

Task Manager API



Brief Documentation on Setup & Running the Application

Prerequisites

- PHP >= 8.1
- Composer
- Laravel 10+
- MySQL or compatible DB
- Node.js & npm (for frontend assets, if needed)

Setup Steps

```
# 1. Clone the project
git clone <your_repo_url>
cd task-manager-api

# 2. Install PHP dependencies
composer install

# 3. Create environment file
cp .env.example .env

# 4. Generate app key
php artisan key:generate

# 5. Set DB credentials in .env
DB_DATABASE=task_db
DB_USERNAME=root
DB_PASSWORD=your_password

# 6. Run migrations and seeders
php artisan migrate --seed

# 7. Serve the app
php artisan serve

# 8. (Optional) Queue listener
php artisan queue:work
```

Project Structure Overview

```
├─ app/
│   └─ Http/
│       └─ Controllers/ # Task, Auth, User controllers
│       └─ Middleware/  # Role middleware
│   └─ Models/          # Task, User, Dependency
│   └─ Services/        # Business logic
├─ routes/
│   └─ api.php          # All API routes
├─ database/
│   └─ migrations/
│   └─ seeders/
└─ tests/              # Feature & unit tests
```

Authentication

- **Login Endpoint:** `POST /api/login`
- Uses token-based auth via Laravel Sanctum/Passport
- Seeded actors:
- Manager: `manager@example.com`
- User: `user@example.com`

Tasks API Endpoints

Create Task (*Manager Only*)

`POST /api/tasks`

Body:

```
{
  "title": "New Task",
  "description": "Optional",
  "due_date": "2025-08-10 15:00"
}
```

Get Tasks with Filters (*Manager + Assigned User*)

```
GET /api/tasks?status=1&user_id=5&start_date=2025-07-01&end_date=2025-08-01
```

Get Task Details (*Assigned User / Manager*)

```
GET /api/tasks/{id}
```

Assign Task to User (*Manager Only*)

```
PATCH /api/tasks/{id}/assign-user
```

Add Dependencies (*Manager Only*)

```
POST /api/tasks/{id}/add-dependencies
```

Body:

```
{
  "dependency_ids": [3, 6, 9]
}
```

Update Task Details (*Manager Only*)

```
PUT /api/tasks/{id}
```

Update Task Status (*Assigned User Only*)

```
PATCH /api/tasks/{id}/update-status
```

Body:

```
{
  "status": 2  // 1 = Pending, 2 = Completed, 3 = Cancelled
}
```

Role-Based Authorization

Action	Manager	User
Create task	✓	✗
Update task details	✓	✗
Assign task to user	✓	✗
View assigned tasks	✓	✓
Update status (assigned)	✗	✓

Tech Stack

- Laravel 10
- Sanctum / Passport (Token Auth)
- MySQL
- PHPUnit (Testing)
- RESTful standards

Testing

```
php artisan test
```

Includes tests for:

- Auth
- Task creation & filtering
- Role authorization
- Status update

Notes

- Tasks cannot be marked complete if dependencies are incomplete
- Queue jobs & listeners used for background processes (optional)
- Full-text search supported on title + description



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