1. **Course Category Service** (**course-category.service.js**):
   * CRUD operations for categories
   * Hierarchy management
   * Validation and error handling
   * Multi-tenant support
2. **Course Category Controller** (**course-category.controller.js**):
   * Request handling for all category operations
   * API documentation in comments
   * Error handling with catchAsync
3. **Course Category Routes** (**course-category.routes.js**):
   * Route definitions
   * Authentication and validation middleware
   * Special route for hierarchy
4. **API Documentation** (**api.md**):
   * Comprehensive documentation for all endpoints
   * Request/response examples
   * Error handling documentation
   * Query parameter details

The course category endpoints are:

Code

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POST /api/course-categories - Create new category

GET /api/course-categories - List categories

GET /api/course-categories/hierarchy - Get category tree

GET /api/course-categories/:id - Get category details

PATCH /api/course-categories/:id - Update category

DELETE /api/course-categories/:id - Delete category

Special features implemented:

1. Hierarchical category structure
2. Category name uniqueness within organization
3. Validation for parent categories
4. Prevention of circular references
5. Safety checks before deletion
6. Multi-tenant support
7. Proper error handling