Regarding Validations:

You didn't specify whether category validation is needed during product creation. However, for validation, the requirement is that every product must have at least one category.

No mention was made regarding description validation, but it is optional when adding a new product.

A simple pagination has been implemented for displaying products. I hope this is acceptable.

Validations Details:

CreateProductRequest.php: Located at app\Http\Requests\CreateProductRequest.php, this file contains all the necessary validations for product-related inputs.

CategoryExists.php: The custom rule to check if a category exists in the database is implemented in app\Rules\CategoryExists.php.

developed using Laravel version 10 and PHP version $8.1.10\ .$