

SDC19

Where Now Meets Next

Bixby Views and User Experience Best Practices

Sangmok Han

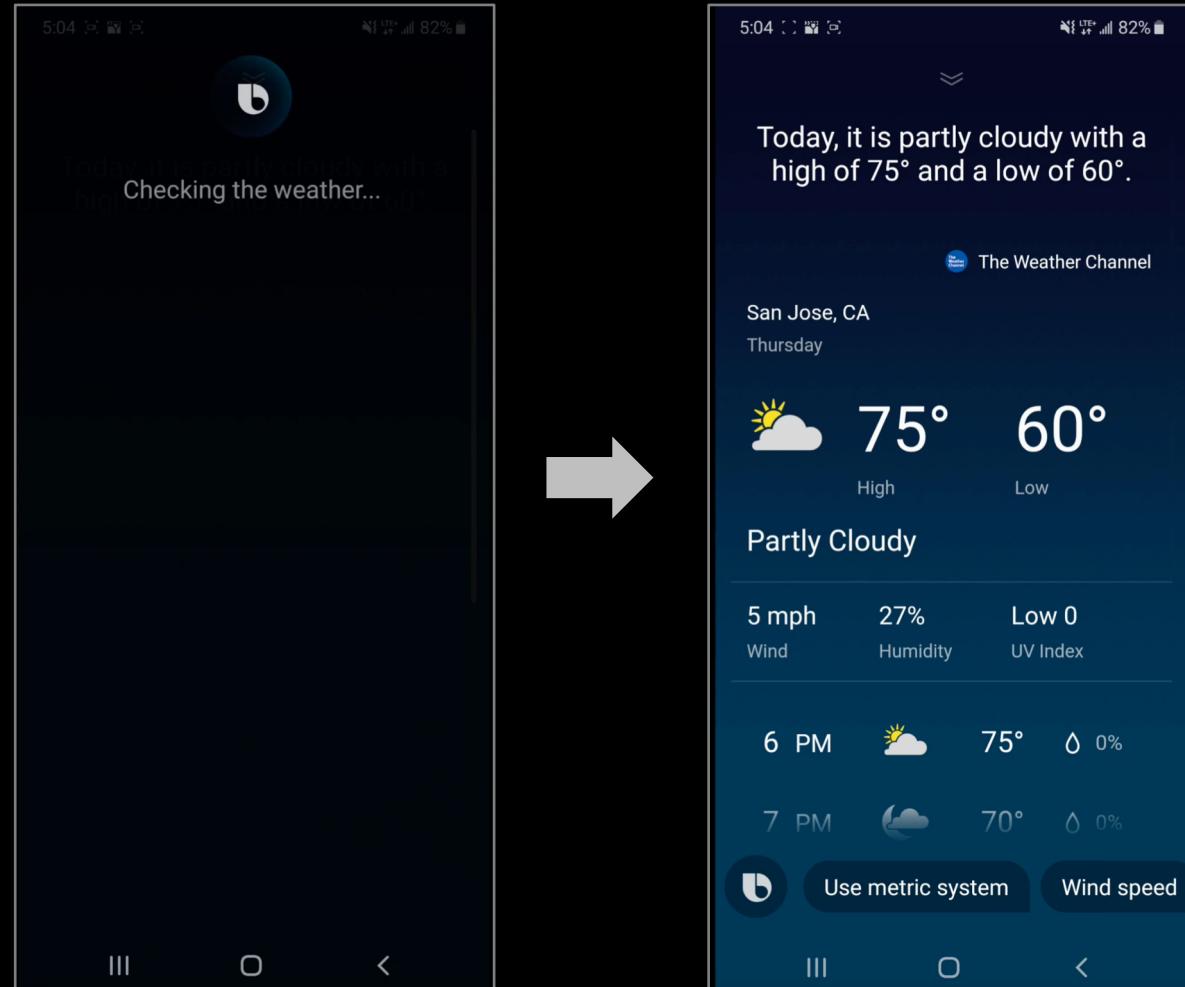
Engineering Manager for Bixby Views
Viv Labs / Samsung Electronics



What are UI elements in Bixby that I can design?

Bixby UI = Dialog + Content + Follow-ups

"Weather today?" →



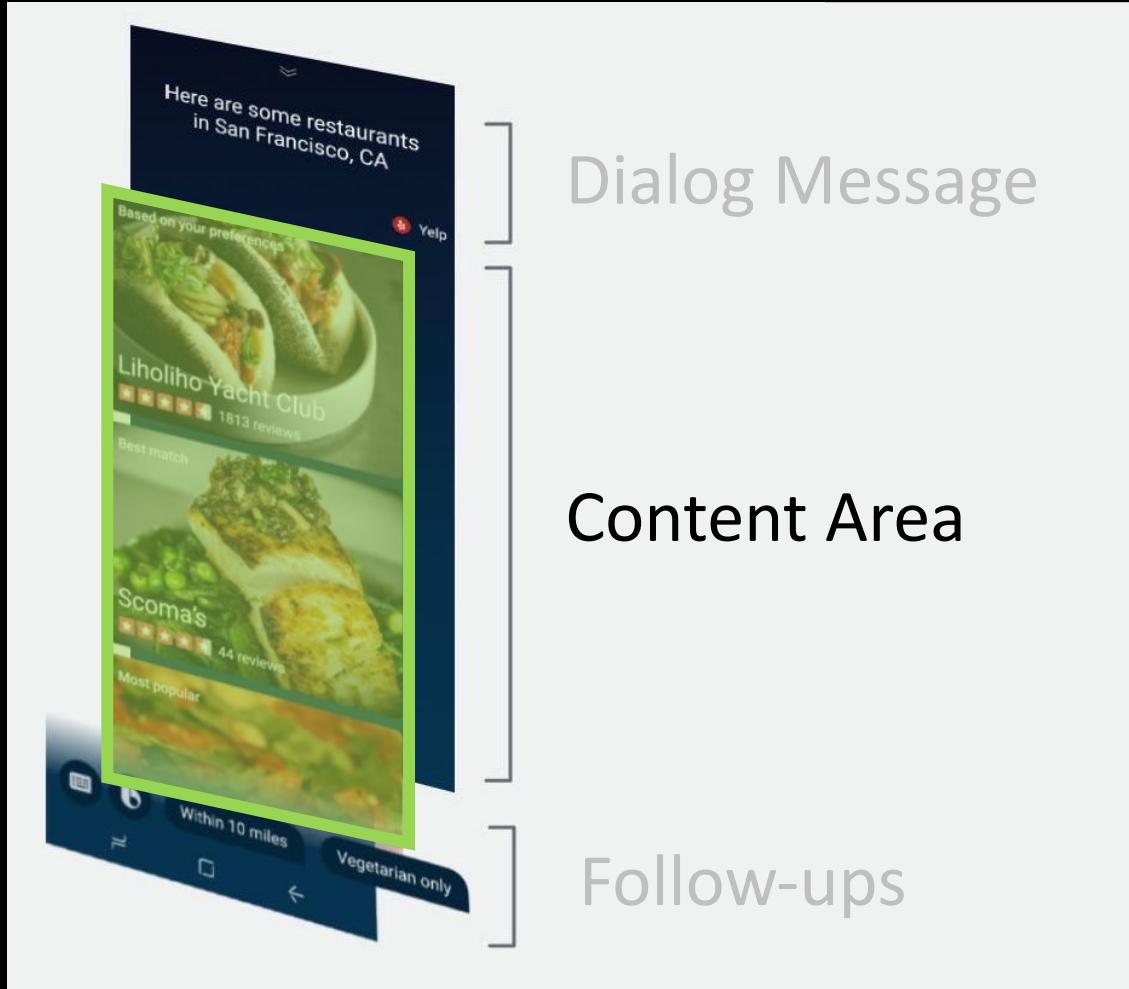
What are UI elements in Bixby that I can design?

Bixby UI = Dialog + Content + Follow-ups



What is Bixby Views?

Building Blocks for Content Area



Bixby Views provide building blocks for the content area

Bixby Views – What can it do for your capsules?

Add easy to use, delightful UI
that works across devices
in a developer-friendly way



Bixby Views – What can it do for your capsules?

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Design iterations of Bixby Views

Balancing Flexibility and Consistency

Ver. 1

```
text ("My Title")
```



Not flexible
Usable

Ver. 3

```
text {  
    value ("My Title")  
    style (Title_S)  
    color (Amber)  
}
```



Flexible
Usable

Ver. 2

```
<div style="font-size: 14px; color: #cc851a;">  
| My Title  
</div>
```



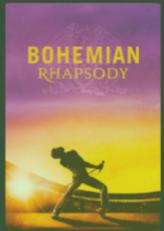
Maybe too flexible
Not very usable

Building blocks for easy to use, delightful UI

Usage Examples

Thumbnail Card

Top recommendation



Bohemian Rhapsody

2018

More results

Cell Card



Whiplash



Yesterday



Rocketman

Image Card



LUNA Mexican Kitchen

Mexican



1,427 reviews

Highly Rated



Paragraph

San Jose, CA

12:53am



52°

Clear

Horizontal/Vertical Box

4 mph

Wind

96%

Humidity

Low 0

UV Index

1 AM



52°

0 0%

2 AM



52°

0 0%

3 AM



51°

0 0%

4 AM



51°

0 0%

Building blocks for easy to use, delightful UI

Usage Examples

Image



Bohemian Rhapsody

Year

2018

Runtime

135 minutes

Budget

\$52,000,000

Revenue

\$894,027,543

Fearless lives forever

Singer Freddie Mercury, guitarist Brian May,
drummer Roger Taylor and bass guitarist John

Image Carousel

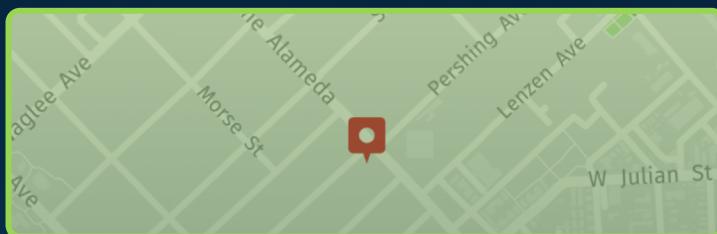


LUNA Mexican Kitchen

Mexican

\$\$

Location



Map Card

1495 The Alameda, San Jose CA

(82)

Cell Area

Monday - Thursday

9:00 AM - 9:00 PM

Friday - Saturday

9:00 AM - 10:00 PM

Sunday

9:00 AM - 9:00 PM

Review Highlights

Compound Card



Maureen G.

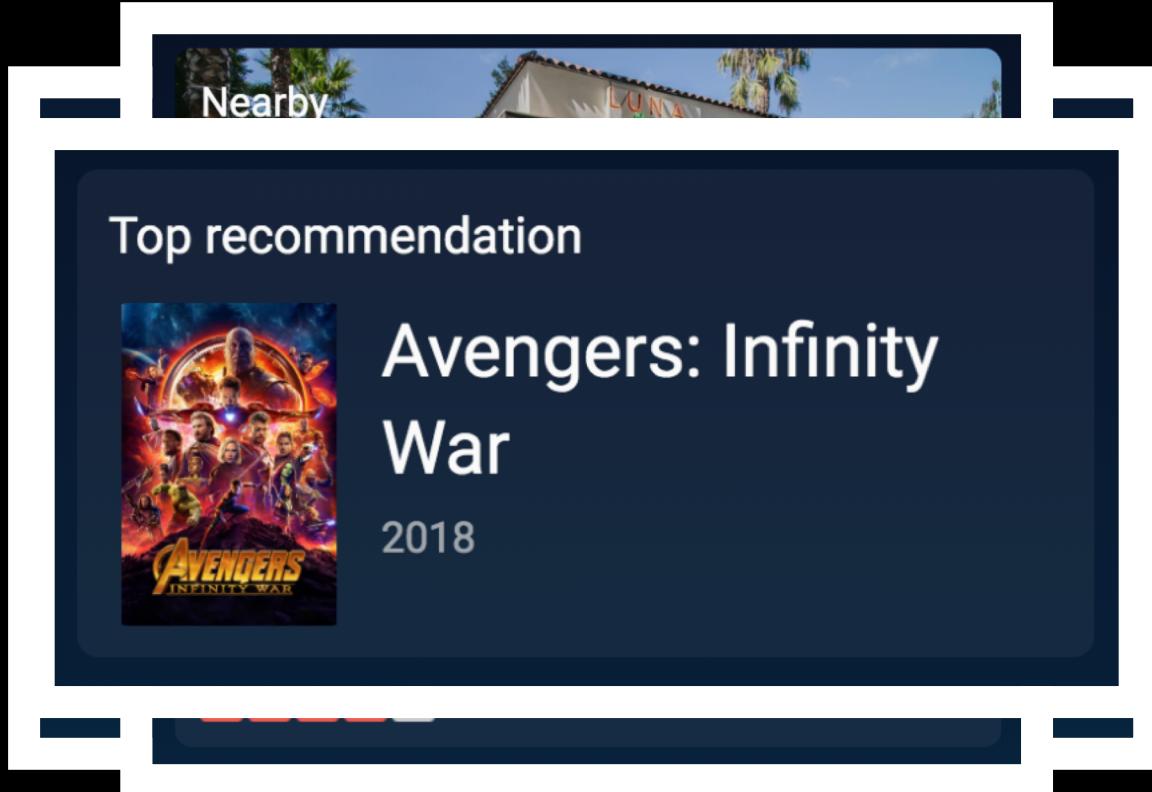


Octavio was our amazing waiter to amazing food!
We had fajitas and also Elote....so delicious!
And of course we had margaritas!!....

Tuesday, October 8th at 4:33pm

Building blocks for easy to use, delightful UI

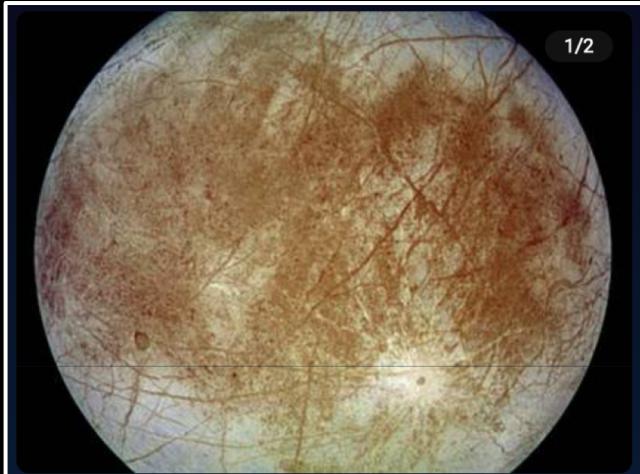
Components - Rich yet coherent



Simple Image Card with bold text
Image Card with text slots and custom icon
Thumbnail Card with custom aspect ratio

Building blocks for easy to use, delightful UI

Components - Rich yet coherent



Europa's Jewel

Jupiter • 0.134g

The Europa moon colony is a perfect re-creation of Renaissance Europe. Its architecture was able to reach new heights thanks to the low gravity. Stroll through a 5:1 scale reproduction of the Florence Cathedral or admire Jupiter from the observatory on top of the 7:1 reconstruction of St Peter's Basilica.

Terraforming Museum

Continental Breakfast

Subatomic Magic Shows

Grow-A-Clone



Avengers: Infinity War

Year

2018

Runtime

149 minutes

Budget

\$300,000,000

Revenue

\$2,046,239,637

An entire universe. Once and for all.
As the Avengers and their allies have continued to protect the world from threats too large for any one

Image carousel viewer
Text styles for titles and details
Divider and spacer
Horizontal/vertical boxes

Building blocks for easy to use, delightful UI

Demo: Build a List View

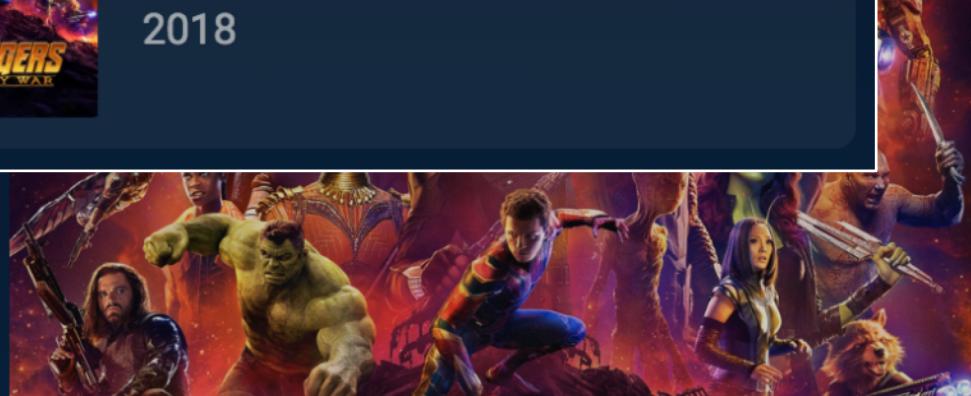
```
image-card {  
    aspect-ratio (16:9)  
    text-position (Top)  
    title-area {  
        halign (Start)  
        slot1 {  
            text {  
                value ("Avengers: Infinity War")  
                style (Title)  
            }  
        }  
        slot2 {  
            single-line {  
                text {  
                    value ("From #val")  
                    style (Detail_L)  
                }  
            }  
        }  
    }  
    image-url ("#[value(hostImage)])  
}
```

Top recommendation



Avengers: Infinity
War

2018



Avengers: Infinity War

2018

Customize image cards in the list view

Auto-complete to easily configure aspect-ratio, text-position, etc.

Use BixbyDevelopers.com to look up screenshots and documentation of each card.

Building blocks for easy to use, delightful UI

Demo: Build a Details View

```
section {  
  content {  
    image-carousel {  
      images (spaceRe  
    }  
    title-area {  
      halign (Center)  
      slot1 {  
        text {  
          value ("#v  
          style (Titl  
        }  
      }  
      slot2 {  
        single-line {  
          text {  
            value ("#  
            style (Ti  
          }  
        }  
      }  
    }  
    paragraph {  
      value ("#{value  
      style (Detail_M  
    }  
  }  
}
```

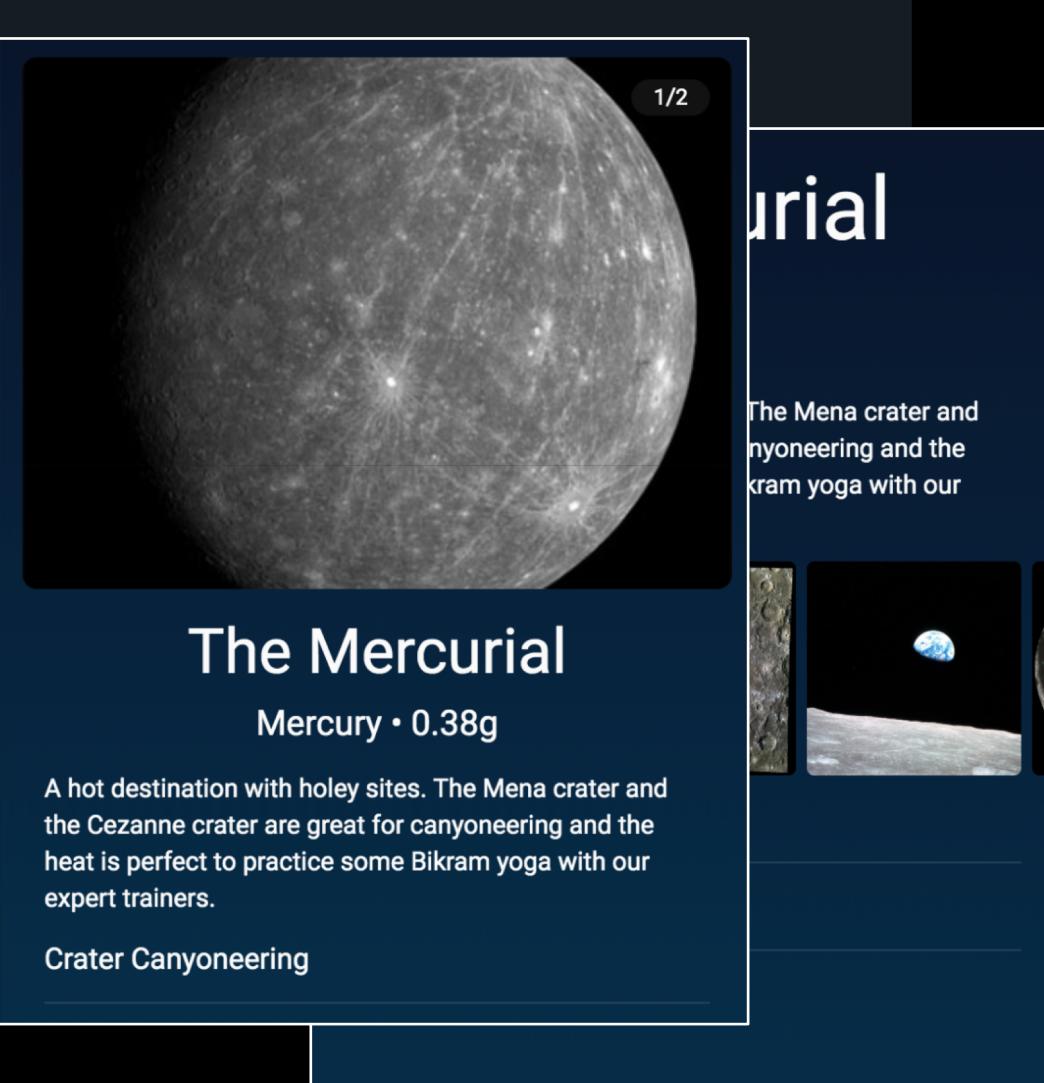


image-carousel and image-list
for displaying multiple pictures

Reorder components

Customize title-area alignment
and text style

single-line to place icons and
text in one line

Building blocks for easy to use, delightful UI

Demo: Build an Input View

```
input-view {  
    match: PhoneNumber  
  
    render for e {  
        Phone Number  
        (650) 123-4|  
          
        label (Phone Number)  
        type (PhoneNumber)  
        pattern {  
            mask ("(000) 000-0000")  
        }  
    }  
    on-submit {  
        goal: PhoneNumber  
        value: viv.core.FormElement(phoneNumber)  
    }  
}
```

text-input with mask pattern for phone number, zip code, etc.

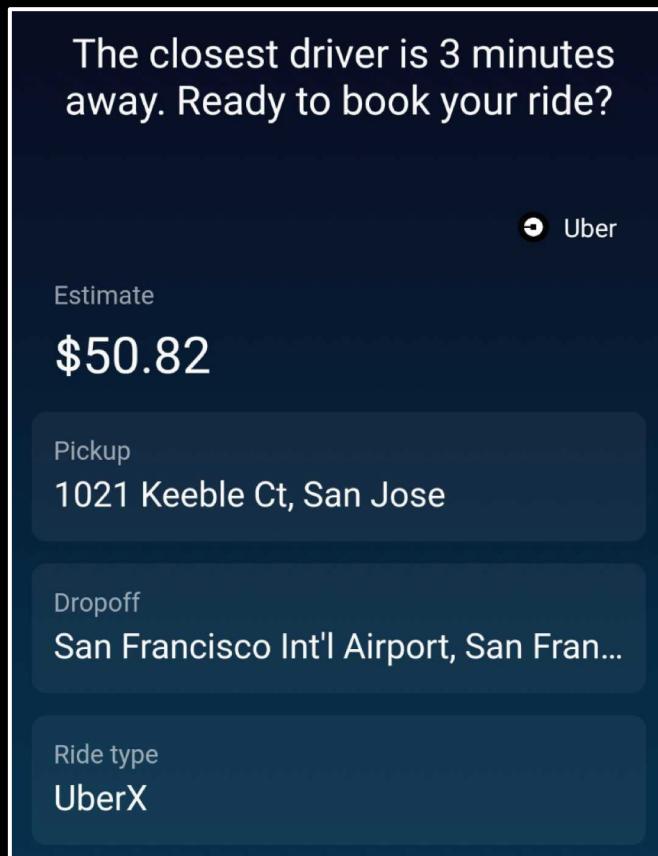
Check out the input-view tutorial video on YouTube channel that covers how to bind input to a model and also how to make it work both by voice or type.

Check out the survey capsule at BixbyDevelopers GitHub repo to learn for a complete example.

How should we use the building blocks?

Design best practices

"Get me an Uber to SFO"



Get straight to the point
Deliver what users need
Dialog and content work together

How should we use the building blocks?

Dos and Don'ts

"Find the best space resort on Venus"

Do this!

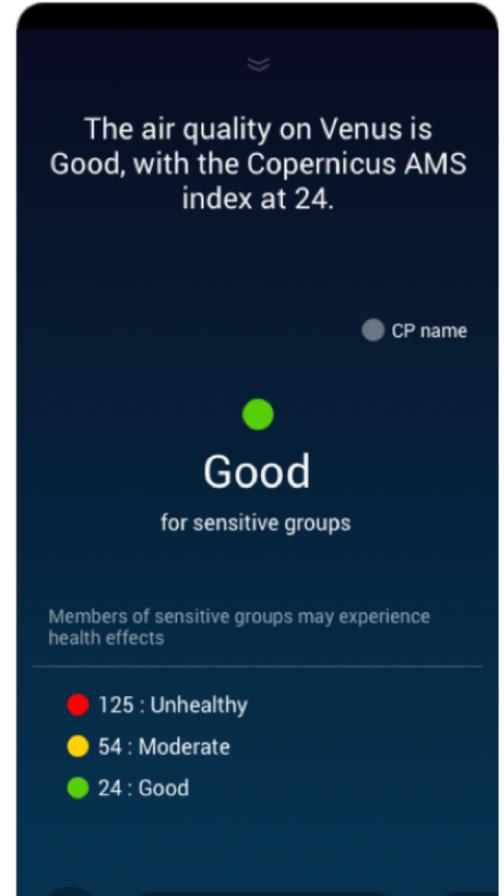
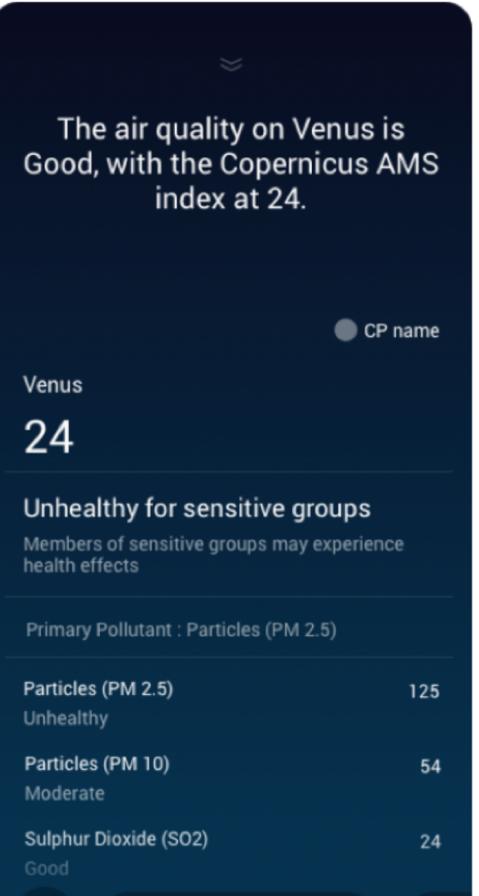
Don't do this!

Keep it simple and minimal.
You shouldn't try to recreate a
touch-based UI application.

How should we use the building blocks?

Dos and Don'ts

"What's the air quality on Venus today?"

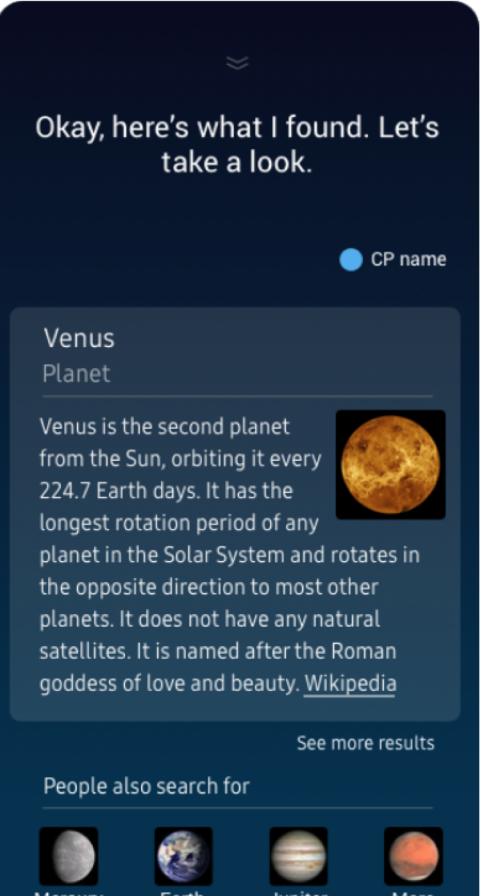
Do this!	Don't do this!												
 <p>The air quality on Venus is Good, with the Copernicus AMS index at 24.</p> <p>CP name</p> <p>Good</p> <p>for sensitive groups</p> <p>Members of sensitive groups may experience health effects</p> <p>● 125 : Unhealthy</p> <p>● 54 : Moderate</p> <p>● 24 : Good</p>	 <p>The air quality on Venus is Good, with the Copernicus AMS index at 24.</p> <p>CP name</p> <p>Venus</p> <p>24</p> <p>Unhealthy for sensitive groups</p> <p>Members of sensitive groups may experience health effects</p> <p>Primary Pollutant : Particles (PM 2.5)</p> <table border="1"><thead><tr><th>Pollutant</th><th>Index</th><th>Status</th></tr></thead><tbody><tr><td>Particles (PM 2.5)</td><td>125</td><td>Unhealthy</td></tr><tr><td>Particles (PM 10)</td><td>54</td><td>Moderate</td></tr><tr><td>Sulphur Dioxide (SO₂)</td><td>24</td><td>Good</td></tr></tbody></table>	Pollutant	Index	Status	Particles (PM 2.5)	125	Unhealthy	Particles (PM 10)	54	Moderate	Sulphur Dioxide (SO ₂)	24	Good
Pollutant	Index	Status											
Particles (PM 2.5)	125	Unhealthy											
Particles (PM 10)	54	Moderate											
Sulphur Dioxide (SO ₂)	24	Good											

Make sure you're designing for both the content and dialog, and that they work well together

How should we use the building blocks?

Dos and Don'ts

"Where is Venus?"

Do this!	Don't do this!
 <p>Venus is located in the Milky Way Galaxy.</p> <p>Space Resorts</p> <p>It is currently 162 million miles from Earth.</p> 	 <p>Okay, here's what I found. Let's take a look.</p> <p>CP name</p> <p>Venus Planet</p> <p>Venus is the second planet from the Sun, orbiting it every 224.7 Earth days. It has the longest rotation period of any planet in the Solar System and rotates in the opposite direction to most other planets. It does not have any natural satellites. It is named after the Roman goddess of love and beauty. Wikipedia</p> <p>See more results</p> <p>People also search for</p>  <p>Mercury Earth Jupiter Mars</p>

Provide the most relevant content, based on the user's utterance.



Bixby Views
works
cross-device

Bixby Views – What can it do for your capsules?

Add easy to use, delightful UI

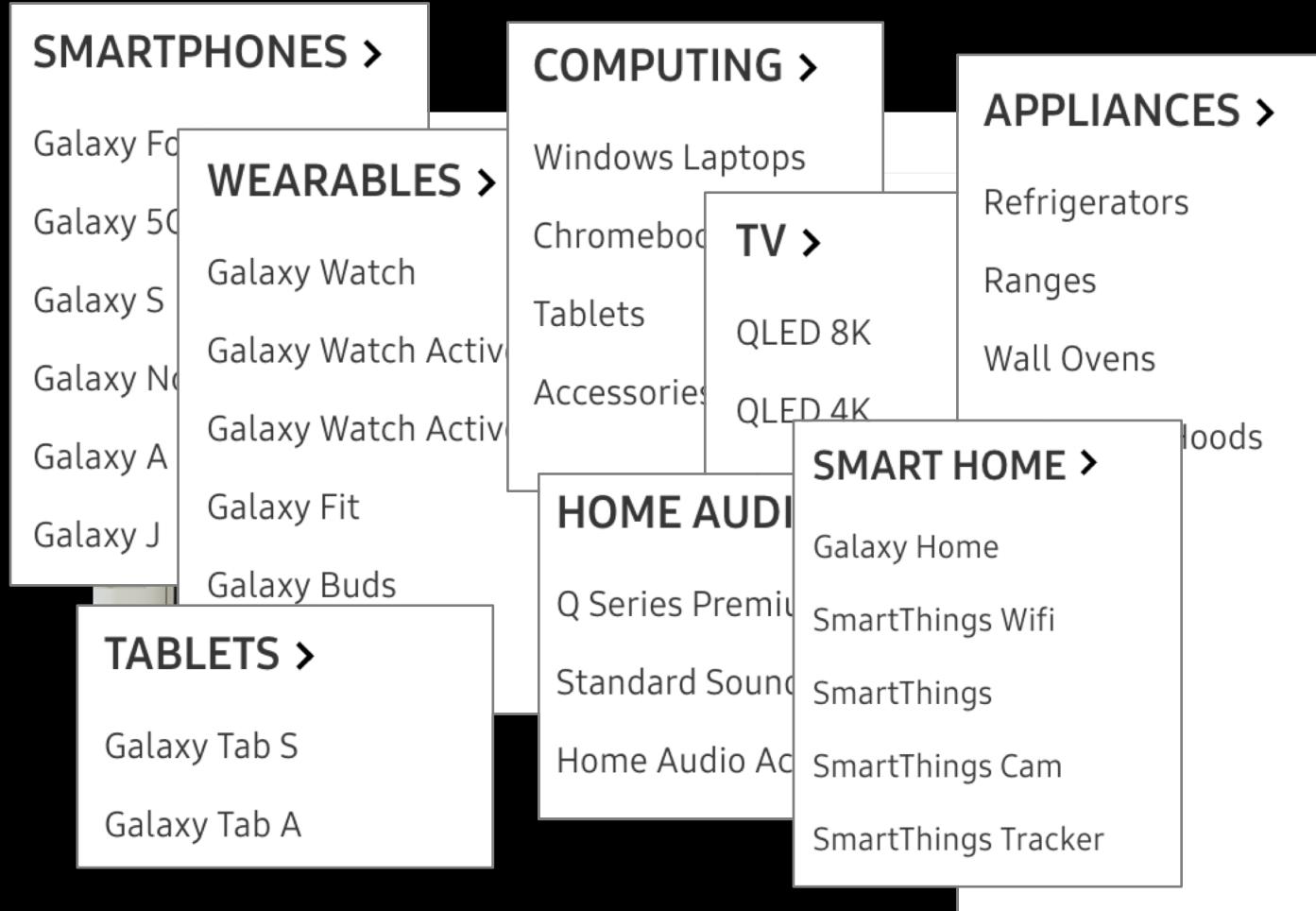
that works across devices

in a developer-friendly way



Why do we care about cross-device?

Multiple good reasons



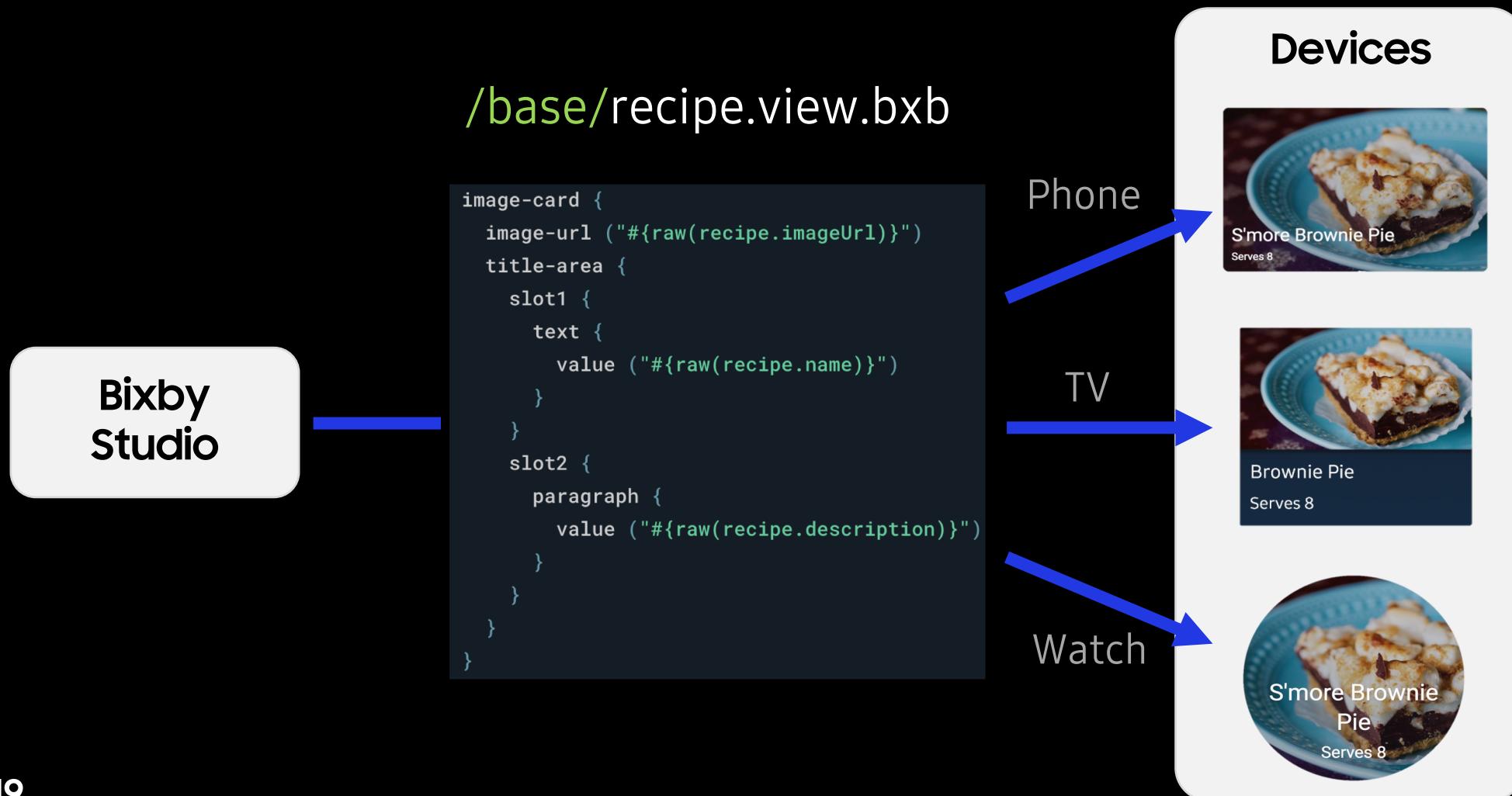
Convenient for users to be able to use the same capsule on any device

Desirable for brand engagement and loyalty

Still, if it is too expensive to target new devices, cross-device support would not make economic sense

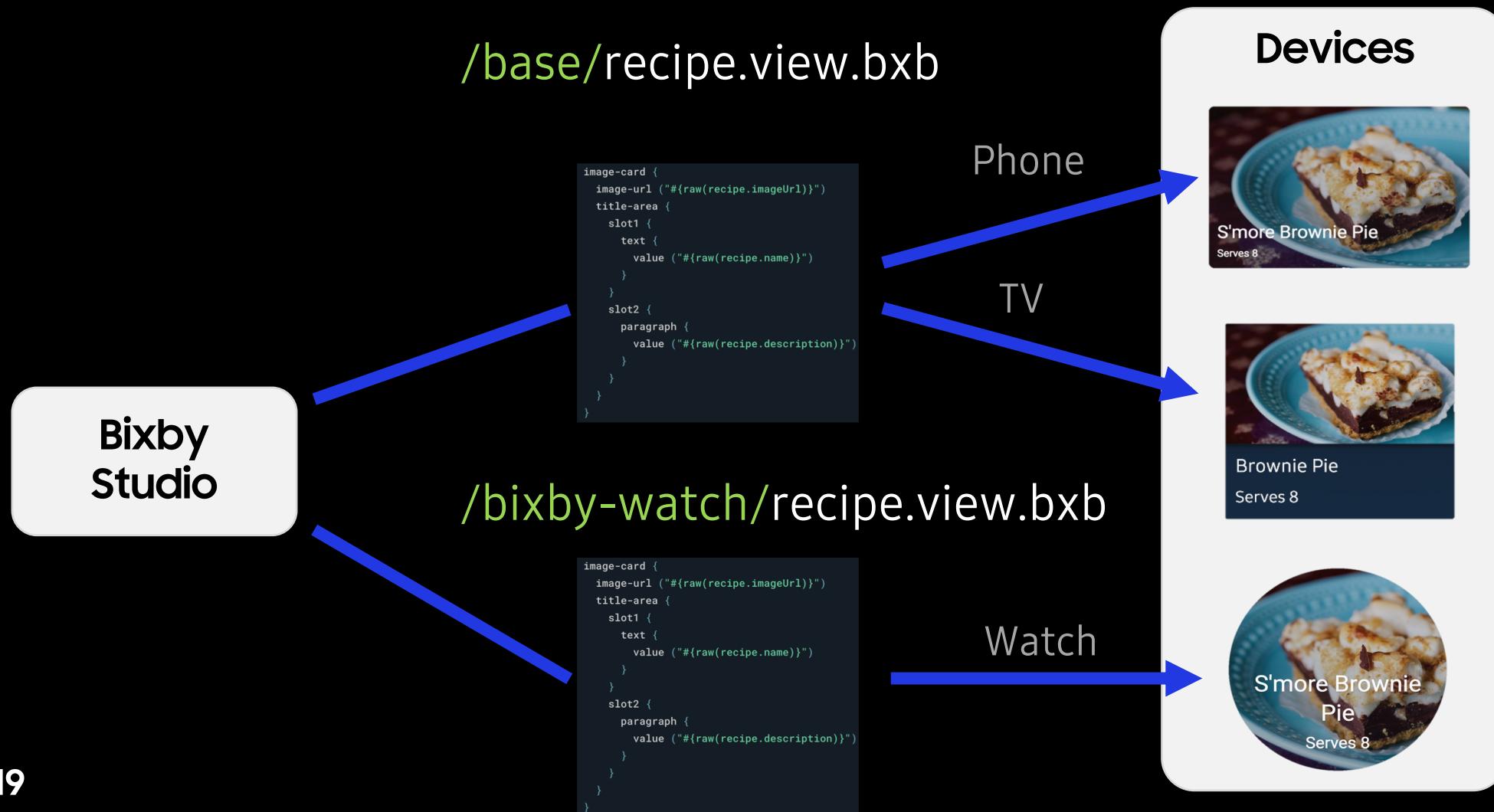
How does Bixby Views enable cross-device portability?

Components adapt to multiple devices



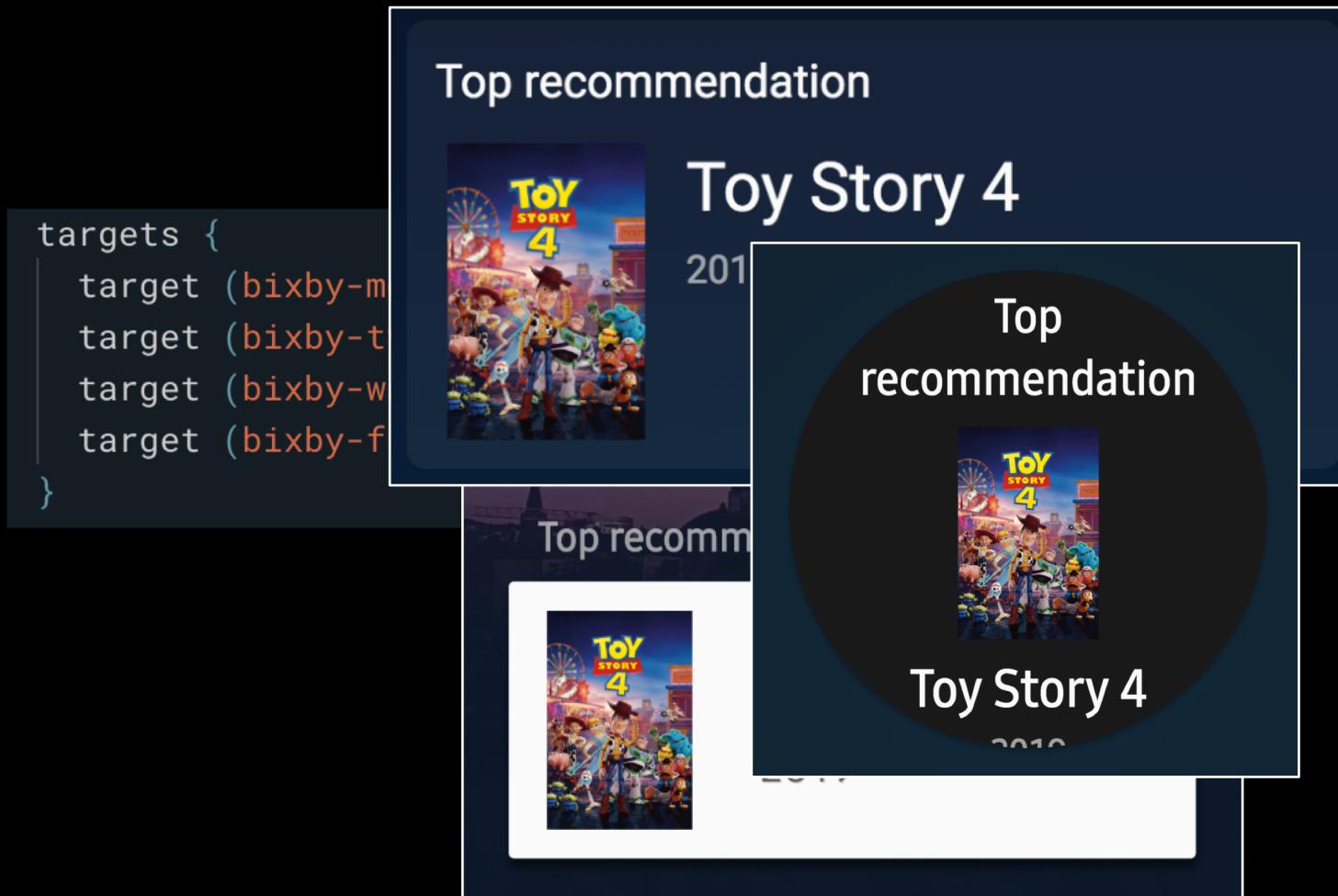
When automatic adaptation is not sufficient, developers shouldn't be blocked

Device-specific layout is possible



Automatic adaptation of view layout

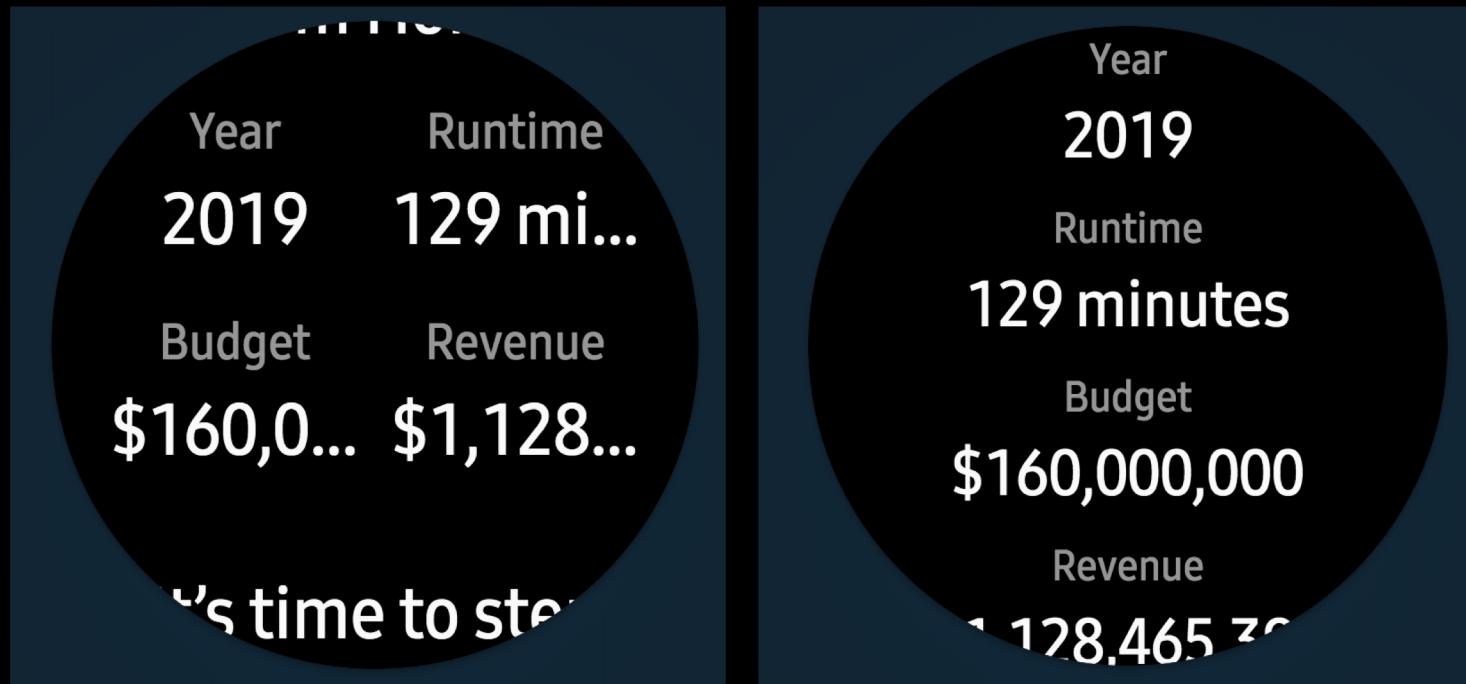
Demo: Add new device targets



Add 3 new device targets
Text size, spacing, column size,
text align, max lines, etc. are
adjusted for the target device
Notice text truncation with
hbox on watch

Allow for device-specific layout optimization

Demo: Add custom layout for watch

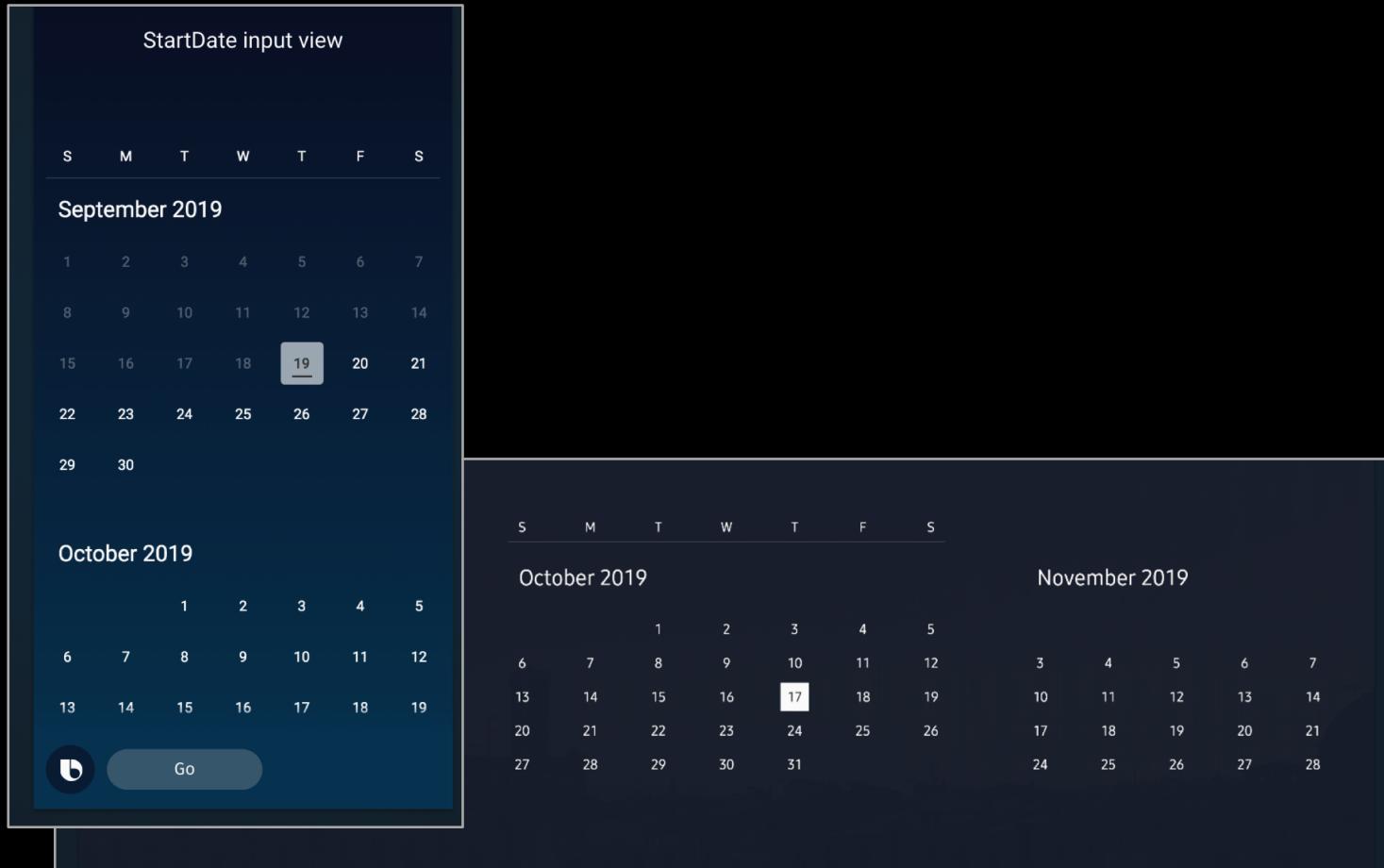


Resolve the text truncation issue with hbox by adding a custom layout for watch

Notice that only the layout macro for movie details needs to be overridden

Automatic adaptation of input view component

Demo: Calendar component



On phone and fridge, vertical layout with touch support

On TV, horizontal layout with remote controller support

On watch, voice only



Bixby Views is
developer
friendly

Bixby Views – What can it do for your capsules?

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Write Bixby Views efficiently and error-free

Auto-complete in Bixby Studio

```
image-card {  
    aspect-ratio (4:3)  
    title-area {  
        slot1 {  
            text {  
                value ("")  
            }  
        }  
    }  
    im ↳ halign_(Center)  
    im ↳ halign_(End)  
    im ↳ halign_(Start)  
    para ↳ slot1  
    st ↳ slot2  
    va ↳ slot3
```

Use auto-complete to write components efficiently

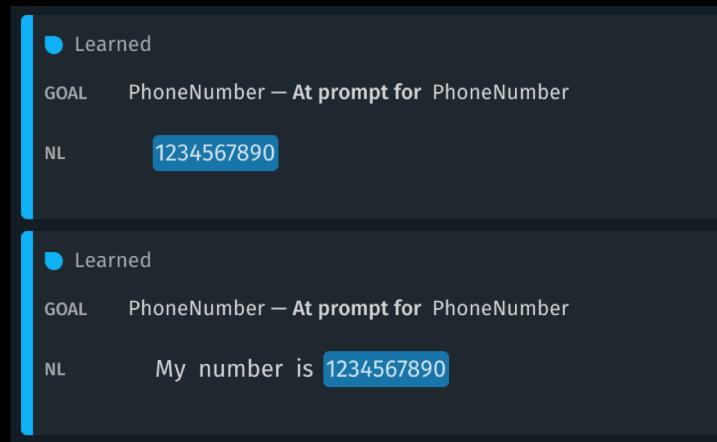
Use auto-complete to discover various options of a component

Use bracket matching to find component boundaries

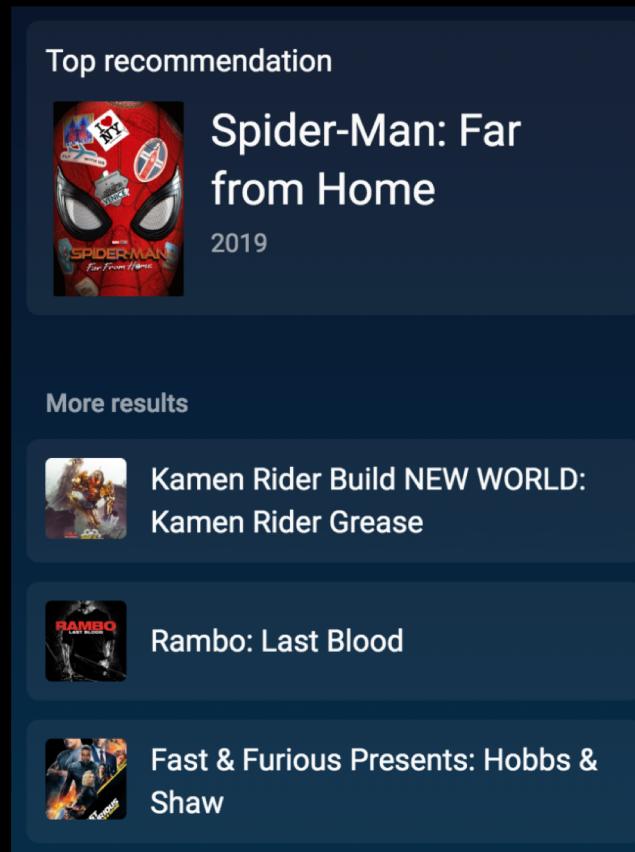
Can I enable my capsule for both voice and touch?

Simple to support voice and touch

"My number is 123 456 7890"



"Select the first one"



Add training so users can use voice to handle input prompt

Some common-sense trainings are added automatically for all supported languages

Where can I find resources to learn Bixby Views?

Bixby Studio, Documentation & Videos

The screenshot shows a search interface with a blue header bar containing a magnifying glass icon and the text 'cell-card'. Below the header is a dark blue sidebar with the title 'References'. The main content area displays a list of search results, each consisting of a blue link and a brief description. A 'Show more...' button is located at the bottom left of the results list. At the bottom of the page, there is a section titled 'Developer Guide Results' with a heading 'Layout Components' and a snippet of text from the developer guide.

References

- layout-macro-def.content.cell-card
- layout-macro-def.content.cell-card.slot1
- layout-macro-def.content.cell-card.slot2
- layout-macro-def.content.cell-card.slot3
- layout.content.section.content.cell-card
- layout-macro-def.content.cell-card.on-click

Show more...

Developer Guide Results

Layout Components
dev-guide/developers/building-views.components

In Creating Bixby Views, we've seen how layouts are built from smaller components: **cards**, **cells**, and various text objects like titles and paragraphs. Let's go into more detail about layout components and their containers. Note: Input views do not use layouts or layout components (although the selectio...

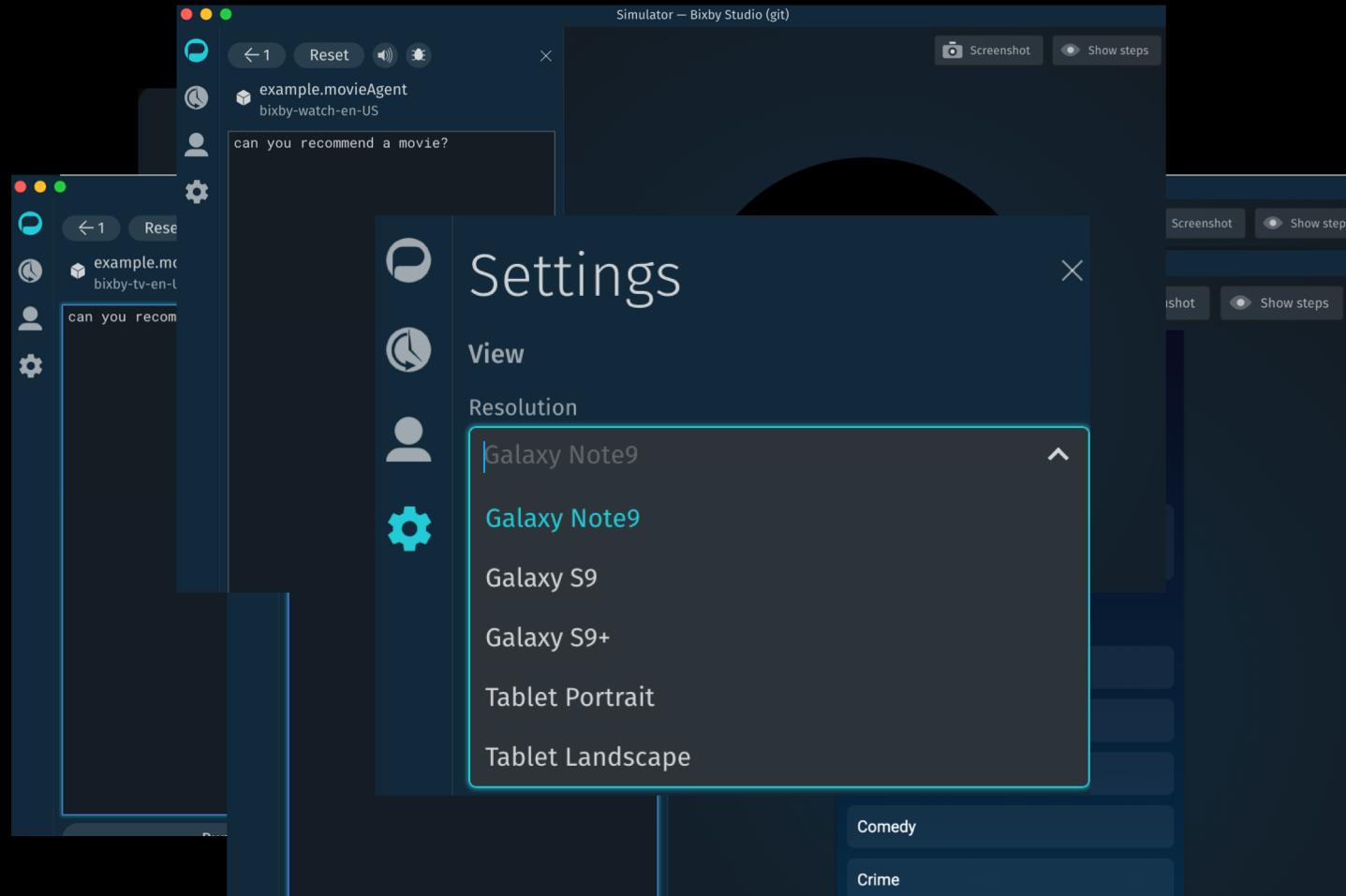
Use search on BixbyDevelopers.com to find reference documentation and screenshots of a component

Check out the result view tutorial videos on YouTube channel

Sample capsule on GitHub repo for each component

Use Simulator to see how the view will look on different devices

Bixby Studio Simulator



Use Simulator to see how the layout will look and work on different devices

It is possible to try the layout with different sizes of phone.



Wrap-up

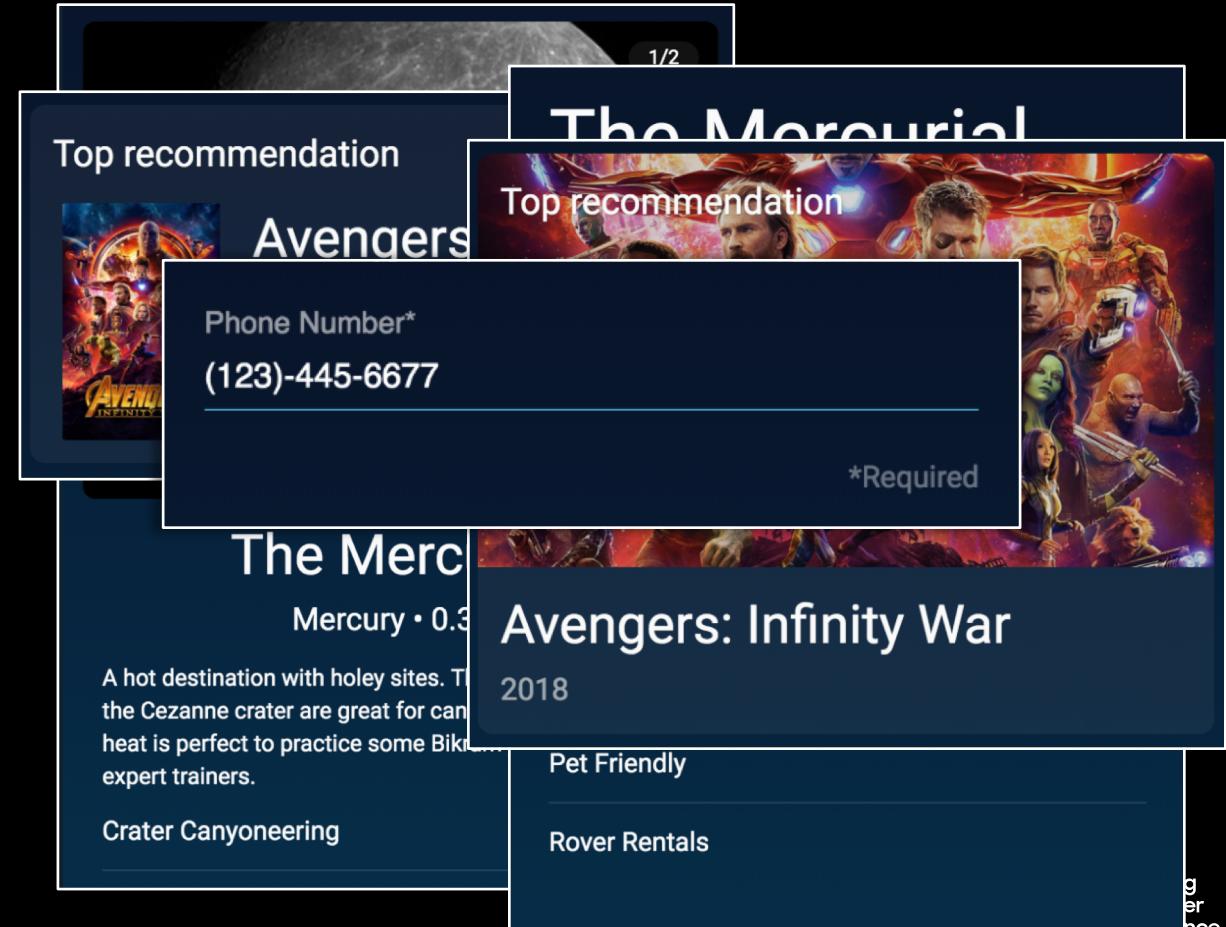
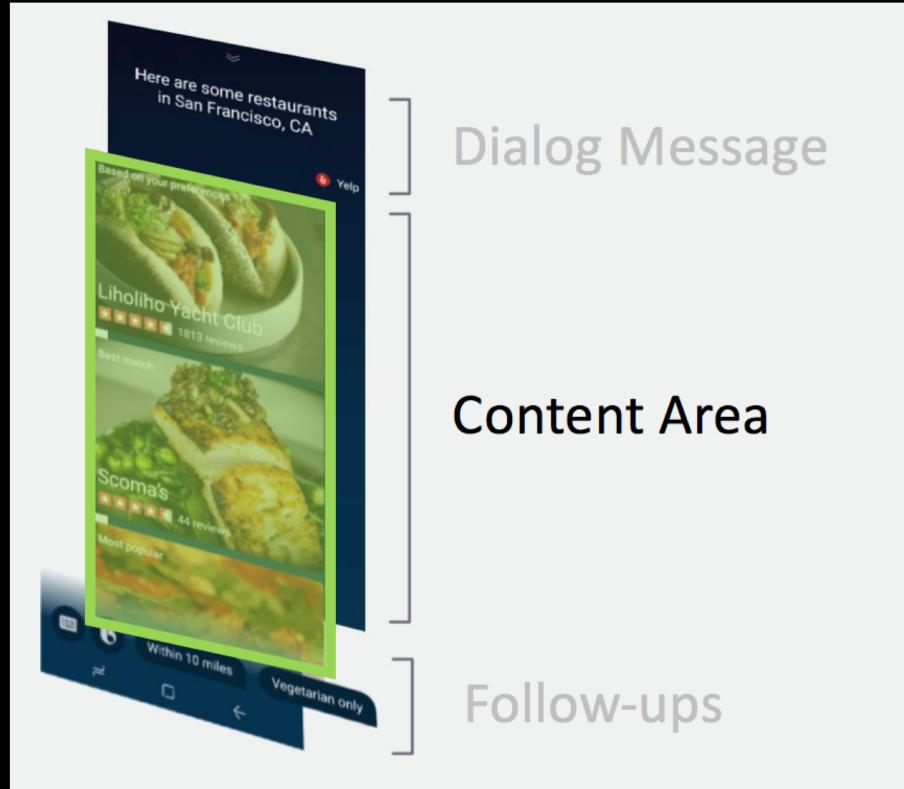
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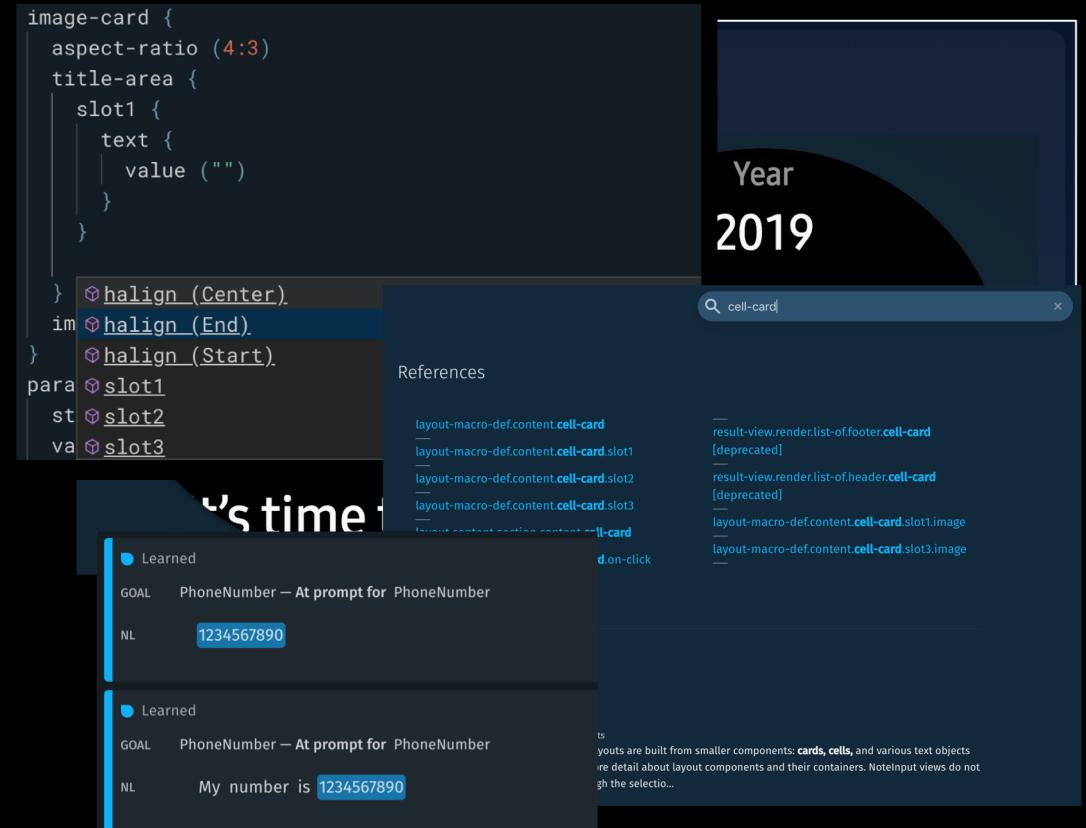
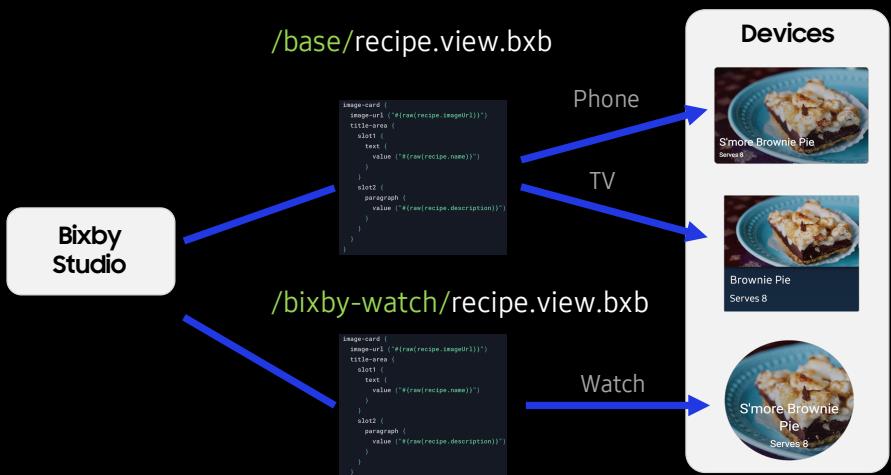
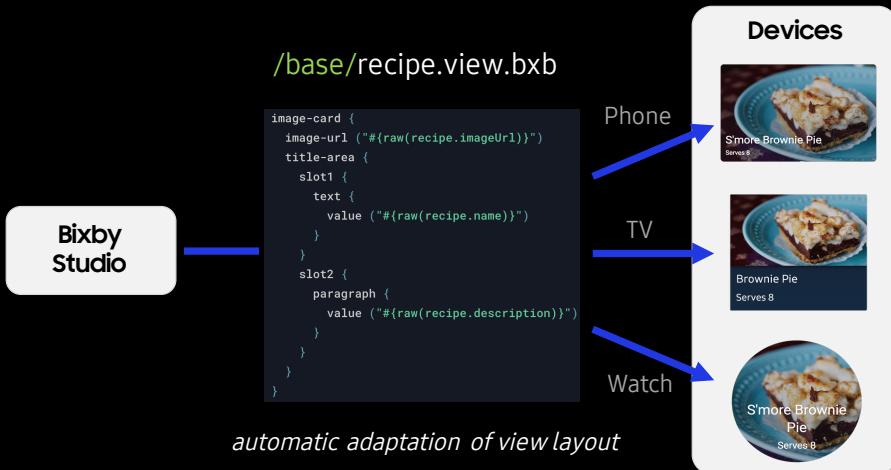
Bixby Views provide

Building blocks for the content area



Bixby Views make it easy to

Create UI that works across devices





Thank You!