Advanced use of TrigML

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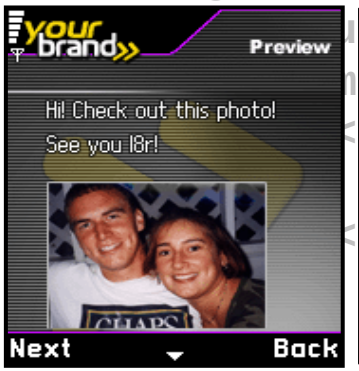
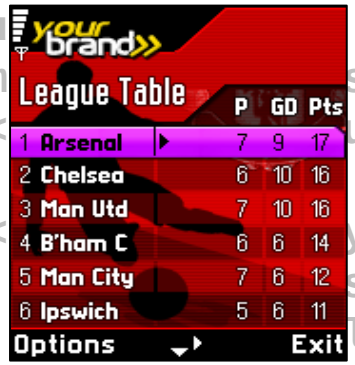
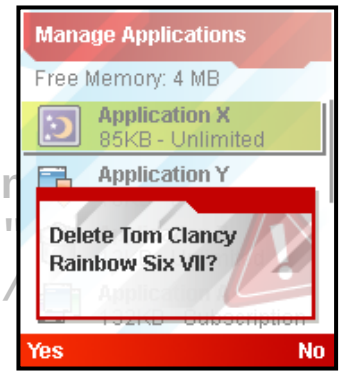
uiOne™ is about data-driven UIs

```
<trigml>
  <layer id="layer1">
    <group x="left" y="top" width="*" height="20">
      <image res="banner/logo"/>
    </group>
    <grid rows="3" repeatover="news/headlines">
```

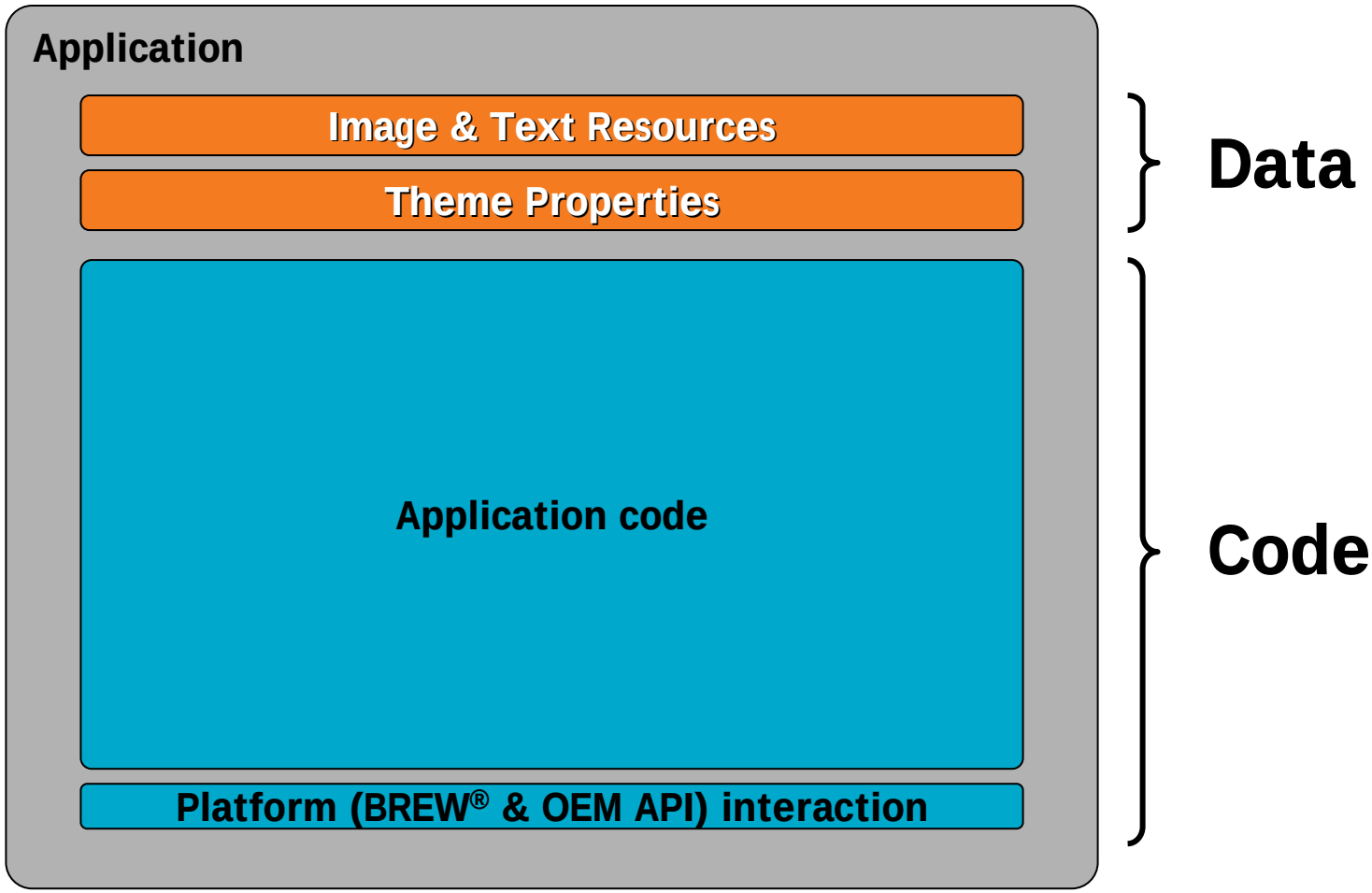




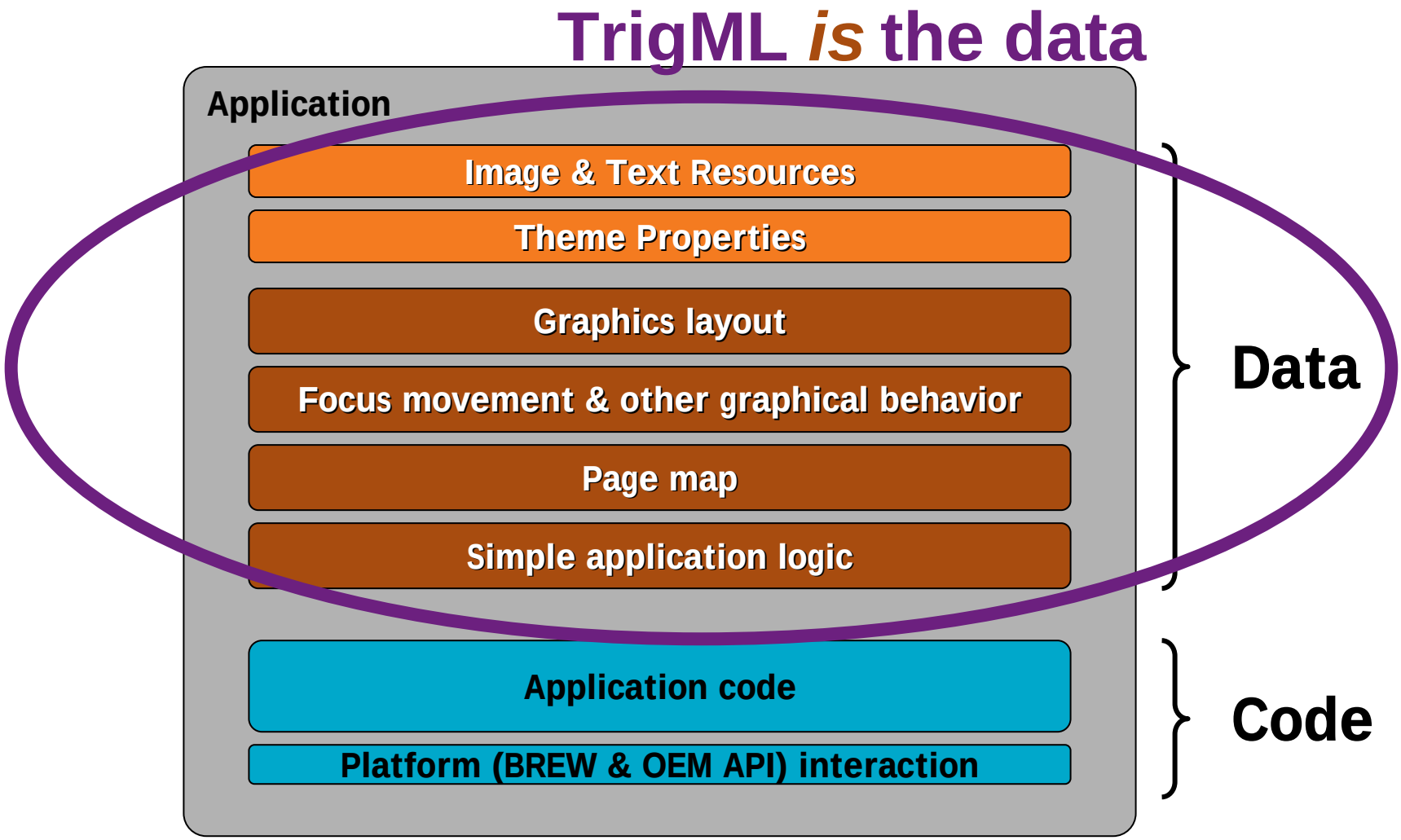



```
      </image>
      <text res="news/headlines/$$/title"
            font="$newsfont"/>
    </group>
  </grid>
  <group x="left" y="bottom" width="*" height="20">
    <image res="footer"/>
```

Traditionally, data supports UI



With uiOne™, data *is* the UI

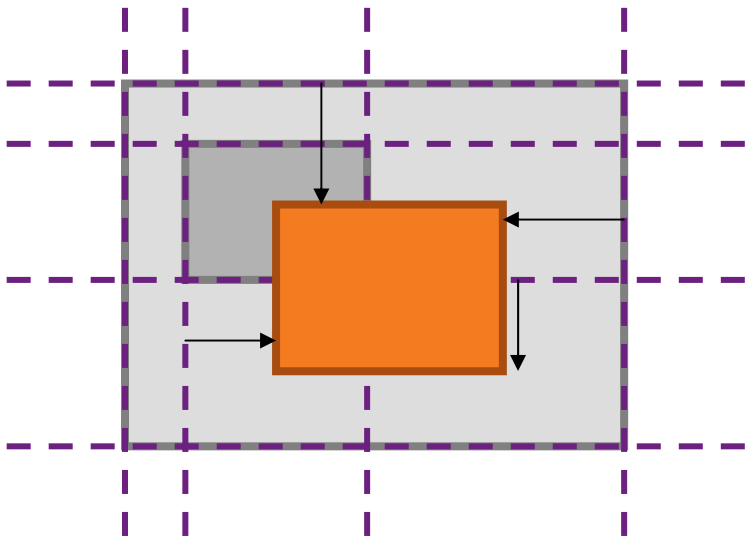


Advanced TrigML - Contents

- uiOne™ Intro
- Efficient Layout – Example
- Well Structured Trigs
- Iterators and Animations – Example
- Performance tips
- New Feature Highlights

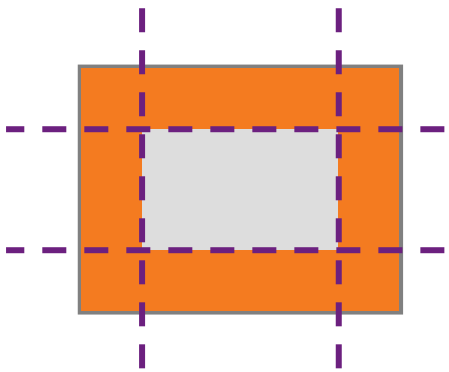
New attributes help keep content flexible

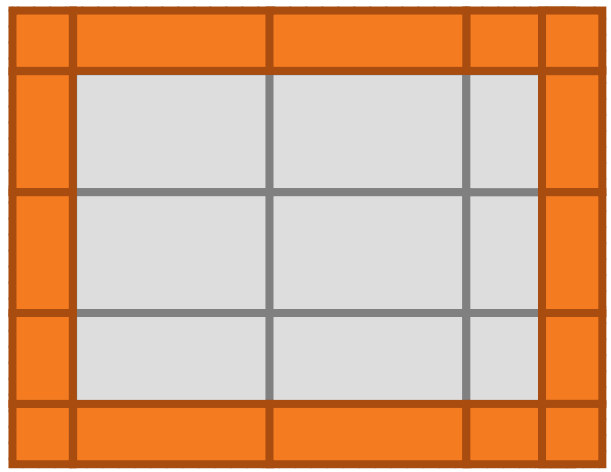
- **‘left’, ‘right’, ‘top’ and ‘bottom’**
  - individually define the positions of edges
  - edges can be set relative to parent or previous element
  - avoids need for excessively nested groups and grids



Pixel-perfect image scaling with <tile>

- Re-use a single image resource at many sizes
- “9-slice” the image to preserve borders
- Use shrink-to-fit and edge-control for adaptive sizing of backgrounds





TrigBuilder > popup.par

- **Reduces element count using new layout tags**
- **Uses <tile> to minimise image data**
- **Defines a popup *Template***
  - Template parameters can include paths to other fragments

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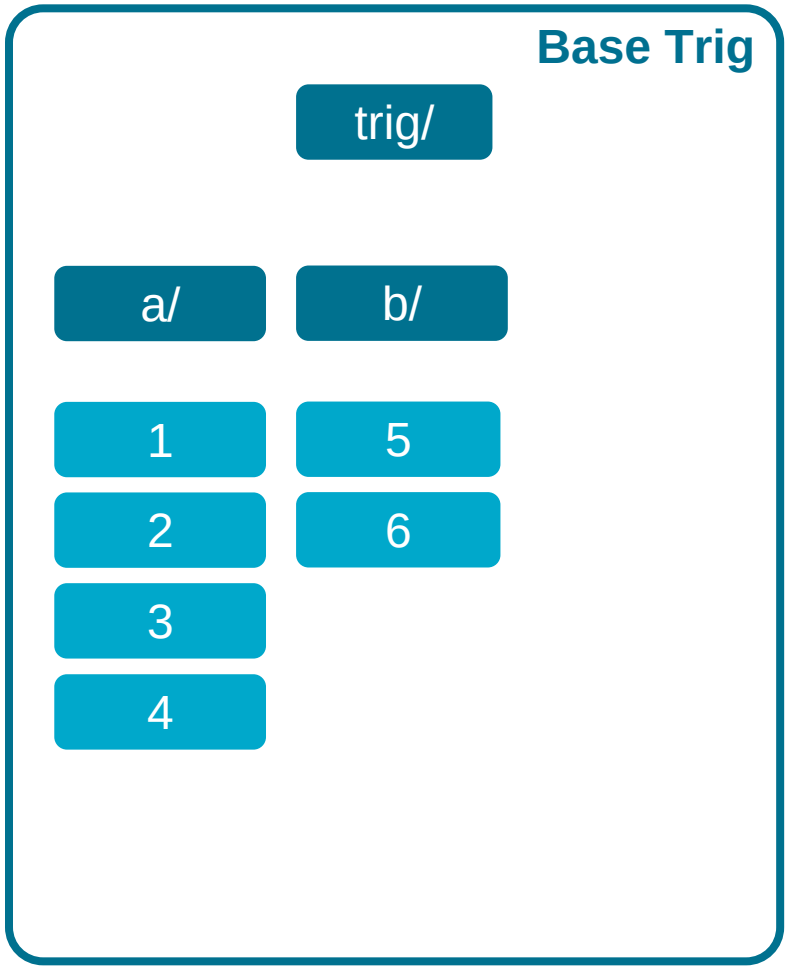
Well Structured Trigs

- **Use templates for any common aspect of the UI**
  - Maximise the re-use of TrigML fragments
  - Minimises the ROM footprint of the Trig
  - Make sweeping changes in just one place
- **Use libraries for sharing templates between Trigs**
  - New feature in Trigbuilder
  - Share templates between apps
- **Organise Templates using Trig Inheritance**

Trig Inheritance



- **Base Trig**
  - Page management utilities
  - skeleton containers
- **Page Trig**
  - page definitions
  - page navigation
- **Theme Trig**
  - branding
  - backgrounds
  - icons and highlights

Derived Trig
trig/
a/
b/
c/
1
2
3
4
5
6
7
8
9
10
11
12
13
14

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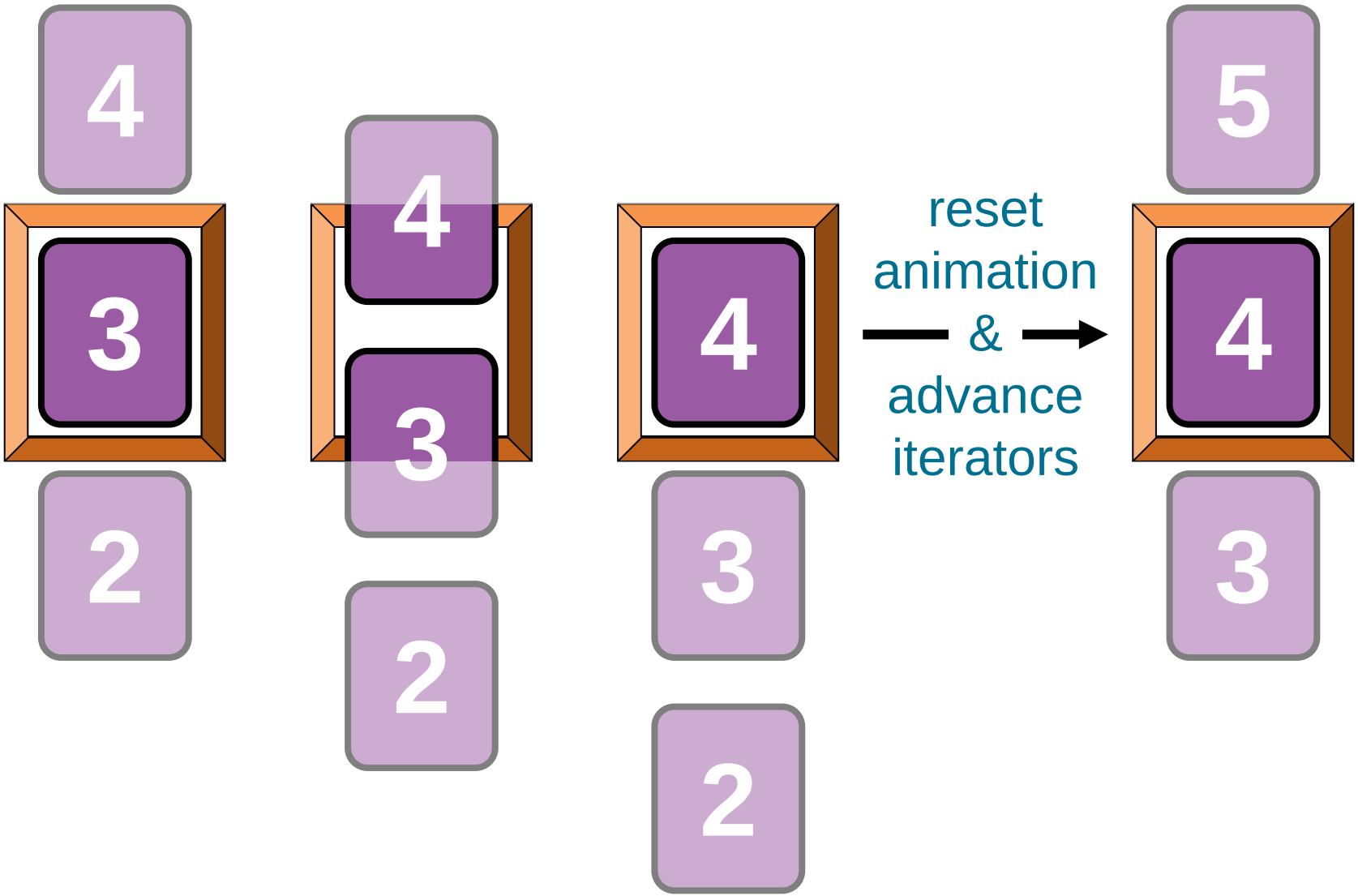
Data iterators

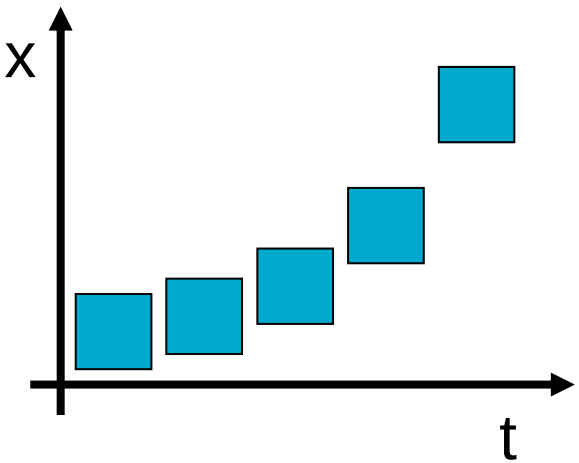
- **<group> also has a 'repeatover' attribute**
  - Acts as a data iterator or single-cell <griddata>
  - Control iterator with *advance* and *reverse*
- **Useful for tickers and item-by-item browsing**
- **Combine with <anim> for animated transitions**

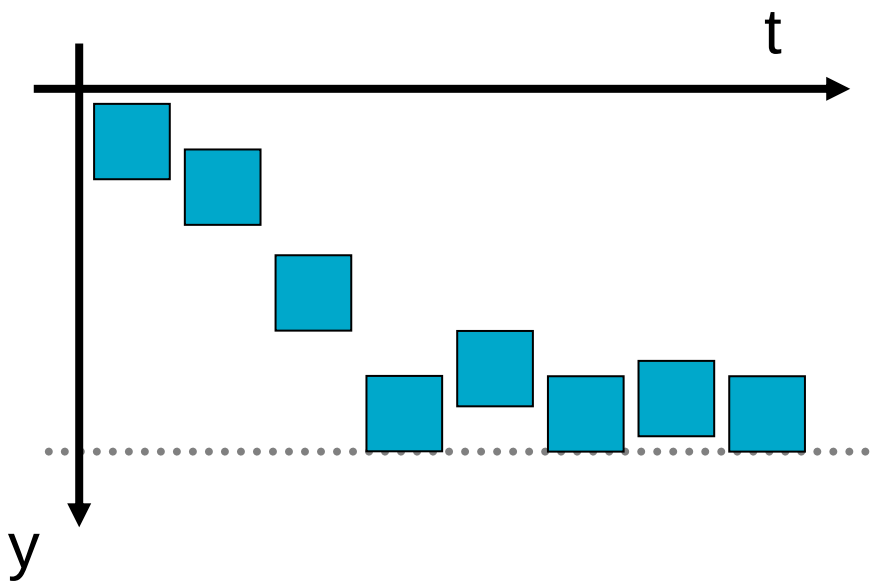
Combining animation with *advance* and *reverse*



Animations can emulate inertia

- **<anim> takes frame by frame values**
  - When used with x or y generates movement
- **Non-linear steps can be used to achieve**
  - acceleration, e.g. x = 1, 2, 4, 8, 16,…
  - bouncy landings, e.g. y = 0, 5, 15, 30, 27, 30, 29, 30





TrigBuilder > weather.par

- **Combines multiple iterators and animations for scrolling transition effects**
- **Exploits frame-by-frame animation values to simulate inertia**

- **Image library reduces Trig size**

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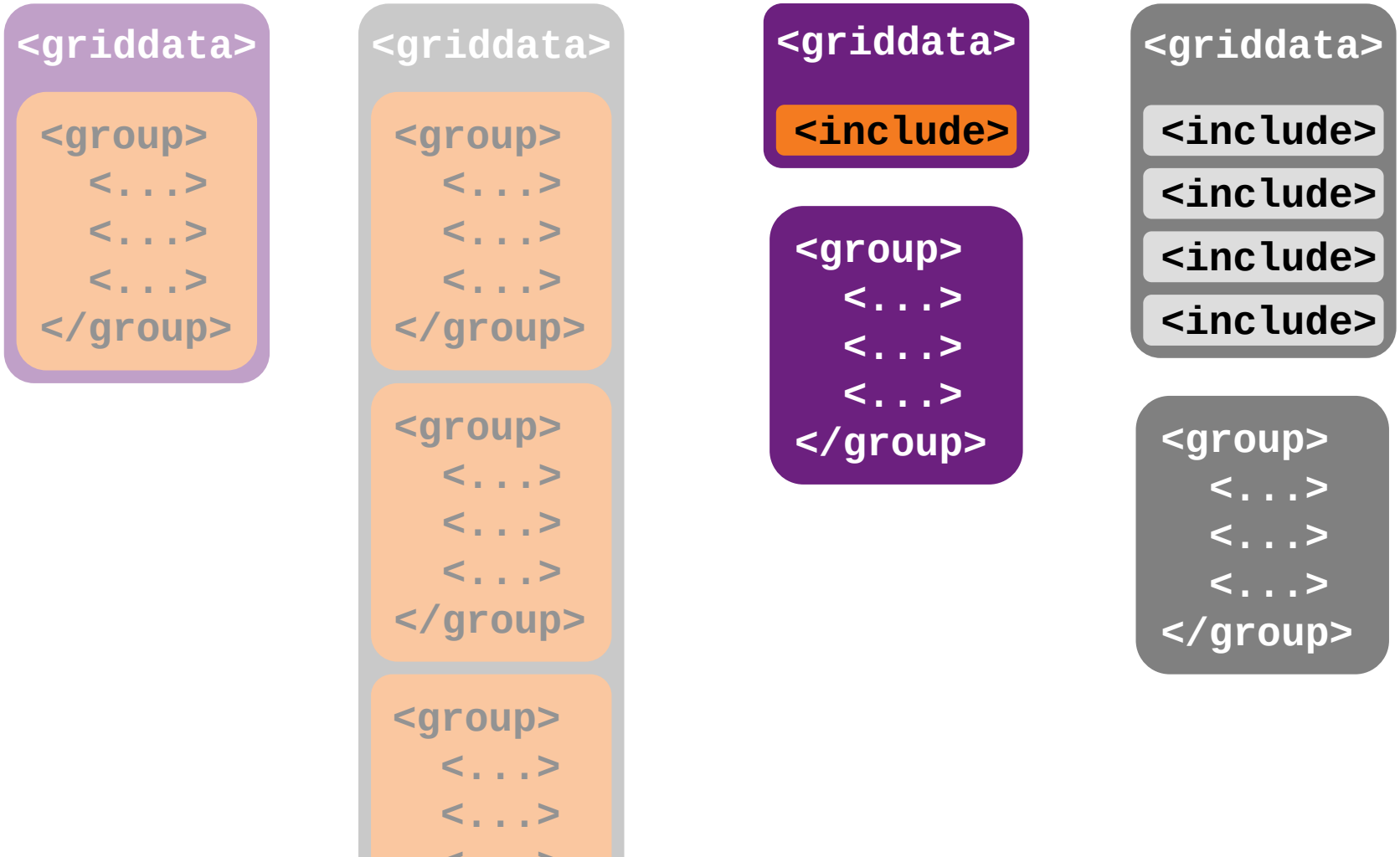
Build fragment libraries to reduce image count

Many options with <tile>

<include> in <griddata> for smaller Trigs



Performance tips

- **General goal: minimise contents of Trig**
  - Use <include> in <griddata>
  - Use <tile> for multiple sizes of similar image
  - Build image and TrigML libraries to maximise re-use
  - Use <sync> to group *listeners* with common conditions
- **Don’t get carried away programming in TrigML**
  - use Actors where necessary

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TrigML Filters

- **New class of element**
  - Filters build on BUIW IDecorator classes
  - Contain single child element
  - Apply an effect to the painting of that child
- **<blend>**
  - Draws its child (which might be a container) into a separate canvas
  - Applies an alpha blend when painting that canvas to the display
- **<canvas>**
  - A “no-op” filter that double-buffers the painting of its child
  - Improves animation performance

TrueType fonts

- **New <ttfont> tag declares a font style**
  - fonts defined in TTF files in or out the Trig
  - many effects: color, emphasis, outline, italics

```
<ttfont id="mybold"
        res="qcsans" size="15" edge="_outlined"/>
```

- **Reference with 'font' attribute of <text>**
- **Or new in-line formating**

```
[mybold]Good[] morning
```

Integrated Video

- **New <video> tag**
  - Builds on BUIW FrameWidget
- **Video feeds from Actors**
  - ‘res’ attribute points at VFS path
  - VFS path expected to supply an IFrameModel
- **Feeds possible from any source**
  - Viewfinder
  - Camcorder
  - Video resource playback
  - Video streaming
- **Can be layered with other elements**

  (device performance permitting!)

That's it!

Q & A

Don't miss the *TrigML-on-the-fly* workshop, or come and see us in the Partner Pavilion