

## Feature: POST API for Product Information

**Scenario:** Successfully create a product with all required fields

**Given** the API endpoint for creating a product

**When** I send a POST request with valid data

```
{  
  "name": "Apple MacBook Pro 16",  
  "data": {  
    "year": 2022,  
    "price": 3000.99  
  }  
}
```

**Then** the response status code should be 201

**And** the response should have the following structure

```
{  
  "id": "ff80818189fcfaef018a0df55e4a1249",  
  "name": "Apple MacBook Pro 16",  
  "createdAt": "2023-08-19T13:21:38.890+00:00",  
  "data": {  
    "year": 2022,  
    "price": 3000.99  
  }  
}
```

**Scenario:** add a request to create a product with an empty request

**Given** the API endpoint for creating a product

**When** I send a POST request with an empty request body

```
{}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating that the request body is empty

**Scenario:** Attempt to create a product with a non-unique name

**Given** the API endpoint for creating a product

**When** I send a POST request with a product name that already exists in the system

```
{  
  "name": "Apple MacBook Pro 16",  
  "data": {  
    "year": 2023,  
    "price": 3000.99  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating that the name is not unique

**Scenario:** Attempt to create a product with a name that is too short

**Given** the API endpoint for creating a product

**When** I send a POST request with a product name that is less than 3 characters

```
{  
  "name": "A",  
  "data": {  
    "year": 2023,  
    "price": 3000.99  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating the name is too short

**Scenario:** Attempt to create a product with a name that is too long

**Given** the API endpoint for creating a product

**When** I send a POST request with a product name that exceeds 20 characters

```
{  
  "name": "hamadaaaaaaaaaaaaaaaaaaaaaaaaaaaaa",  
  "data": {  
    "year": 2023,  
    "price": 3000.99  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating the name is too long

**Scenario:** Attempt to create a product with an invalid year

**Given** the API endpoint for creating a product

**When** I send a POST request with a year that is not within the range 1900 to the current year

```
{  
  "name": "Apple MacBook Pro 16",  
  "data": {  
    "year": 2025,  
    "price": 3000.99  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating the year is invalid

**Scenario:** Attempt to create a product with an invalid year

**Given** the API endpoint for creating a product

**When** I send a POST request with a year that is not within the range 1900 to the current year

```
{  
  "name": "Apple MacBook Pro 16",  
  "data": {  
    "year": 1800,  
    "price": 3000.99  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating the year is invalid

**Scenario:** Attempt to create a product with a non-integer year

**Given** the API endpoint for creating a product

**When** I send a POST request with a non-integer value for the "year" field

```
{  
  "name": " Apple MacBook Pro 15",  
  "data": {  
    "year": "2023",  
    "price": 3000.99  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating that the "year" field must be an integer

**Scenario:** Attempt to create a product with a price of zero

**Given** the API endpoint for creating a product

**When** I send a POST request with a price of 0

```
{  
  "name": "Apple MacBook Pro 15",  
  "data": {  
    "year": 2023,  
    "price": 0  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating the price cannot be zero

**Scenario:** Attempt to create a product with an invalid non-float price

**Given** the API endpoint for creating a product

**When** I send a POST request with a non-float value for the "price" field

```
{  
  "name": "Invalid Price Product",  
  "data": {  
    "year": 2023,  
    "price": "Not a Number"  
  }  
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating that the "price" field must be a valid number (float)

**Scenario:** Successfully create a product with optional fields

**Given** the API endpoint for creating a product

**When** I send a POST request with optional fields

```
{  
  "name": "Apple MacBook Pro 17",  
  "data": {  
    "year": 2023,  
    "price": 2000.99,  
    "CPU model": "Intel Core i9",  
    "Hard disk size": "2 TB"  
  }  
}
```

**Then** the response status code should be 201

**And** the response should have the following structure

```
{  
  "id": "ff80818189fcfaef018a0f30af5a125a",  
  "name": "Apple MacBook Pro 17",  
  "createdAt": "2023-08-19T19:06:03.483+00:00",  
  "data": {  
    "year": 2023,  
    "price": 2000.99,  
    "CPU model": "Intel Core i9",  
    "Hard disk size": "2 TB"  
  }  
}
```

**Scenario:** Attempt to create a product with an invalid CPU model exceeding the maximum character limit

**Given** the API endpoint for creating a product

**When** I send a POST request with a "CPU model" that exceeds 50 characters

```
{
  "name": "Apple MacBook Pro 19",
  "data": {
    "year": 2023,
    "price": 1499.99,
    "CPU model": "This CPU model field exceeds the maximum character limit of fifty characters and is therefore invalid."
  }
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating that the "CPU model" field exceeds the maximum character limit

**Scenario:** Attempt to create a product with an invalid hard disk size exceeding the maximum character limit

**Given** the API endpoint for creating a product

**When** I send a POST request with a "Hard disk size" that exceeds 20 characters

```
{
  "name": "Apple MacBook Pro 18",
  "data": {
    "year": 2023,
    "price": 1499.99,
    "Hard disk size": "This Hard disk size field exceeds the maximum of twenty characters and is therefore invalid."
  }
}
```

**Then** the response status code should be 400

**And** the response should contain an error message indicating that the "Hard disk size" field exceeds the maximum character limit