# Requirements Document for Öneri Robotu

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## 1. Introduction

## 1.1 Purpose

The purpose of this document is to outline the functional and non-functional requirements for the Öneri Robotu project, a machine-learning-powered recommendation system that provides personalized suggestions for movies and TV shows.

### 1.2 Scope

The system will collect user preferences, analyze user interactions, and generate recommendations using machine learning models. The scope includes a web-based user interface, backend data storage, and a recommendation engine.

## 2. Functional Requirements

- User Registration and Authentication: The system must allow users to create an account using an email and password. Users must be able to log in and log out securely.

- User Profile Management: Users must be able to update their preferences, including favorite genres and previously watched movies.

- Movie and TV Show Database: The system must maintain a structured database of movies and TV shows.

- Recommendation Engine: The system must generate personalized recommendations using machine learning techniques (content-based filtering, collaborative filtering, or hybrid approaches).

- Real-Time Adaptation: Recommendations must update dynamically based on user behavior and interactions.

- Search and Filter Options: Users must be able to search for movies and filter results based on genre, release date, and rating.

- User Feedback Collection: Users must be able to like or dislike recommendations to refine future suggestions.

- Backend API for Data Processing: The system must include a secure API for authentication, recommendation retrieval, and user data storage.

- UI/UX Design: The web-based interface must be intuitive, responsive, and accessible on various screen sizes.

- Admin Panel: An admin panel must be available to monitor and manage the system database.

## 3. Non-Functional Requirements

- Usability: The system must have a user-friendly interface with an intuitive layout and easy navigation.

- Performance: The system must respond to user queries within 2 seconds.

- Scalability: The backend must support at least 10,000 concurrent users.

- Security: User passwords must be stored securely using encryption. Data access must be restricted to authenticated users.

- Cross-Browser Compatibility: The system must work seamlessly on Chrome, Firefox, and Edge.

## 4. Effort Estimations

|  |  |
| --- | --- |
| Phase | Effort (Person-Days) |
| Requirements Gathering | 4 |
| Design | 6 |
| Development | 12 |
| Testing & Integration | 5 |
| Deployment | 3 |
| Total Effort | 30 |

The effort estimations were made using **expert judgment and analogy-based estimation methods**. The estimations were based on:

**Previous similar projects**: Efforts from past recommendation system developments were analyzed to estimate the effort required for each phase.

**Complexity of tasks**: The design and development phases were given higher effort due to the complexity of implementing a machine learning model and integrating it into a user-friendly interface.

## 5. Task Assignments

### 5.1 Team Members and Roles

|  |  |
| --- | --- |
| Team Member | Role |
| Efe Arda Uzunova | Software Developer |
| İbrahim Eren Yılmaz | Software Developer |
| Sencer Ali Şahin | ML Engineer |
| Mete Oktar | ML Engineer |

### 5.2 Task Matrix

|  |  |
| --- | --- |
| Task | Assigned Team Member |
| Requirements Gathering | All Team Members |
| UI/UX Design | İbrahim Eren Yılmaz |
| Backend Development | Mete Oktar, Efe Arda Uzunova, Sencer Ali Şahin |
| Frontend Development | İbrahim Eren Yılmaz |
| ML Model Development | Mete Oktar, Sencer Ali Şahin |
| Testing & Integration | All Team Members |
| Deployment | All Team Members |

### 5.3 Rationale for Task Assignment

Task assignments were made based on team members’ expertise and interests. The software developers handle frontend and backend tasks, while the ML engineers focus on the recommendation system. The task distribution ensures a balanced workload and effective collaboration.

## 6. Conclusion

This Requirements Document provides a comprehensive outline of the necessary functional and non-functional requirements, effort estimations, and task assignments for the successful implementation of the Öneri Robotu project. The structured plan ensures that development aligns with project objectives and delivers a high-quality recommendation system.