



**TOBB ETU**

**Economy & Technology University**

**BIL 495 / YAP 495**

**Project Management Plan (PMP)**

**Reference: IEEE 1058 / ISO/IEC 12207**

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Project Title: BookMind – AI-Based Personalized Book Recommendation System

## 1. Project Overview

Project Goal:

The goal of BookMind is to design a smart, personalized book recommendation system that analyzes users' reading histories and preferences to suggest books similar in theme, genre, or author style.

Project Stage:

No implementation or testing has been performed yet. The plan defines the intended scope, roles, timeline, resources, and anticipated risks before the development process begins.

Planned Deliverables:

- Project documentation (definition, plan, and requirements)
- Dataset collection and preprocessing plan
- Preliminary system architecture and algorithm selection
- Initial prototype design concept (to be developed in later stages)

Stakeholders:

- Project Team: İclal Suzan, Melih Rıza Koç, Samet Emre Demir
- Course Instructor / Supervisor: Çiğdem Avcı
- Target Users: Readers, students, and book enthusiasts

## 2. Organization and Roles

Team Member	Tasks and Responsibilities
<b>İclal Suzan</b>	Contributes to project planning and documentation processes. Assists in preparing the requirement analysis, creating the project timeline, and supporting team coordination.
<b>Melih Rıza Koç</b>	Participates in identifying data sources, planning data preprocessing methods, and contributing to system design. Assists in testing and error analysis during the development phase.
<b>Samet Emre Demir</b>	Evaluates the technical feasibility of project requirements, contributes to algorithm selection and prototype planning, and takes part in presentation and reporting stages.
<b>Entire Team</b>	Shares joint responsibility for all phases, including collective decision-making, version tracking on GitHub, participation in meetings, document updates, and submission processes.

### 3. Project Schedule

<i><b>Phase</b></i>	<i><b>Description</b></i>	<i><b>Status</b></i>
<i><b>Planning &amp; Requirement Analysis</b></i>	<i>Identify project objectives, collect requirements, and define data sources.</i>	<i>Planned</i>
<i><b>System Design</b></i>	<i>Design the system architecture, select algorithms, and create UI structure.</i>	<i>Planned</i>
<i><b>Development (Prototype)</b></i>	<i>Implement the first version of the recommendation system and user interface.</i>	<i>Upcoming</i>
<i><b>Testing &amp; Refinement</b></i>	<i>Test the system for accuracy, fix issues, and improve performance.</i>	<i>Upcoming</i>
<i><b>Documentation &amp; Delivery</b></i>	<i>Finalize all reports, prepare the presentation, and complete project submission.</i>	<i>Upcoming</i>

### 4. Budget and Resources

Software Tools (Planned):

- Python (Pandas, Scikit-learn) – for data analysis and model development
- JavaScript / React – for web interface (planned)
- Firebase / Firestore – for data storage (planned)
- GitHub – for version control and collaboration

Hardware:

- Team members' personal computers
- Optional: Cloud-based training environment if needed

Budget:

- No direct financial cost; all tools are open-source.
- Total estimated time: ~100–120 person-hours distributed across three members.

## 5. Risk Management

<b><i>Risk</i></b>	<b><i>Probability</i></b>	<b><i>Impact</i></b>	<b><i>Mitigation Strategy</i></b>
<b><i>Limited development time</i></b>	<i>Medium</i>	<i>High</i>	<i>Keep the system design minimal and focus on core functionalities first.</i>
<b><i>Insufficient or inconsistent data</i></b>	<i>High</i>	<i>Medium</i>	<i>Use multiple open-source datasets (e.g., Kaggle, Goodreads) and perform preprocessing to improve data quality.</i>
<b><i>Technical challenges during implementation</i></b>	<i>Medium</i>	<i>Medium</i>	<i>Simplify the model and use well-documented libraries (Scikit-learn, Pandas).</i>
<b><i>Team coordination difficulties</i></b>	<i>Low</i>	<i>Medium</i>	<i>Hold regular team meetings and track progress through GitHub.</i>
<b><i>Learning curve for new tools</i></b>	<i>Medium</i>	<i>Medium</i>	<i>Allocate time for learning and share resources among team members.</i>

## 6. Quality Assurance

Planned Quality Objectives:

- Deliver all documentation on time and in the required format.
- Develop a working prototype that produces logical, relevant book recommendations.
- Maintain a clear and traceable version history via GitHub.

Planned Evaluation Methods:

- Instructor review and milestone feedback
- Peer review within the team before each submission
- Continuous document updates based on supervisor feedback

Constraints:

- The project is limited by time (one semester) and team size.
- Workload balance will be adjusted based on available time per member.
- All development will rely on publicly available datasets and open tools.

## 7. Appendix

- Planned task matrix (to be updated after development begins)

Task	Description	Assigned Members
Requirement Analysis	Identify functional and non-functional requirements, define scope, and collect datasets.	All Members
System Design	Design overall system architecture, algorithm structure, and database schema.	All Members
Frontend Development	Create user interface for book rating, recommendations, and profile management.	Samet, İclal
Backend & Database Setup	Implement data storage, API connections, and user authentication.	Melih, Samet
Machine Learning Integration	Develop and integrate recommendation model (content-based filtering).	Melih, Samet
Testing & Validation	Perform functional testing, bug fixing, and model accuracy evaluation.	All Members
Documentation & Presentation	Prepare final report, presentation, and submission package.	All Members

- Gantt chart draft

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Integrati on													
Testing & Validati on													
Docume ntation & Presenta tion													

- Reference dataset links:

<https://www.kaggle.com/datasets/arashnic/book-recommendation-dataset>

## 8. References

- IEEE 1058 Project Management Standard
- ISO/IEC 12207 Software Life Cycle Process
- Kaggle & Goodreads Book Recommendation Datasets
- TOBB ETÜ Project Guidelines 2025