

Effort Estimation

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We used Bottom-up estimation. Bottom-up estimation is a project estimation method that breaks the project down into smaller, manageable tasks. Each task is individually estimated, and then all estimates are summed up to determine the total effort required for the project.

Effort Estimation for Each Phase:

Key Phases	Person-Hour
Requirements gathering, UI/UX design, database schema design	$\sim 10 + 12 + 16 =$ ~ 38 hours
Implement search functionality and genre filtering	$\sim (60 + 70 + 30)/2 =$ ~ 80 hours
Develop watchlist management and user authentication	$\sim (60 + 70 + 30)/2 =$ ~ 80 hours
Conduct testing and debugging	$\sim 40 + 24 + 20 =$ ~ 84 hours
Final improvements, presentation	~ 15 hours

Bottom-Up Estimation (Task Breakdown Approach)

To ensure a more detailed and accurate estimate, we decomposed the project into phases and tasks and estimated the effort for each:

Total Project Effort (Bottom-Up Method)

Summing up all tasks:

$10+12+16+60+70+30+40+15+24+20 = 297$ total hours

Effort Estimation per Task:

Person-Hours: total time spent by task contributors

Task	Estimated Effort (Person-Hours)	Responsible Members
Defining functional & non-functional requirements	10	All team members
UI/UX Wireframes	12	Frontend Developers
Database Schema & API Design	16	Backend Developers
Frontend Development	60	Frontend Developers
Backend Development	70	Backend Developers

API Integration & Testing	30	Backend + Frontend
Unit & Integration Testing	40	All members (own code)
Writing Project Documentation (3 sessions)	15	All team members
Merging & Resolving Conflicts	24	All team members (secondary task)
Debugging, Optimization, and Final Review	20	All team members

Task Matrix

Tasks	Esma Nur	Feyza	Merve	Tarık Şamil
Effort Estimation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>