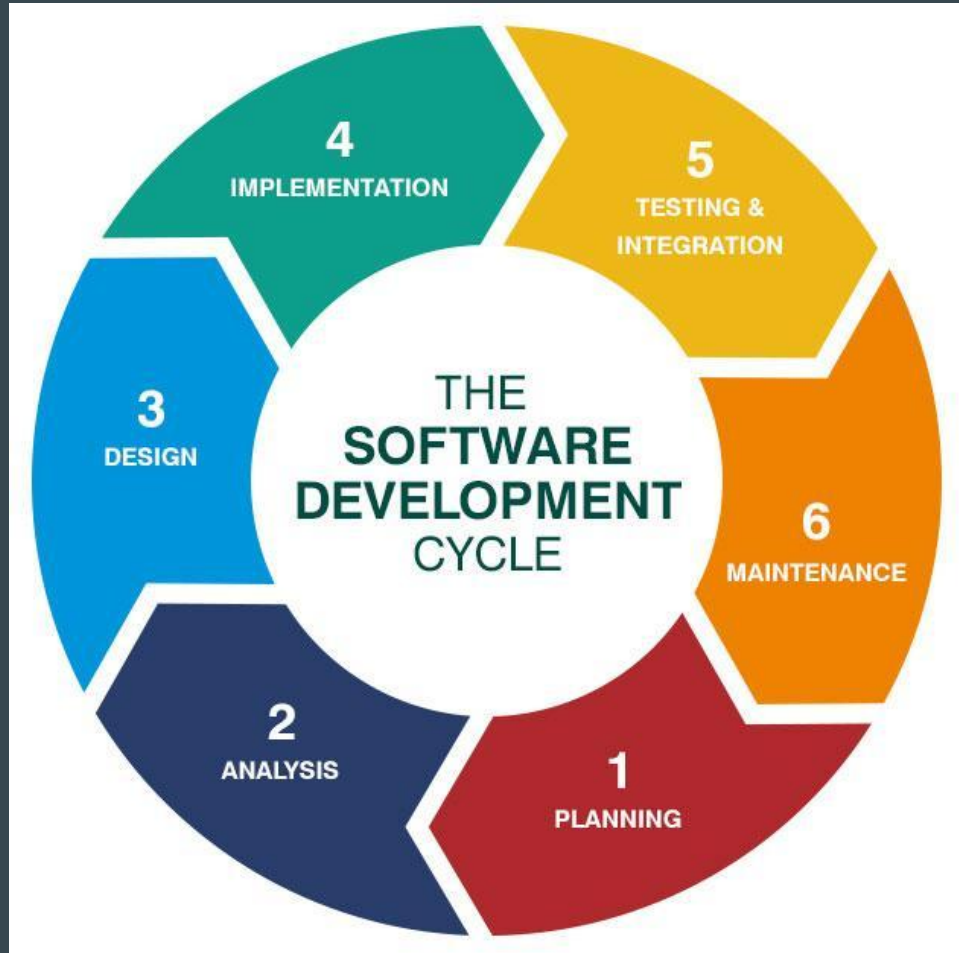# Widgets And Gadgets

• • •

WAG Corporation Software Demo

Presented by:
Nathan Thomas
Paul Nelson
Chris Roberts

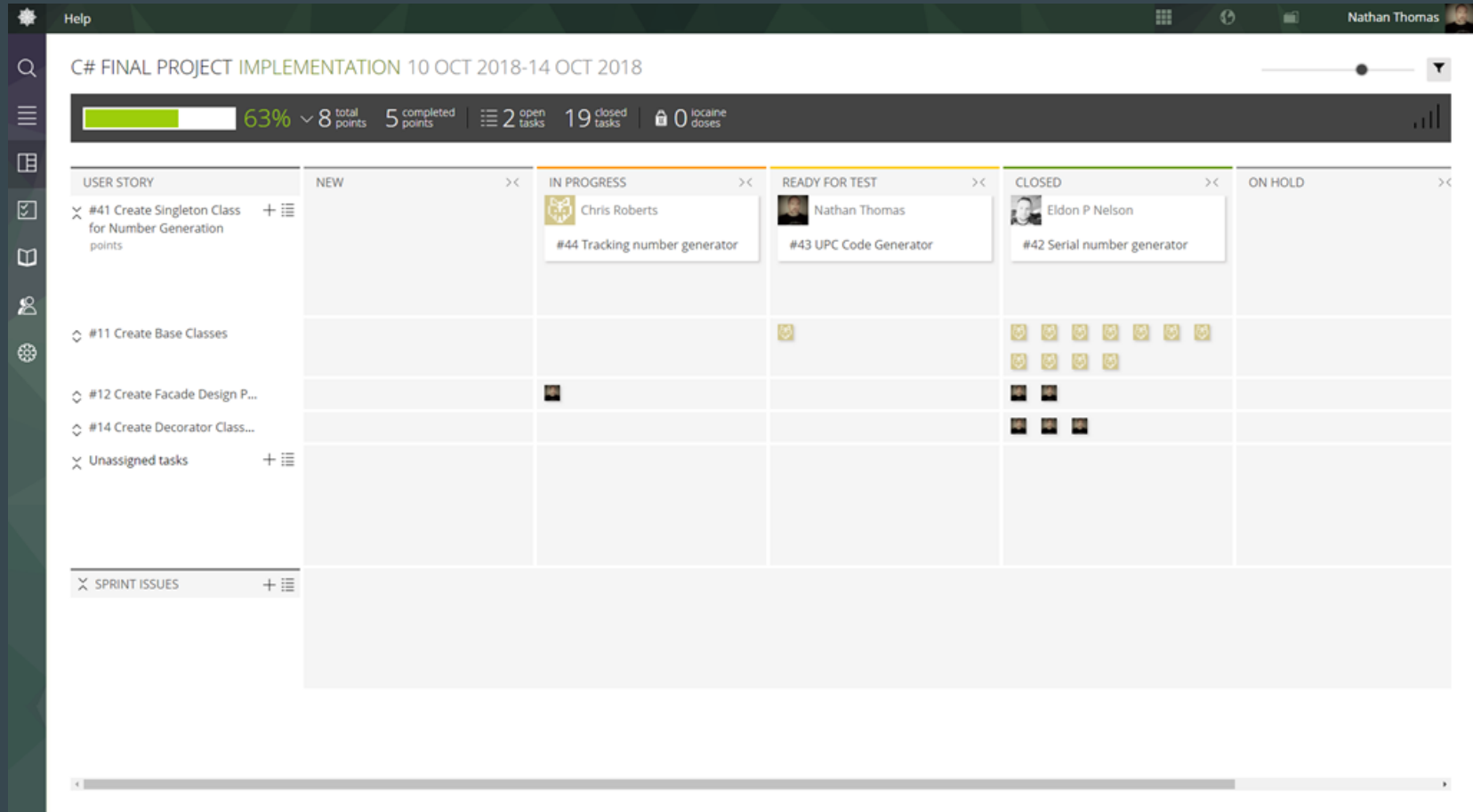# Planning

- Software Development Lifecycle

Software Development Lifecycle

Planning

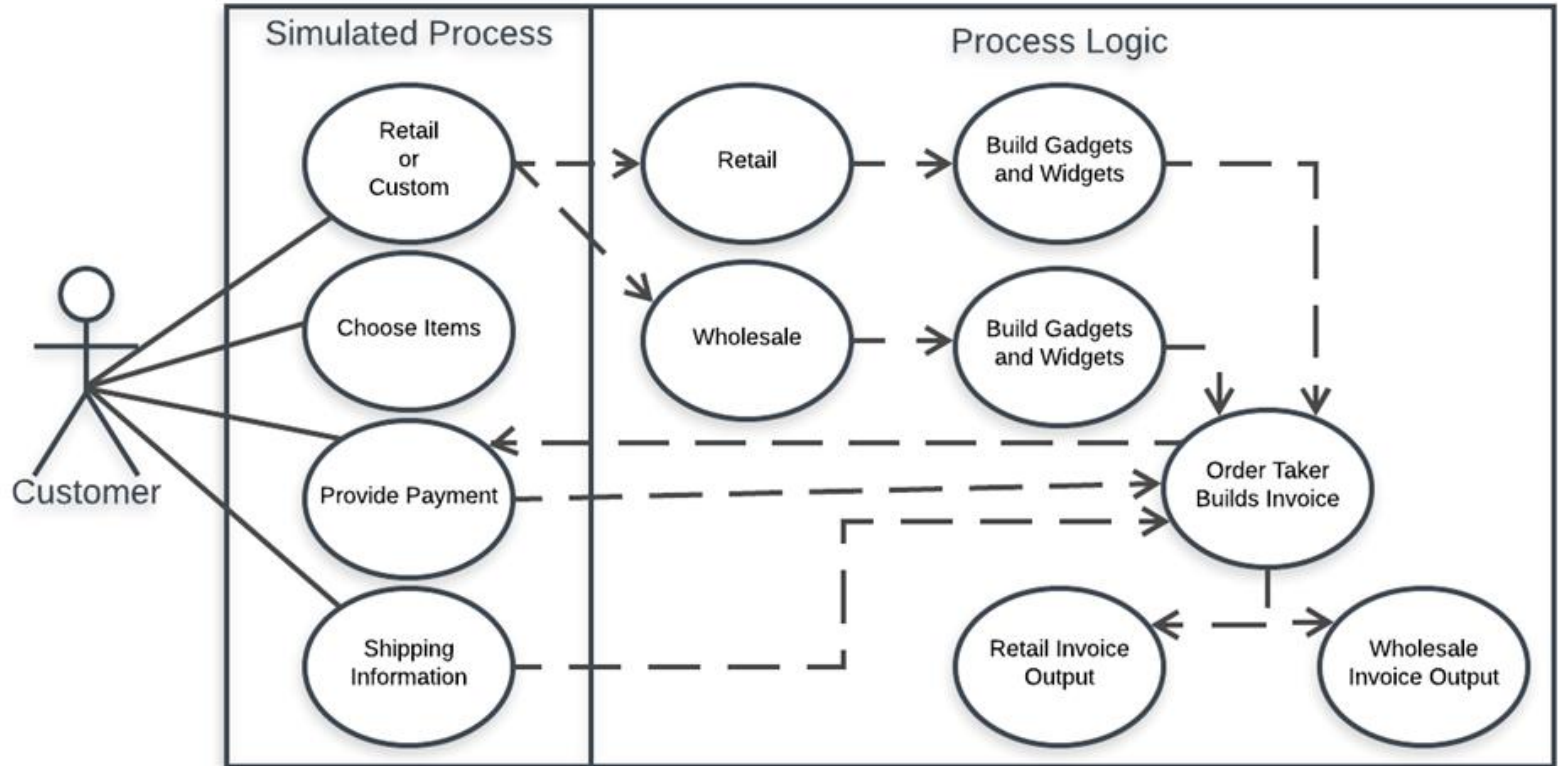- Software Development Lifecycle
- Agile Methodology

Agile - Taiga.io

Planning

- Software Development Lifecycle
- Agile Methodology
- Documentation
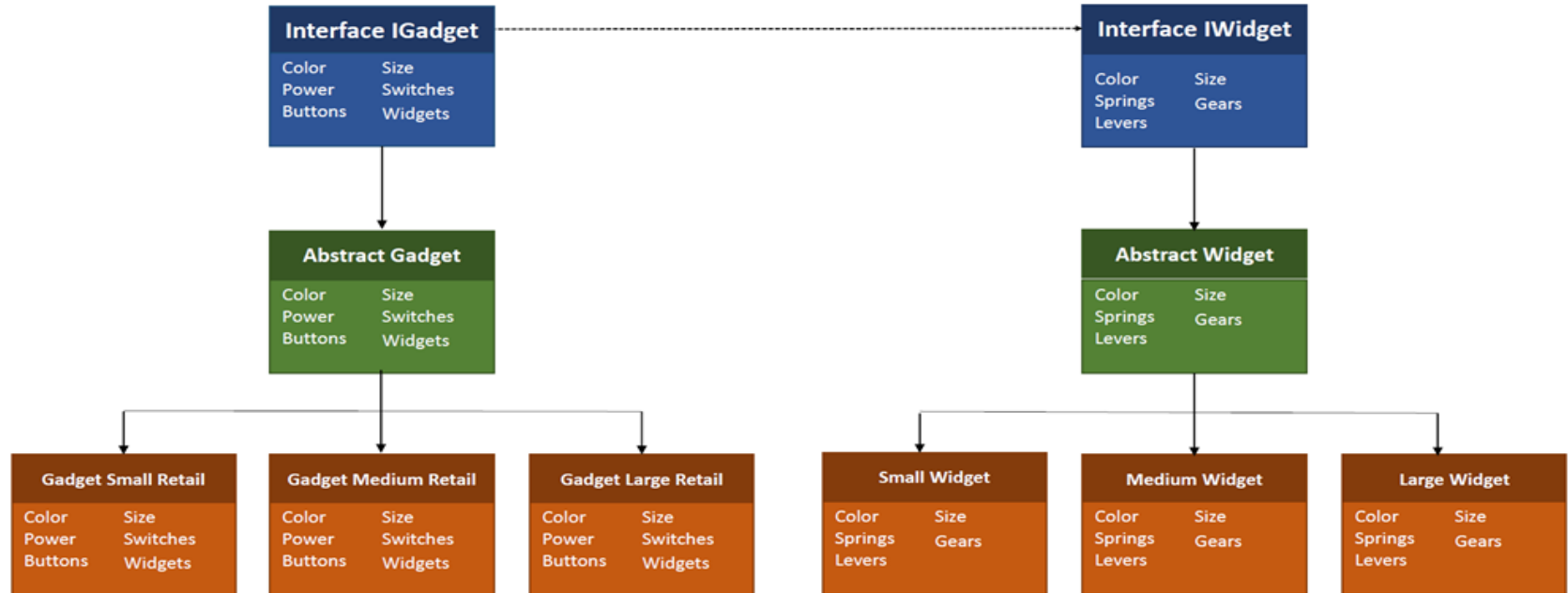 - Use Case

Use Case Diagram

Planning

- Software Development Lifecycle
- Agile Methodology
- Documentation
  - Use Case
  - Unified Modeling Language

UML Diagrams

Gadget Hierarchy

Interface IGadget

Color   Size
Power   Switches
Buttons   Widgets

Interface IWidget

Color   Size
Springs   Gears
Levers

Abstract Gadget

Color   Size
Power   Switches
Buttons   Widgets

Abstract Widget

Color   Size
Springs   Gears
Levers

Gadget Small Retail

Color   Size
Power   Switches
Buttons   Widgets

Gadget Medium Retail

Color   Size
Power   Switches
Buttons   Widgets

Gadget Large Retail

Color   Size
Power   Switches
Buttons   Widgets

Small Widget

Color   Size
Springs   Gears
Levers

Medium Widget

Color   Size
Springs   Gears
Levers

Large Widget

Color   Size
Springs   Gears
Levers

Conclusions of initial planning and analysis.

Software Structure
- Distinguish between retail and warehouse.
- Design must reflect that structural relationship.

Project Demands
- Simple and reliable code.
- Must deliver all requirements.

Role Assignment
- Prior experience in software development.
- Team structure built on individual strengths.

Opportunities
- Apply lessons to add educational value.
- Find balance between opportunity and simplicity.
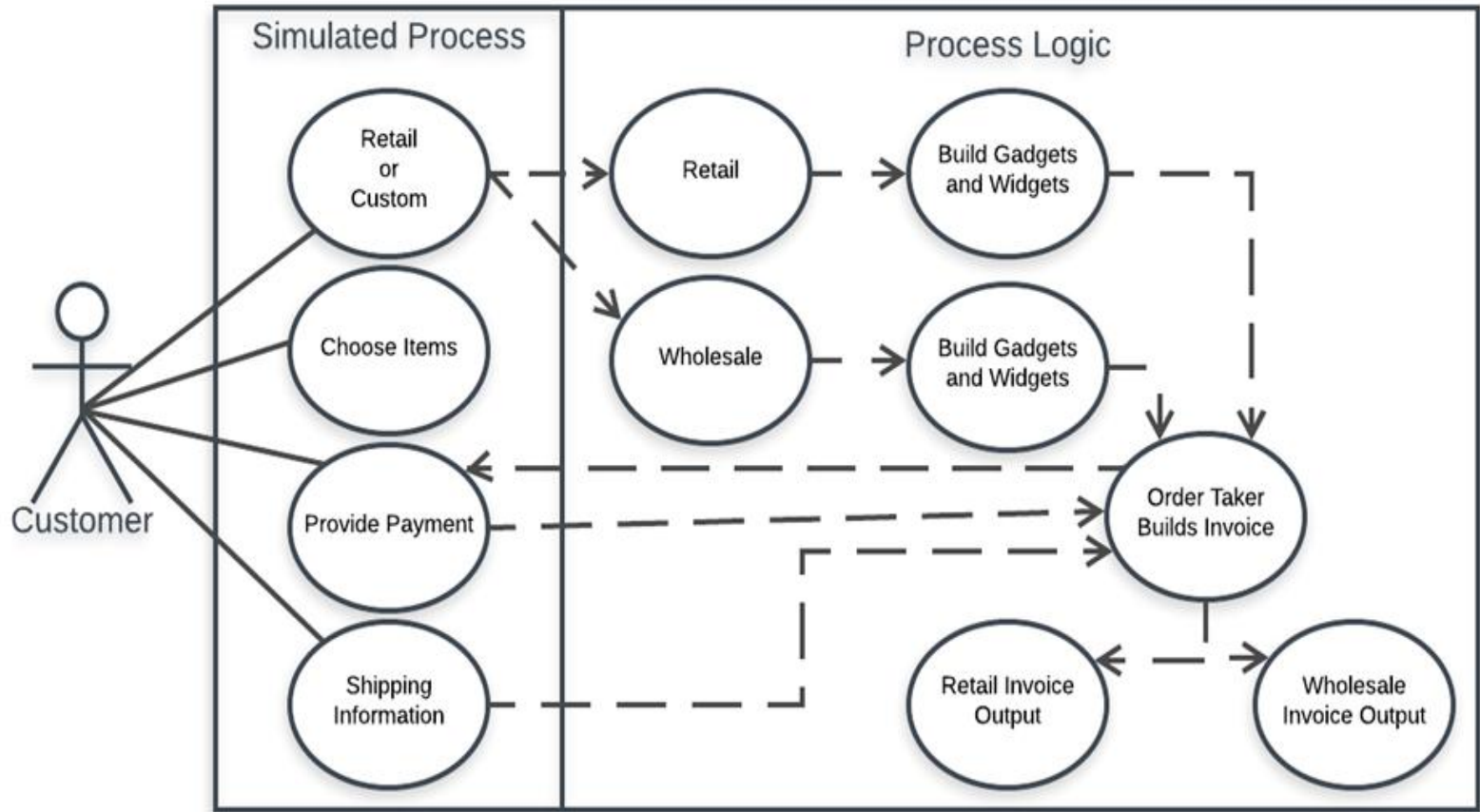
Design

Retail Items

- Have a fixed set of attributes

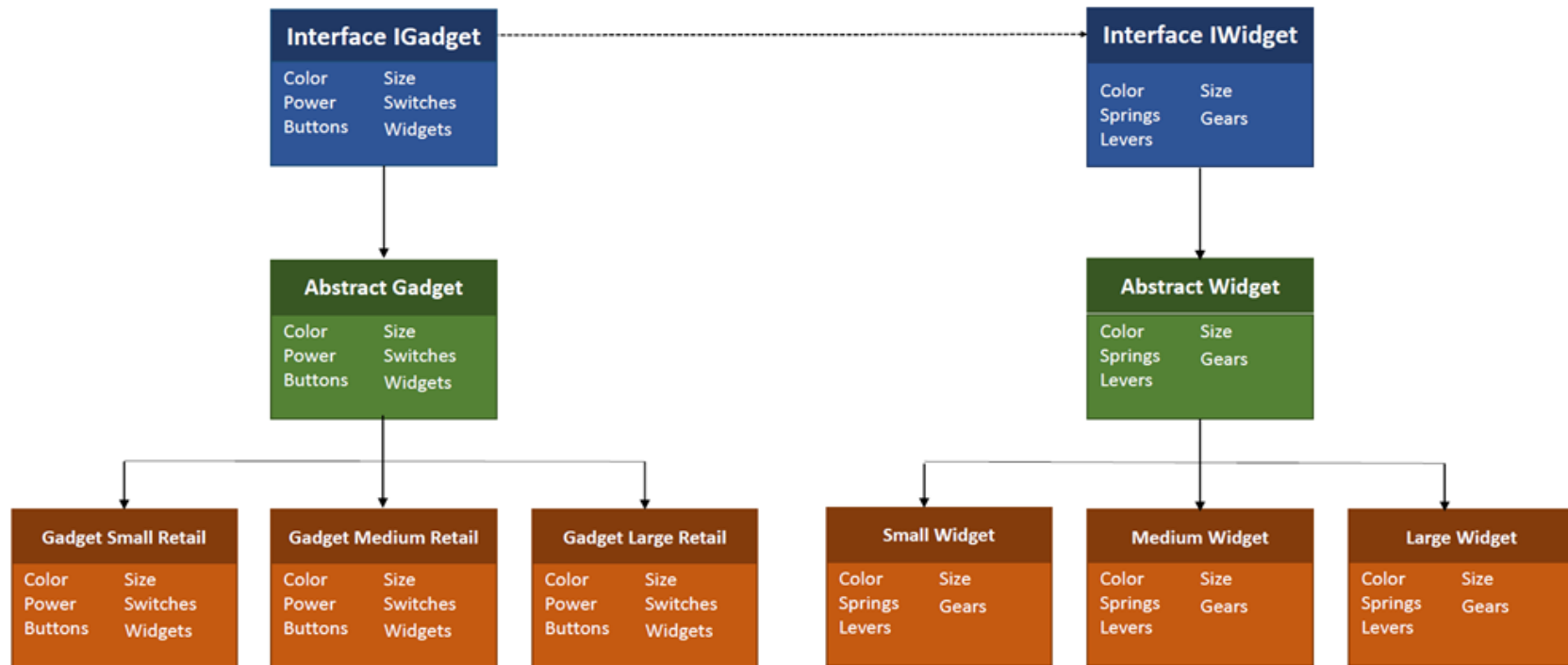- Can be used as a base for custom items

Warehouse Items

- Possess all attributes of retail items

- Additional customizations can be added to the retail base to create a unique product.
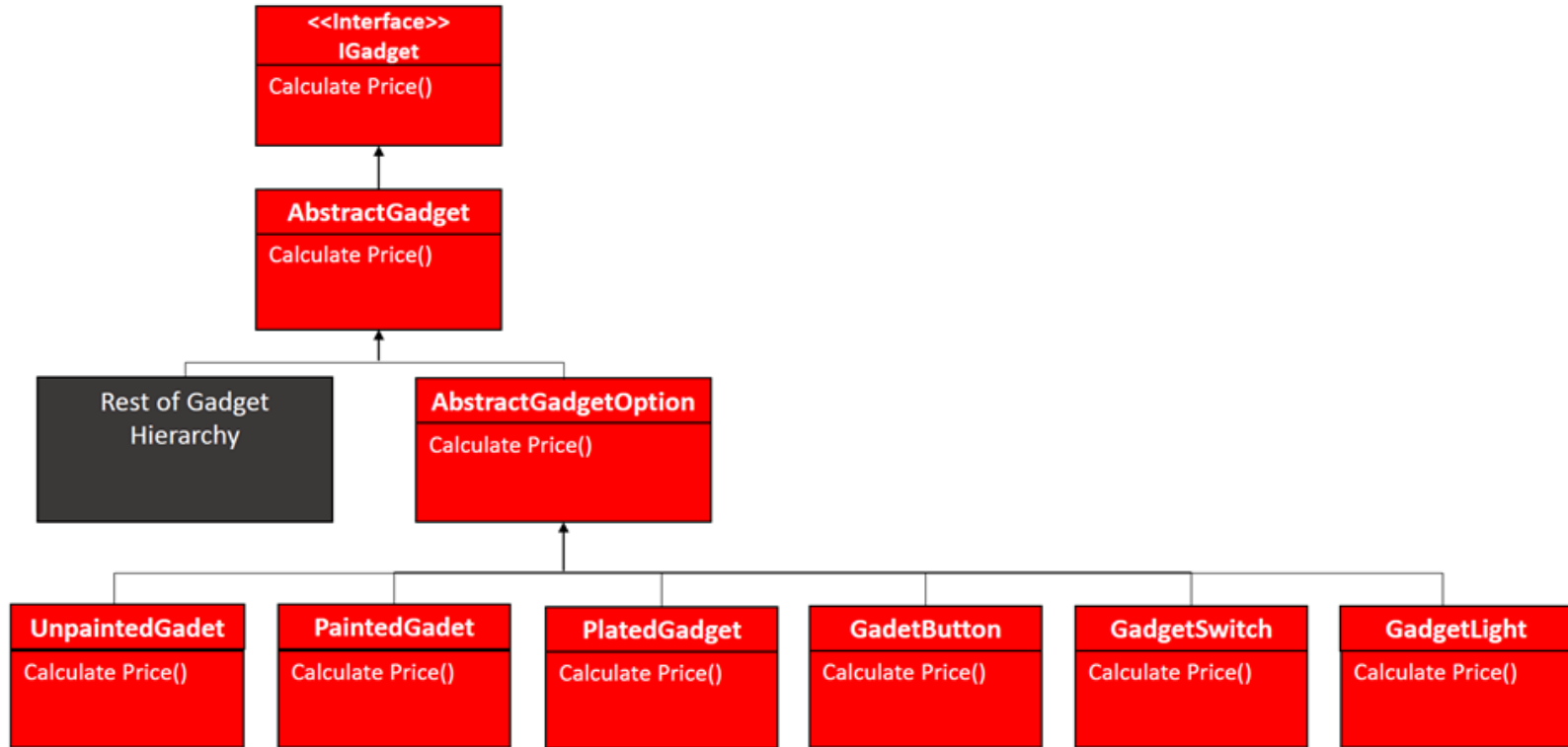
Interface

- User input is not required

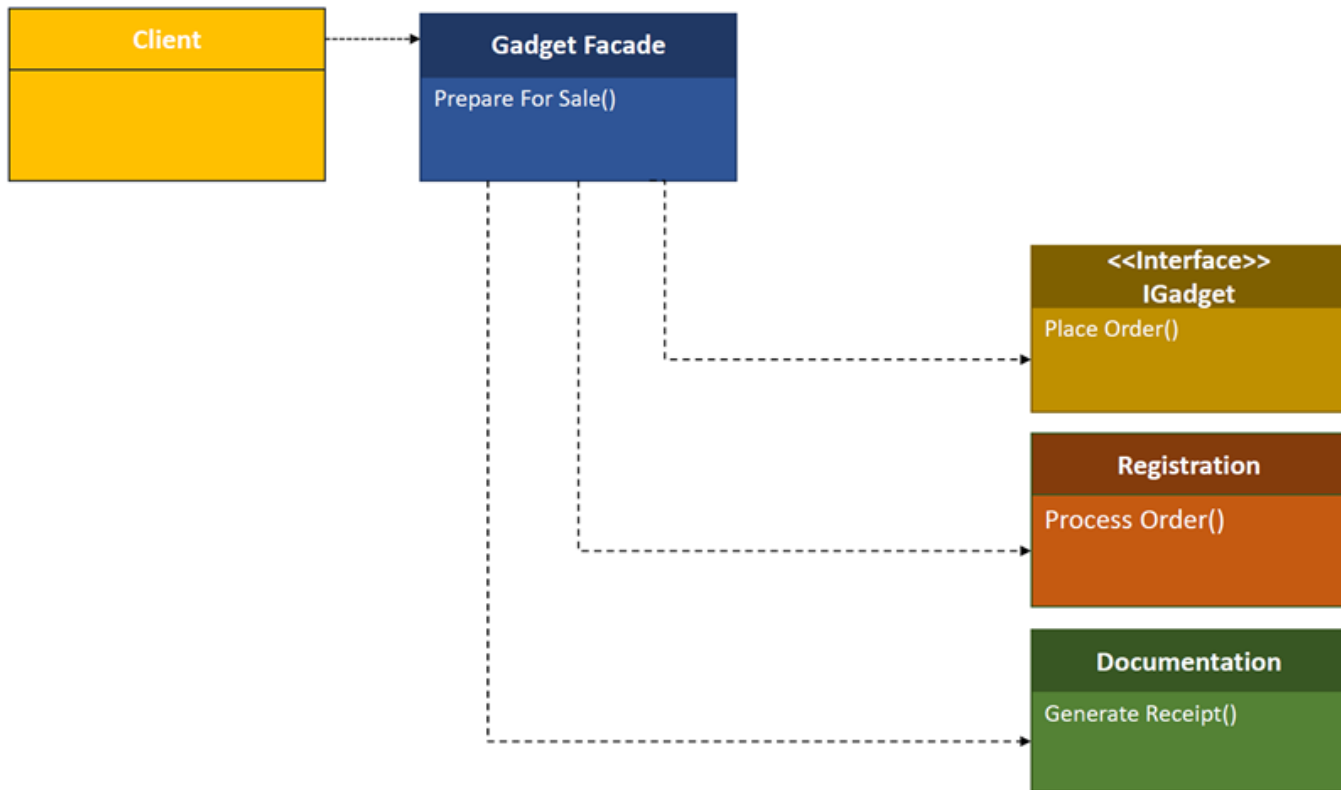- Interface must reflect a proof-of-concept order, and display relevant information including items and cost.

Gadget Hierarchy

Decorator Pattern

<<Interface>>
IGadget

Calculate Price()

AbstractGadget

Calculate Price()

Rest of Gadget
Hierarchy

AbstractGadgetOption

Calculate Price()

UnpaintedGadet

Calculate Price()

PaintedGadet

Calculate Price()

PlatedGadget

Calculate Price()

GadetButton

Calculate Price()

GadgetSwitch

Calculate Price()

GadgetLight

Calculate Price()

Facade Pattern

Client

Gadget Facade

Prepare For Sale()

<<Interface>>
IGadget

Place Order()

Registration

Process Order()

Documentation

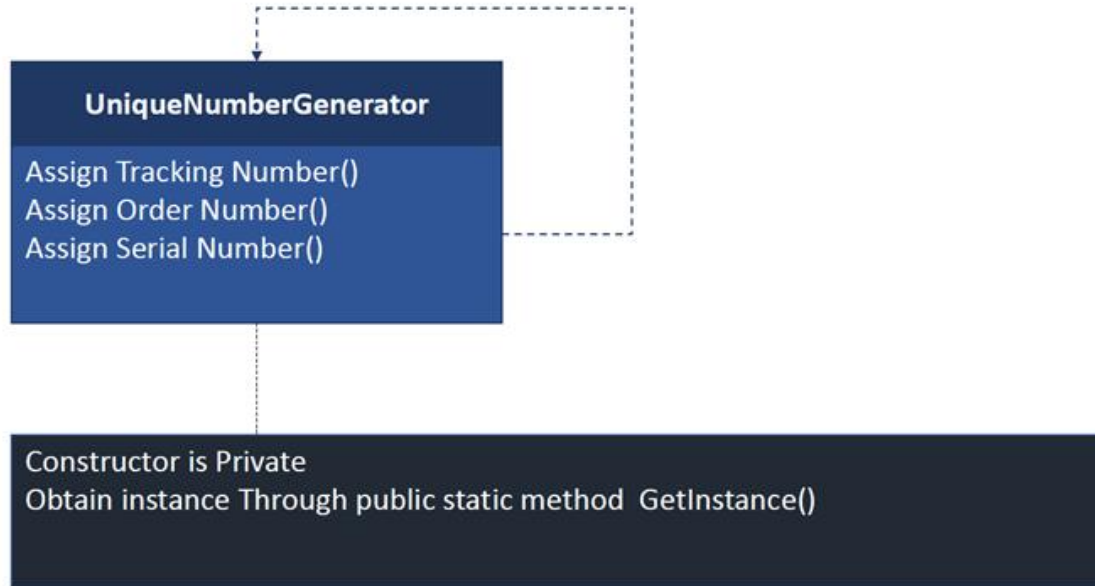Generate Receipt()

Singleton Pattern

Implementation

Chris Roberts: Senior Developer

Paul Nelson: Developer

Nathan Thomas: Developer

Testing

Retail

Verify widget counts, buttons, and other standard parameters matched with the expected results.

Retail Output formatting and price calculations.

Serial, UPC and Tracking Numbers.

Wholesale

Verify base values for components were consistent with Retail products, and the custom items that were expected, displayed properly.

Custom Output formatting and price calculations.

Serial, UPC and Tracking Numbers.

Without Further Ado . . .

Software Development Lifecycle

THE **SOFTWARE DEVELOPMENT** CYCLE

4 IMPLEMENTATION

5 TESTING & INTEGRATION

3 DESIGN

6 MAINTENANCE

2 ANALYSIS

1 PLANNING