



# Unit Testing in Acumatica ERP

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# Agenda

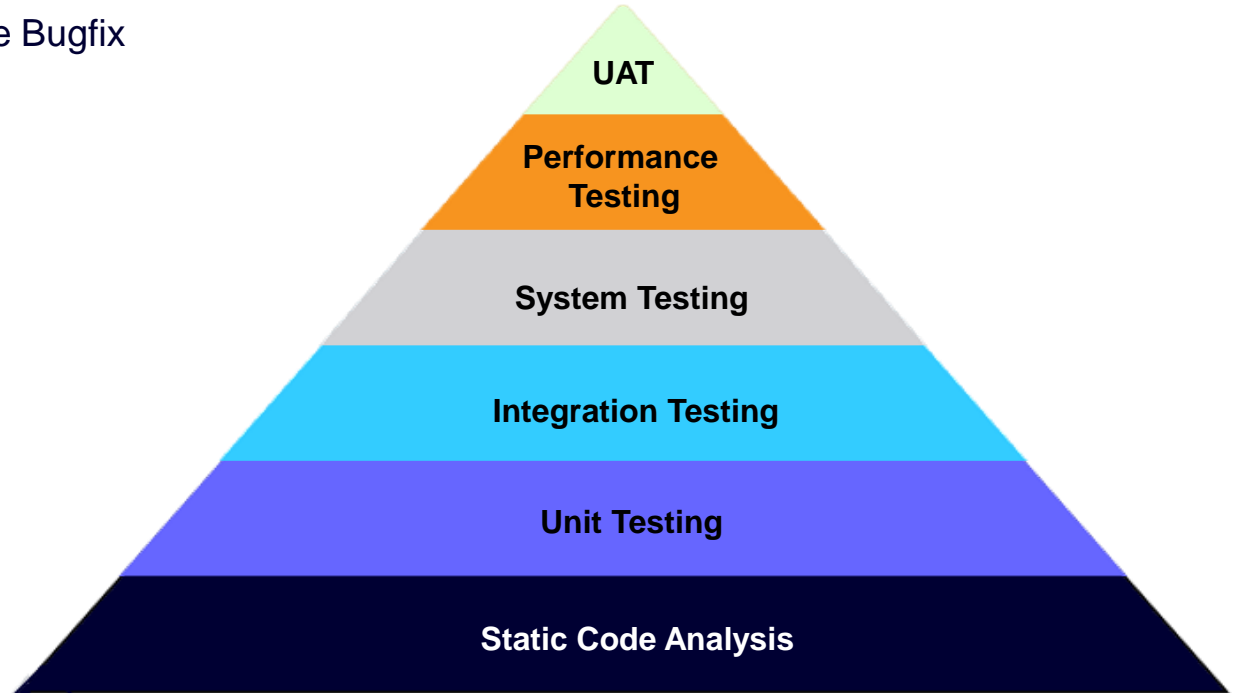
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- Introduction
- Acumatica Unit Testing Framework Overview
- Mocking Data for Unit Testing
- Demo
- Summary

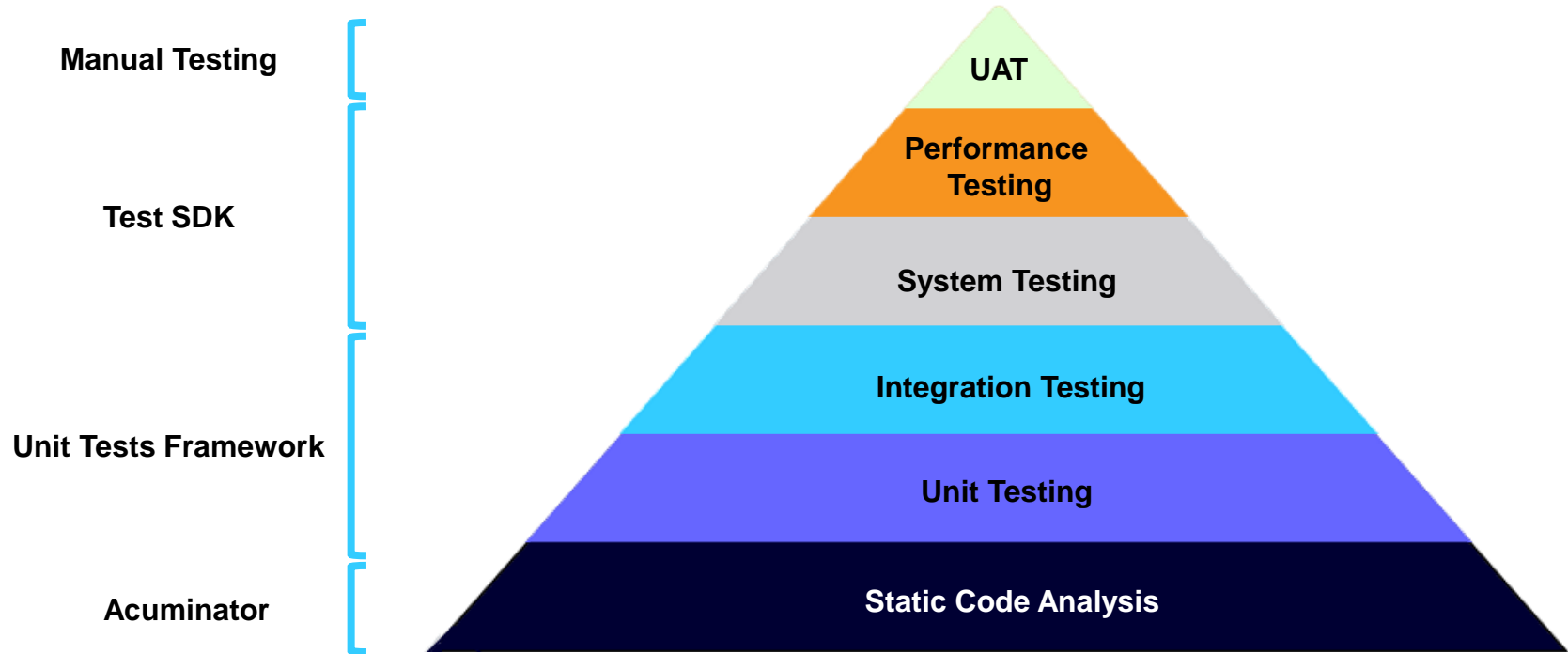
# Types of Software Testing

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Feedback Time / Cost of the Bugfix



# Types of Testing in Acumatica



# Unit Testing

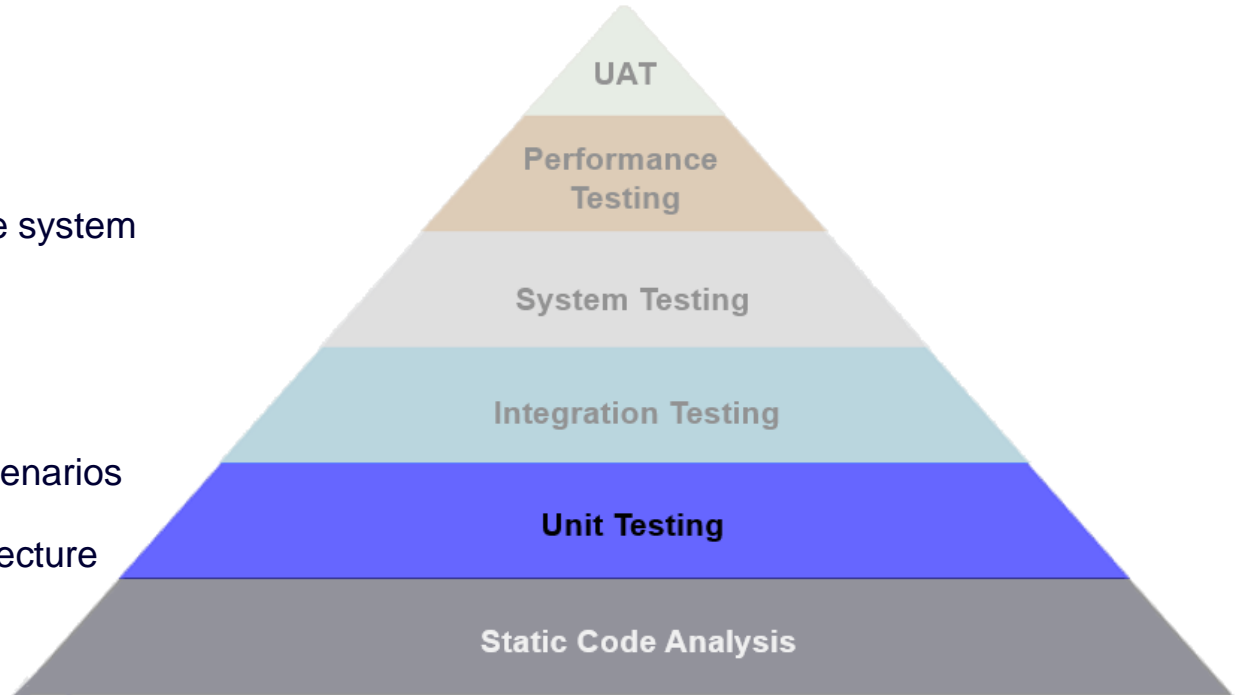
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## Pros:

- Fast execution
- Fast development
- Tests exact function of the system

## Cons:

- Does not test real user scenarios
- Requires a specific architecture



# Acumatica Unit Tests Framework Overview

# Unit Tests Framework Overview

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- Tests **PXGraph** behavior
- Code is very similar to our Acumatica Framework code
- Selection of records from the database is easy to mock-up
- Based on **Xunit** (popular .Net Unit tests framework)

## Example of Test

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```
public void Test_Calculation_UnitPrice()
{
    // Preparing the data
    SOOrderEntry graph = PrepareGraph();

    // Perform an action
    var orderLine = graph.Transactions.Insert();
    orderLine.InventoryID = stockItem.InventoryID;
    orderLine.Qty = 1;
    orderLine = graph.Transactions.Update(orderLine);

    // Check the result
    Assert.Equal("LBS", orderLine.UOM);
    Assert.InRange(orderLine.CuryUnitPrice.Value, 227m, 228m);
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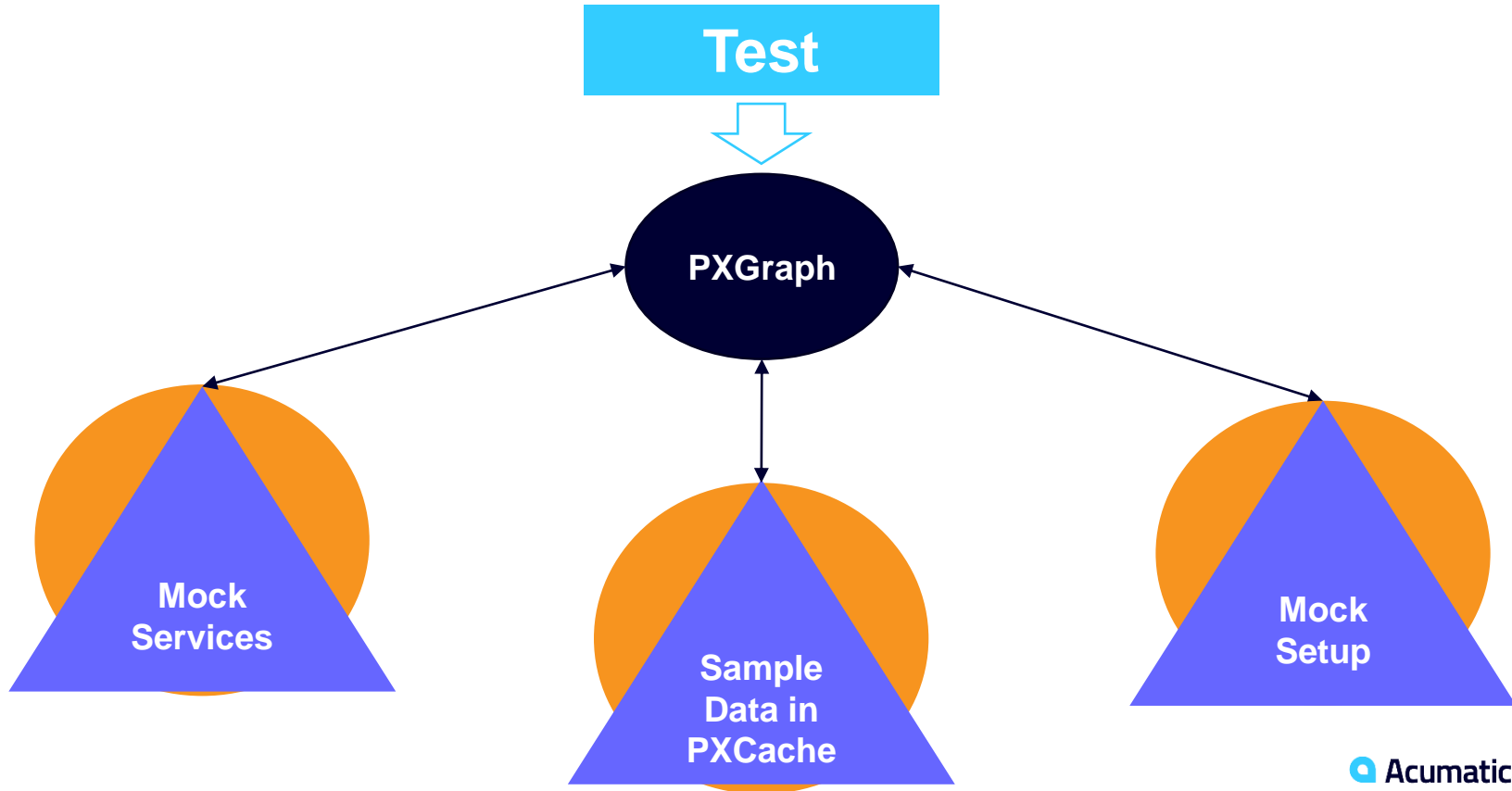
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# Mocking Data and Dependencies



## Example of Unit Test

# Example Test

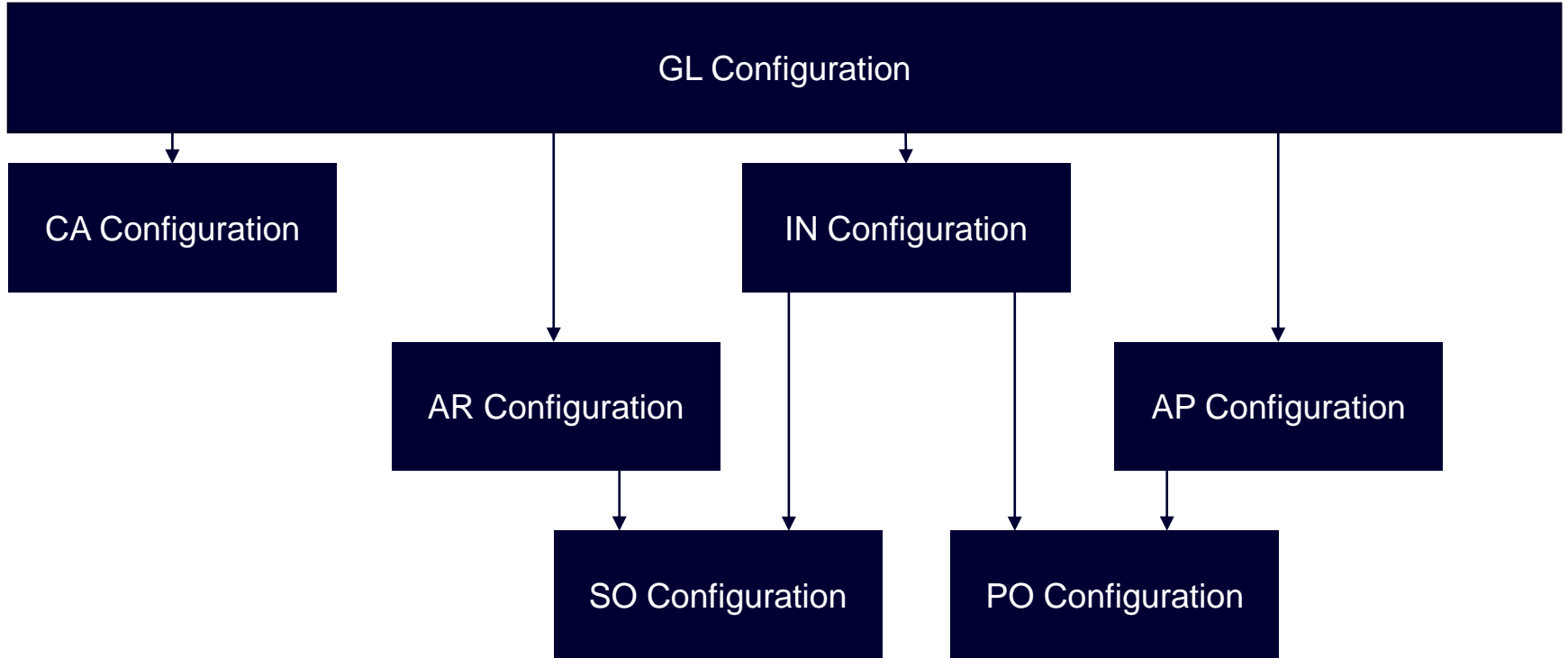
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1. Add Inventory Item with
  - Base Unit of Measure - KG
  - Sales Unit of Measure – LBS
  - Price – 500\$ for KG
2. Create a Sales Order with 1 Line
3. Check that Unit of Measure in line is Sales Unit (LBS)
4. Check that price has been recalculated properly from Price for KG to Price for LBS

# Mocking Data for Unit Tests

# Layers

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Switch to Visual Studio for demo here

# Summary

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- All types of tests are important
- Unit tests bring a lot of value
  - It works as documentation of your code
  - It helps reduce the feedback cycle about a bug with the product
  - It's beneficial from the start
- It's easy to start with Acumatica Unit Tests Framework
  - Code is similar to regular Acumatica Framework code
  - Easy to mock data
  - Easy to reuse data mocking

## Call to Action

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- Check out the GitHub repo with Unit test examples  
<https://github.com/Acumatica/UnitTestsDemo>
- Email ([dnaumov@acumatica.com](mailto:dnaumov@acumatica.com)) if you have any questions or have ideas to improve the unit tests.
- Get Involved in our Developer Community!
- Join us on **stackoverflow**: <https://stackoverflow.com/questions/tagged/acumatica/>
- Check <https://www.acumatica.com/developers/> regularly!
- Read our developer blogs: <https://www.acumatica.com/blog/category/developers/>
- Attend Summit 2021 | Hackathon 2021: <https://summit.acumatica.com/>

## Q&A



# Thank You!

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