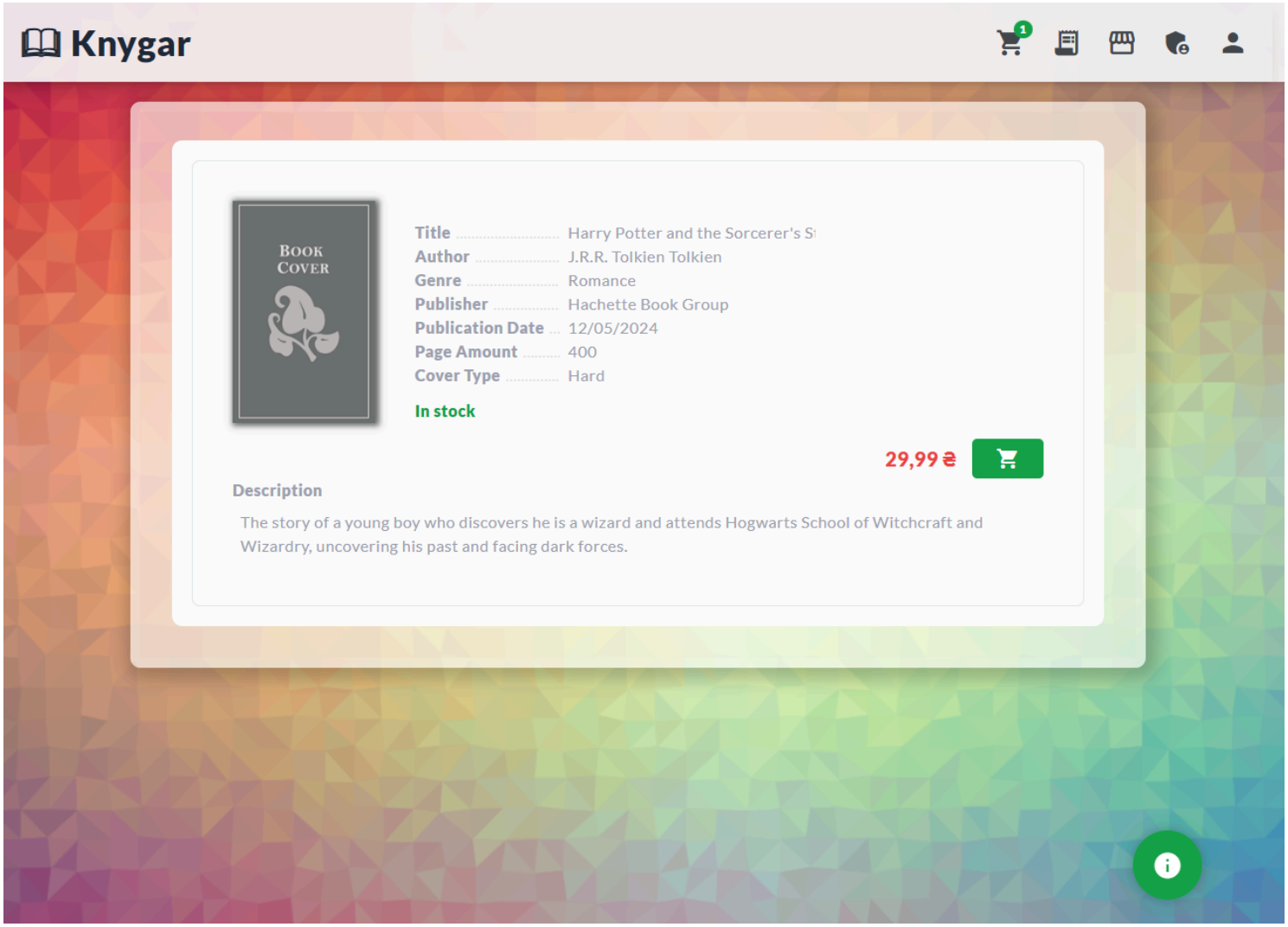
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1
Book Cover
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Author ..... J.R.R. Tolkien Tolkien
Genre ..... Romance
Publisher ..... Hachette Book Group
Publication Date ... 12/05/2024
Page Amount 400
Cover Type ..... Hard
In stock
29,99 ₴
Description
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.

Getting Started

Try Out the Web App

Or to run the ELibrary project locally, follow these steps:

Prerequisites (Legacy)

- **Node.js** (for Angular CLI)
- **.NET SDK** (for backend)
- **PostgreSQL** (for database)

Installation (Legacy)

1. **Clone the repository**:

   ```
   git clone https://github.com/TEGTO/ELibrary.git
   ```

2. **Navigate into the project directory**:

   ```
   cd ELibrary
   ```

3. **Set up the Backend**:
   - Navigate to the backend directory.
   - Configure database settings in `appsettings.json`.
   - Run the application:

     ```
     dotnet run
     ```