

**2002**  
OSISOFT USERS CONFERENCE



**EXPANDING  
THE POWER OF PI**

**MONTEREY CALIFORNIA**



**OSIsoft™**

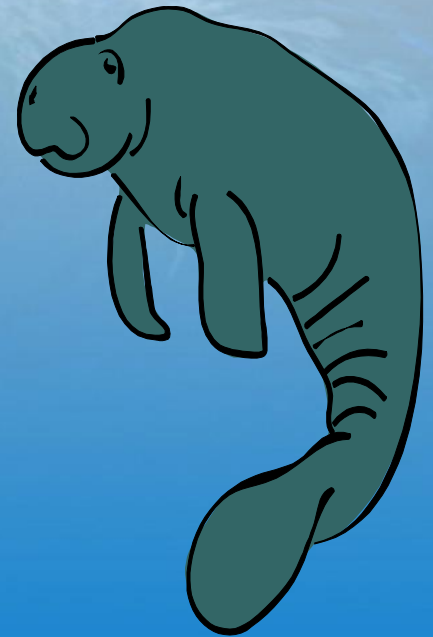
# Sigmafine 4

Ales Soudek

March 2002

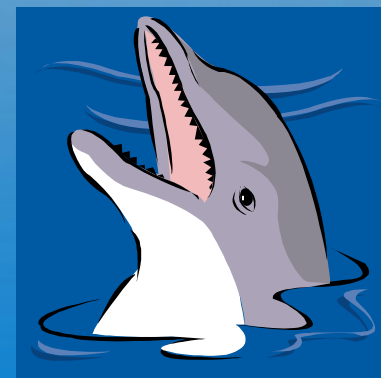
# Overview

- Sigmafine 3.x
- Sigmafine 4.0
  - Application Framework
  - Server Components
  - Client/Application Integration
  - Integration with PI ACE
- Summary
- Demonstrations



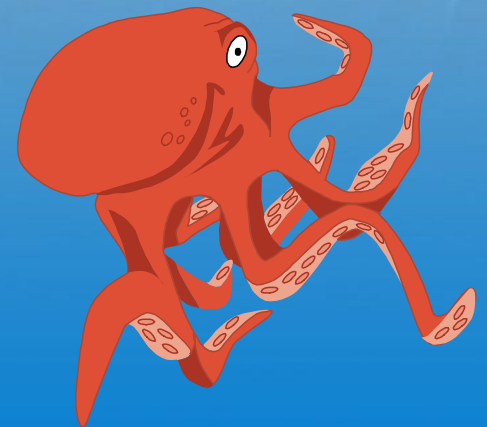
# Sigmafine 3.x

- Sigmafine Embedded Components
  - GUI
  - Finesse Scripts
  - Calculations Embedded
  - Raima Database (Velocis)
- External Components
  - Crystal Reports
  - Datafine
  - Access Database
  - Interfaces



# Sigmafine 4.0

- Redesigned from the Ground Up
- Fully integrated into PI
- First Application to Leverage the PI Application Framework
- Totally modular
  - Server components
  - Client components

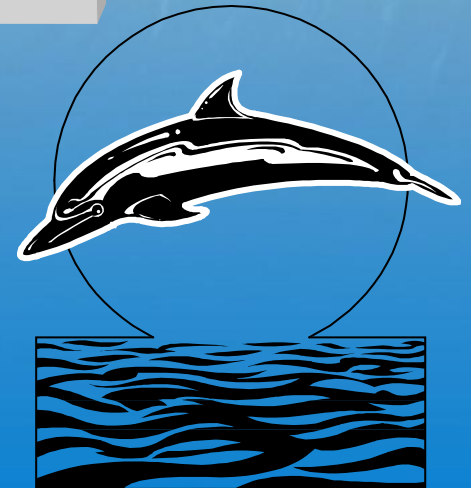


# PI System Overview

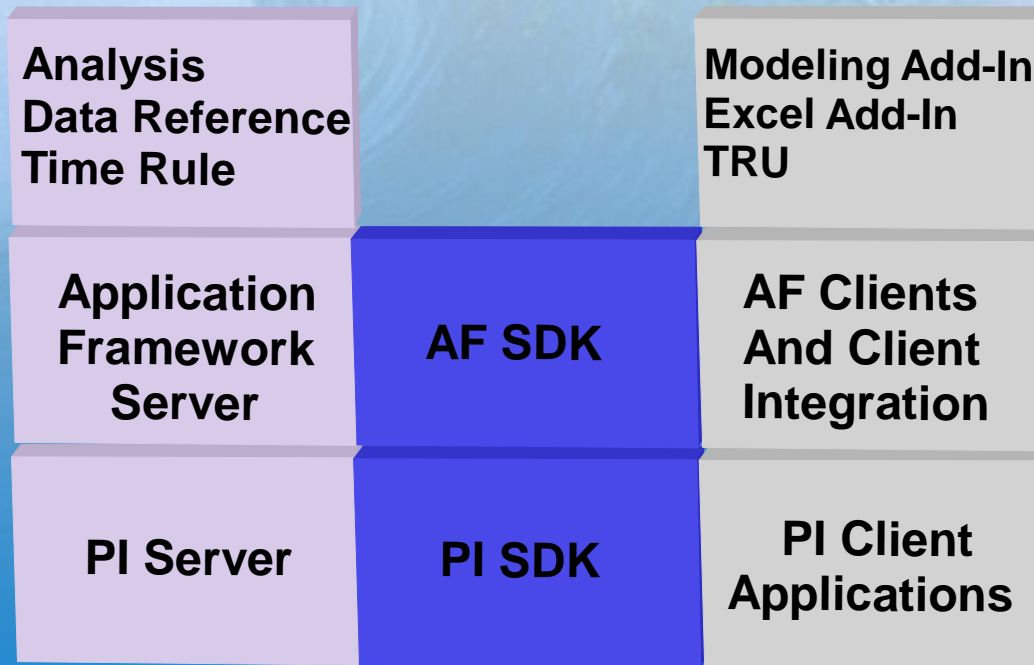
**Server**

**Data Access**

**Client Apps**

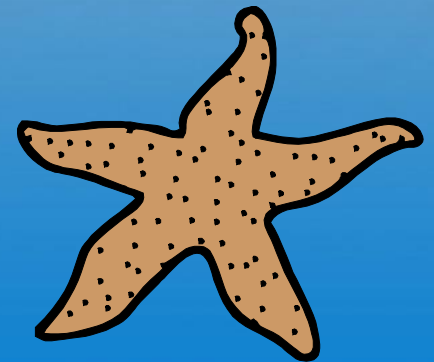


# PI System Overview



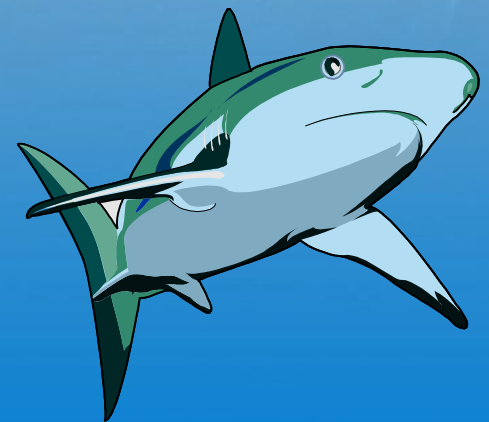
# Sigmafine Server Components

- Analysis Plugins
  - Datafine (Statistical Reconciliation Solver)
  - Composition Tracking (Solver)
  - Gross Error Detection (Rule Based)
  - User Defined



# Sigmafine Server Components

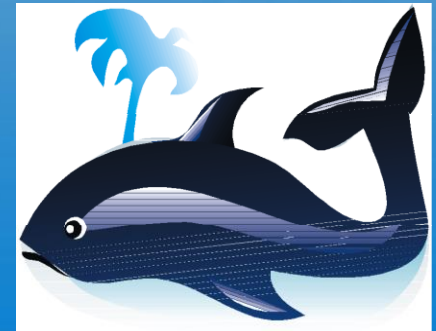
- Data Reference Plugins
  - PI UDS Points
  - ADO
  - Tank Volume Calculations
  - Volume Correction Factors
  - Shell Temperature Correction Factors
  - Meter Compensation Calculations
  - User Defined





# Sigmafine Server Components

- Element Templates
  - Standard Sigmafine Object Types:
    - Nodes, Flows, Tanks, Meters, etc.
  - User Definable
  - Elements created from Templates
  - Available for any model under the Application Framework



# Element Templates

PI Application Framework Explorer

New Commit Apply

piserver2

- Models
  - ChocolateMilkModel
- Element Templates
  - Flows
  - Measurements
    - Meter
  - Model Elements
  - Nodes
  - Transfers
  - Other
- Elements
- Transfers
- Unit-of-Measure Classes
- Tables
- Categories
- Plug-Ins
  - Analysis Rule Plug-Ins
  - Data Reference Plug-In
  - Time Rule Plug-Ins

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General Elements Attributes

Meter

Name	Description	Track Revision	Category	Value Type	Default Value	UOM	Data Ref...
Measured Volume		False	Tutorial	Double	0 gal	gallon	<None>
Volume Tolerance		False	Tutorial	Double	0 gal	gallon	<None>
*		False			-		

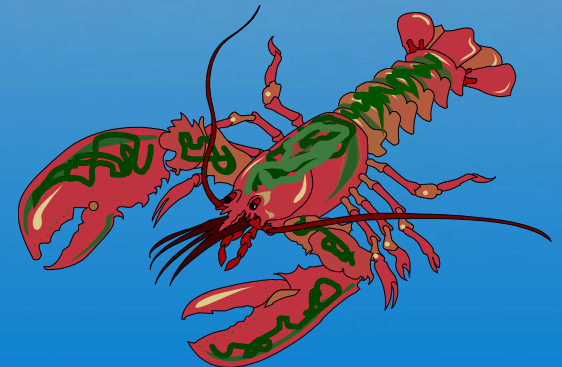
# Sigmafine Server Components

- Time Rule Plugins
  - Cases
    - Periods and Analysis Types
  - User definable



# Sigmafine Client/Application Integration

- PI Processbook 3.0
  - Modeling Add-in (Smart Symbols)
  - Create Models in Application Framework
- Excel Add-In
  - Built in knowledge of the AF SDK
- Transfer Record Utility (TRU)
  - Transfer Record Editing
  - Import/Export Engine



# Process Book Modeling Add-In

The screenshot displays the PI - ProcessBook - Model1\* software interface. The main window shows a process flow diagram with a truck, a mixer, and a tank. The interface includes a menu bar (File, Edit, View, Insert, Tools, Draw, Arrange, AF, Window, Help), a toolbar, and a status bar. The left pane shows a list of elements, and the right pane shows a tree view of the model and a properties panel for the selected 'Mixer' element.

**Elements List:**

- ChocMilkFlow
- ChocMilkMeter
- ChocMilkTruck
- MilkFlow
- MilkMeter
- MilkNode
- MilkTank1
- MilkTank2
- MilkTruck
- Mixer
- MixFlow
- MixHopper
- MixMeter
- MixTruck
- Model-Specific
- PackagingUnit

**Model1 Tree View:**

- Model Analyses
- Linked Elements
  - ChocMilkMete
  - MilkFlow
  - MilkNode
  - MilkTank1
  - Mixer
- Layers

**Mixer Properties Panel:**

- Name: Mixer
- Description: Mixes W/H
- Template: Mixer
- Type: Node
- Unique ID: 31809413
- Version: 12/31/19

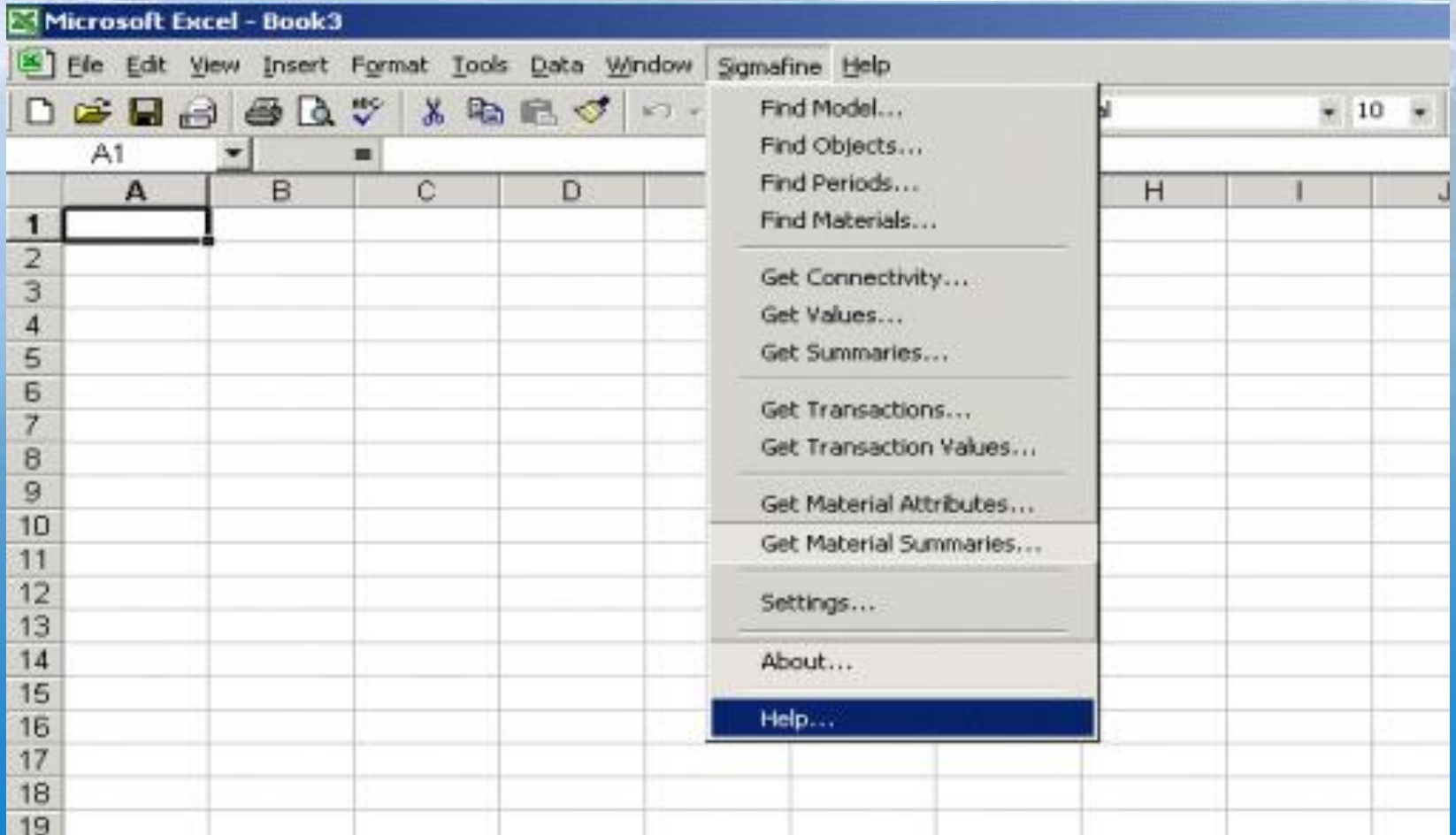
**Inputs Panel:**

Measured	Tolerance	UOM
Capacity of Tank ...	100	gals
Flow Into Tank ...	10.5	gals/sec

Ready

NUM

# Excel Add-In



# Transfer Record Utility

The screenshot displays the Microsoft Excel interface with the 'Transfer Record Utility' menu open. The menu options are:

- Attributes...
- Export Transactions...
- Import Transactions...
- Select All Transactions
- Deselect All Transactions
- Invert Selection
- Get/Put from/to PI...
- Settings...
- About...

The Excel window title is 'Microsoft Excel - Book1'. The menu bar includes 'File', 'Edit', 'View', 'Insert', 'Format', 'Tools', 'Data', 'Axum', 'Window', 'PI', 'Sigmafine', 'PI-SMT', 'PI-TRNX', and 'Help'. The toolbar contains various icons for file operations, editing, and formatting. The spreadsheet shows column headers A through G and row numbers 1 through 9. Cell A1 is selected and contains an equals sign (=).

# Sigmafine Client/Application Integration

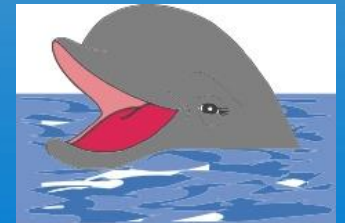
- Sigmafine Standard Report Templates
  - Excel Based
- PI Application Framework Analysis Tool
  - Tool for running Model Analysis – Part of the Framework
- PI Application Framework Explorer
  - Low level tool for exploring the Organization information – Part of the Framework





# Integration with PI-ACE

- Analysis Scheduling
  - PI-ACE Module
- Automated Scheduling of specific Data Reference calculations
  - Standard PI-ACE Module
- Users can reference PI Application Framework components directly from their own PI-ACE Modules



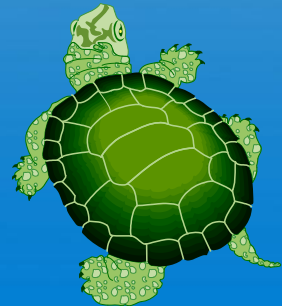
# Summary - What's it all mean?

- Fully integrated into PI system
- Customized for specific industry
- Flexible analysis rules
- Flexible time rules
- Data Exchange
  - Data comes from anywhere
- User definable templates, attributes, rules, ...

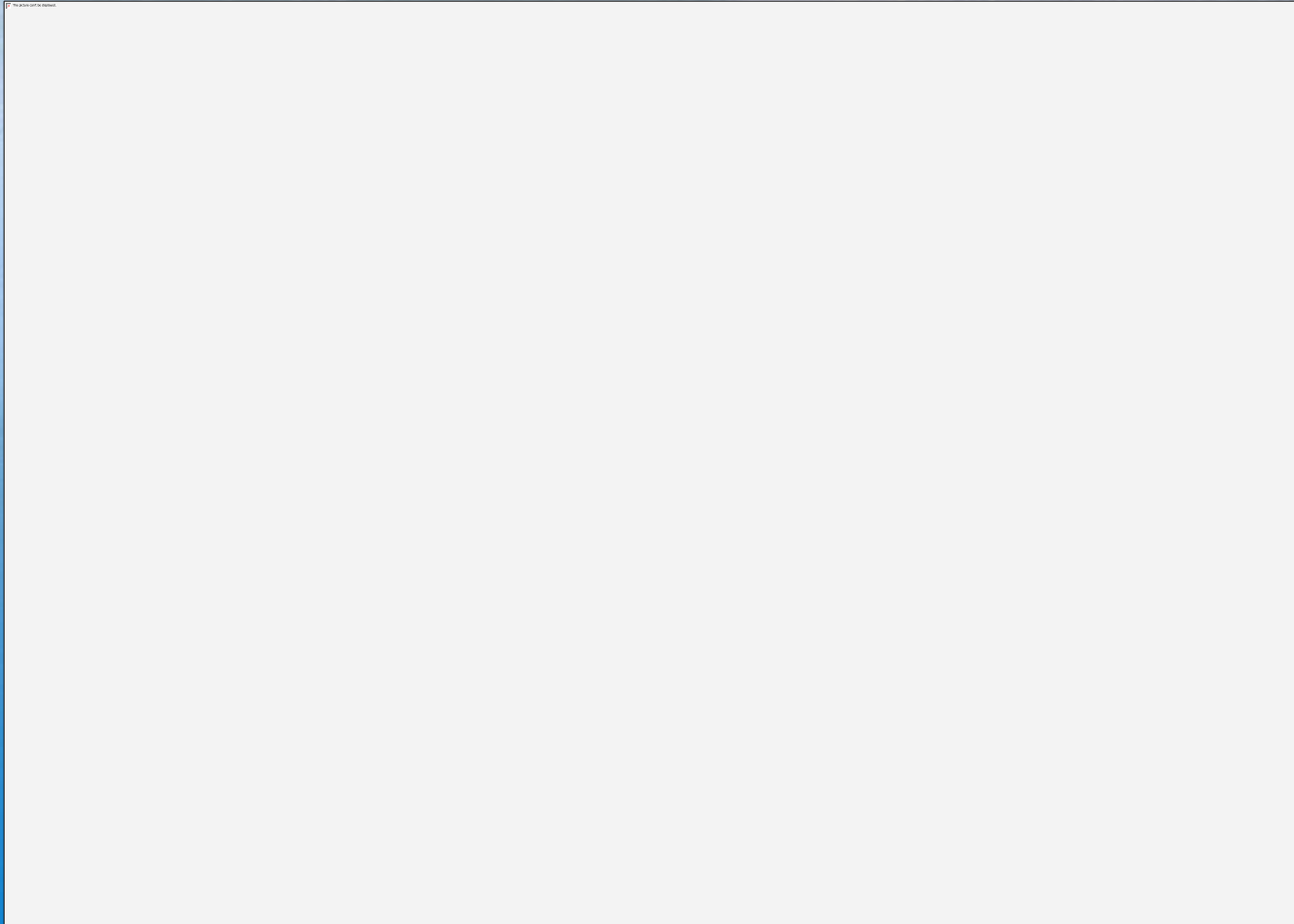


# Summary - What's it all mean? (cont.)

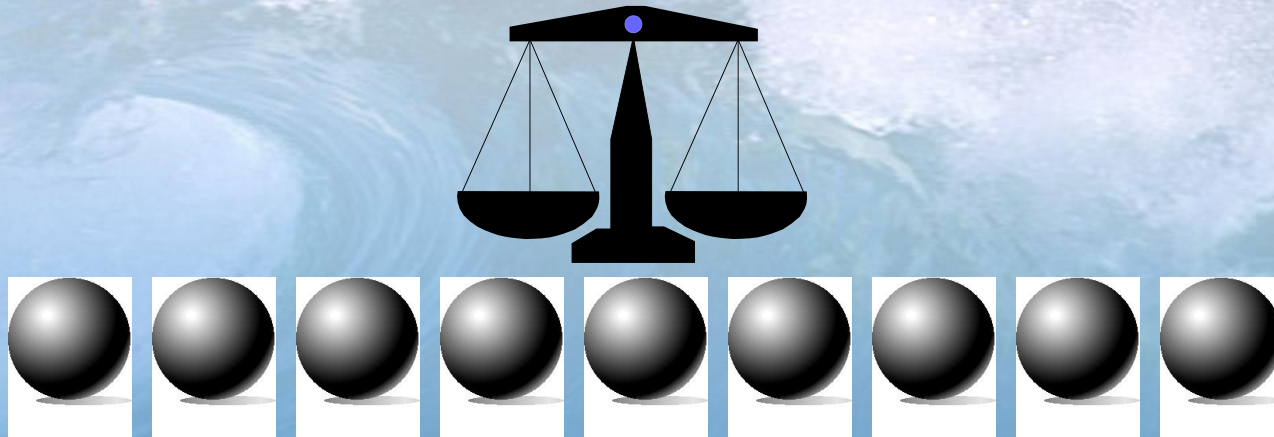
- One global model
  - Different views of global model
  - Maintenance in one location
- Presentation
  - Excel
  - Process Book
- Application insulated from data infrastructure



# The PI System



# Yearly Brain Teaser

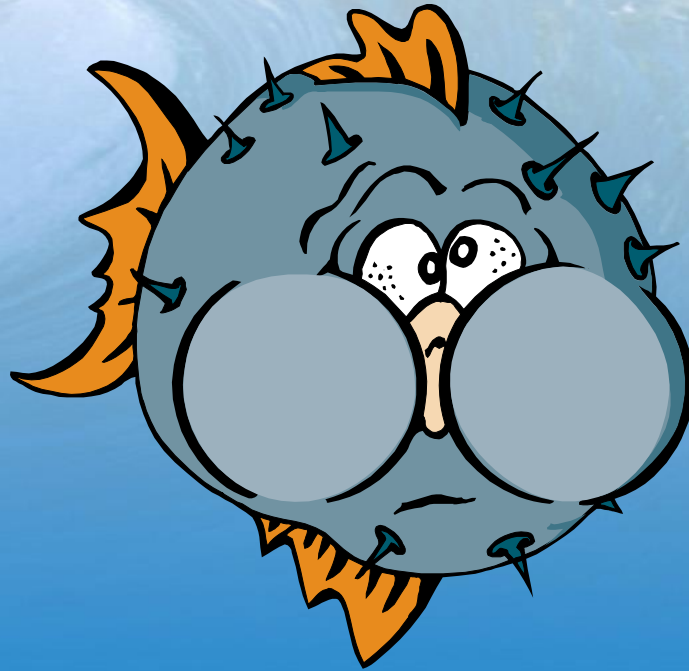


9 Balls

8 Identical and 1 either lighter or heavier

You can weigh a maximum of 3 times to determine the odd one out.

# Demonstration



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