

Implementación de Testing Automatizado

(unit test + integración)

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¿Qué es testing automatizado?

El testing automatizado consiste en la ejecución automática de pruebas sobre el código, con el objetivo de verificar que el sistema funciona como se espera. A diferencia de las pruebas manuales, estas pueden ejecutarse repetidamente sin intervención humana y permiten detectar errores de forma temprana.

Diferencia entre prueba unitaria y prueba de integración

Prueba unitaria:

- Evalúa una función aislada.
- Verifica lógica específica.
- No depende de otros módulos.

Prueba de integración:

- Evalúa el funcionamiento conjunto de múltiples módulos.
- Verifica el flujo completo del sistema.
- Detecta errores en la interacción entre componentes.

Test usando vitest en el proyecto

```
pnpm --filter @app/core test
```

```
✓ core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/core/test/calculateQuotes.test.ts (2)
```

```
Test Files 82 passed (82)
Tests 861 passed (861)
```

```
Start at 14:07:53
```

```
Duration 2.95s (transform 1.01s, setup 0ms, collect 4.11s, tests 1.25s,
environment 27ms, prepare 10.29s)
```

```
nad@NADNOT-Acer:~/proyecto/3d-print-pricer$
```

```
pnpm --filter @app/api test
```

```
> @app/api@0.0.1 test /home/nad/proyecto/3d-print-pricer/apps/api
> vitest run

RUN v2.1.9 /home/nad/proyecto/3d-print-pricer/apps/api

✓ test/quote.test.ts (16)
  ✓ API - Quote Endpoint Integration Tests (16)
    ✓ POST /quote - Success Cases (4)
      ✓ should return 200 with correct calculation for single supply
      ✓ should handle multiple supplies
      ✓ should apply profit percentage correctly
      ✓ should include item breakdown
    ✓ POST /quote - Validation Errors (6)
      ✓ should return 400 for negative profit percent
      ✓ should return 400 for empty supplies array
      ✓ should return 400 for missing required fields
      ✓ should return 400 for invalid supply unit
      ✓ should return 400 for non-numeric values
      ✓ should return 400 for missing supply id
    ✓ GET /health - Health Check (1)
      ✓ should return 200 with ok: true
  ✓ Edge Cases (3)
    ✓ should handle zero profit percent
    ✓ should handle very large numbers
    ✓ should handle decimal quantities
  ✓ Content-Type and Headers (2)
    ✓ should accept application/json content type
    ✓ should return application/json response

Test Files 1 passed (1)
Tests 16 passed (16)
Start at 14:11:10
Duration 727ms (transform 71ms, setup 0ms, collect 264ms, tests 64ms, environment 0ms, prepare 117ms)
```

```
pnpm --filter @app/web test
```

```
✓ Initial Render (7)
  ✓ should render title in Spanish
  ✓ should display profit input with default value 30
  ✓ should display supply table with Spanish headers
  ✓ should display totals section in Spanish
  ✓ should have default supply (PLA) selected
  ✓ should display action buttons in Spanish
  ✓ should display material dropdown
✓ Material Selection (3)
  ✓ should have PLA, PETG, ABS, ASA, TPU options
  ✓ should change material selection
  ✓ should display selected material in table
✓ Local Calculation (5)
  ✓ should calculate total cost for default PLA supply
  ✓ should calculate suggested price with 30% profit
  ✓ should update calculation when profit changes
  ✓ should update calculation when supply quantity changes
  ✓ should update calculation when unit cost changes
✓ Supply Management (4)
  ✓ should add new supply when clicking 'Agregar Insumo'
  ✓ should remove supply when clicking 'Eliminar'
  ✓ should allow multiple supplies
  ✓ should change supply unit from gramos to fijo
✓ App Component - Integration Tests (8)
  ✓ Backend Calculation (5)
    ✓ should call backend when clicking 'Calcular en Servidor'
    ✓ should display backend results after calculation
    ✓ should show loading state while calculating
    ✓ should display error message on backend failure
    ✓ should show breakdown of backend items in Spanish
  ✓ Return to Local Calculation (1)
    ✓ should return to local calculation when clicking button
  ✓ Source Display (2)
    ✓ should show 'local' as source initially
    ✓ should change source to 'servidor' after backend calculation

Test Files 1 passed (1)
Tests 27 passed (27)
Start at 14:13:28
Duration 1.77s (transform 95ms, setup 99ms, collect 227ms, tests 417ms,
environment 607ms, prepare 123ms)
```