

Perfect 👍

Below is a **start-to-finish, production-style task list** for your **Core Django LMS**.

Follow this **step by step**, and you'll finish with a **portfolio-grade project** that smoothly transitions to DRF later.

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## ✅ LMS – Detailed Development Task List (Core Django)

**Rule:** Do not jump ahead.

Complete each phase fully before moving to the next.

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### ● PHASE 0 — Planning & Setup

#### 0.1 Project Planning

- Read PRD fully
  - Finalize feature scope (no extra features yet)
  - Draw rough ER diagram (paper is fine)
  - Decide app names
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#### 0.2 Environment Setup

- Create virtual environment
  - Install Django
  - Start Django project `lms`
  - Create `.gitignore`
  - Initialize Git repository
  - Create initial `README.md`
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### ● PHASE 1 — Project Structure & Core Configuration

## 1.1 Create Apps

- Create apps:
    - `users`
    - `courses`
    - `lessons`
    - `enrollments`
    - `quizzes`
    - `dashboard`
  - Register apps in `INSTALLED_APPS`
- 

## 1.2 Core Settings

- Configure templates directory
  - Configure static files
  - Configure media files
  - Add custom context processors (if needed)
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# PHASE 2 — User Management & Authentication

## 2.1 Custom User Model

- Extend `AbstractUser`
  - Add `role` field (student / instructor / admin)
  - Update `AUTH_USER_MODEL`
  - Run migrations
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## 2.2 Authentication System

- User registration
  - Login & logout
  - Role-based redirects
  - Secure password handling
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## 2.3 Permissions & Access Control

- Custom decorators / mixins
  - Instructor-only access
  - Student-only access
  - Admin overrides
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## PHASE 3 — Course Management

### 3.1 Course Models

- Create `Course` model
  - Add fields:
    - title
    - description
    - category
    - thumbnail
    - instructor
    - status (Draft / Published)
  - Add timestamps
  - Run migrations
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### 3.2 Course CRUD

- Instructor can create course
  - Instructor can edit course
  - Instructor can delete course
  - Validate ownership
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### 3.3 Course Visibility

- Only published courses visible to students
  - Draft courses visible only to instructors
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## PHASE 4 — Modules & Lessons

### 4.1 Module Model

- Create **Module** model
  - Link to course
  - Ordering support
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## 4.2 Lesson Model

- Create **Lesson** model
  - Fields:
    - title
    - content
    - video (optional)
    - module
    - order
  - Secure lesson access
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## 4.3 Lesson Flow

- Sequential lesson navigation
  - Disable skipping (optional)
  - Lesson detail view
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# PHASE 5 — Enrollment System

## 5.1 Enrollment Model

- Create **Enrollment** model
  - Prevent duplicate enrollments
  - Timestamp enrollment
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## 5.2 Enrollment Logic

- Enroll button
  - Enrollment validation
  - Restrict lesson access to enrolled users
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## PHASE 6 — Progress Tracking

### 6.1 Lesson Progress Model

- Create `LessonProgress` model
  - Track completion per user
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### 6.2 Progress Logic

- Mark lesson as completed
  - Auto-calculate progress
  - Prevent double completion
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### 6.3 Progress UI

- Progress bar per course
  - Completed lesson indicator
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## PHASE 7 — Quiz & Assessment System

### 7.1 Quiz Models

- Create `Quiz` model
  - Create `Question` model
  - Support MCQ format
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### 7.2 Quiz Logic

- Quiz attempt form
  - Auto-evaluation
  - Store scores
  - One attempt per user
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## 7.3 Quiz Access Rules

- Quiz unlocks after lesson completion
  - Prevent reattempt
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## PHASE 8 — Dashboards

### 8.1 Student Dashboard

- Enrolled courses list
  - Progress overview
  - Quiz scores
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### 8.2 Instructor Dashboard

- Created courses list
  - Enrolled students count
  - Completion statistics
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## PHASE 9 — Admin & Optimization

### 9.1 Admin Panel

- Register all models
  - Custom admin views
  - Filters & search
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### 9.2 Query Optimization

- Use `select_related`
  - Use `prefetch_related`
  - Reduce N+1 queries
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## PHASE 10 — UI & UX Polish

### 10.1 Templates

- Base layout
  - Navigation bar
  - Flash messages
  - Error pages
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### 10.2 Forms & Validation

- Server-side validation
  - User-friendly error messages
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## PHASE 11 — Testing & Stability

### 11.1 Manual Testing

- Student flow testing
  - Instructor flow testing
  - Permission testing
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### 11.2 Django Tests (Optional but Strong)

- Model tests
  - View tests
  - Permission tests
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## PHASE 12 — Documentation & Portfolio Prep

### 12.1 Documentation

- Update `README.md`
- Add project overview
- Add setup instructions

- Add screenshots
  - Add future roadmap
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## 12.2 Final Cleanup

- Remove unused code
  - Check `.gitignore`
  - Run `makemigrations` & `migrate`
  - Run server cleanly
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# PHASE 13 — Ready for DRF Transition

## 13.1 DRF Preparation

- Identify serializers mapping
  - Identify API endpoints
  - Separate business logic from views
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## Final Outcome

After completing this:

- You will **fully understand Django**
  - DRF will feel **natural**
  - Your portfolio will contain a **real backend system**
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## Next Step?

If you want, I can:

- Break **PHASE 1** into **day-by-day tasks**
- Create **model code templates**
- Act as a **daily development guide**
- Prepare a **DRF roadmap**

Just tell me how you want to proceed 🙌



