

# BACKEND TESTER DOCUMENTATION

## 1. Test Strategy (Backend)

The purpose of backend testing is to verify that all API endpoints function correctly according to role-based authorization rules, data integrity constraints, and business logic defined in the system.

### Tested Roles

- another
- student
- advisor
- admin

### Tested Features

- Authentication & Authorization
- Thesis management
- Role-based access control
- Comments & approval logic
- Statistics & analytics
- Favorites, downloads, citations

## 2. Test Environment (Backend)

Component	Description
Runtime	Node.js
Framework	Express.js
Database	PostgreSQL
Testing Tool	Postman
OS	Windows
Server Port	5000

### 3. Backend Test Cases

ID	Endpoint	Method	Role	Test Scenario	Expected Result	Status
BE-01	/api/auth/login	POST	All	Valid login	JWT token returned	Pass
BE-02	/api/auth/login	POST	All	Invalid password	401 Unauthorized	Pass
BE-03	/api/theses	POST	Admin	Upload thesis	Thesis created	Pass
BE-04	/api/theses	POST	Student	Upload thesis	403 Forbidden	Pass
BE-05	/api/theses/{id}	DELETE	Admin	Delete thesis	Thesis deleted	Pass
BE-06	/api/theses/{id}	DELETE	Advisor	Delete thesis	Access denied	Pass
BE-07	/api/theses	GET	All	List theses	Thesis list returned	Pass
BE-08	/api/theses/{id}/assign	POST	Admin	Assign student & advisor	Assignment successful	Pass
BE-09	/api/comments	POST	Advisor	Add comment	Comment saved	Pass
BE-10	/api/comments	POST	Student	Add comment	Pending approval	Pass
BE-11	/api/comments/{id}/approve	PUT	Admin	Approve comment	Comment visible	Pass

BE - 12	/api/comments/{id}	DELETE	Admin	Delete comment	Comment removed	Pass
BE - 13	/api/analytics	GET	Admin	View site stats	Statistics returned	Pass
BE - 14	/api/analytics	GET	Advisor	View thesis stats	Limited stats returned	Pass
BE - 15	/api/favorites	POST	All	Add thesis to favorites	Favorite saved	Pass

## 4. Backend Test Results

- Role-based access control works correctly.
- Unauthorized actions are blocked successfully.
- Data integrity is preserved in all operations.
- Business rules (comment approval, thesis upload restrictions) are enforced