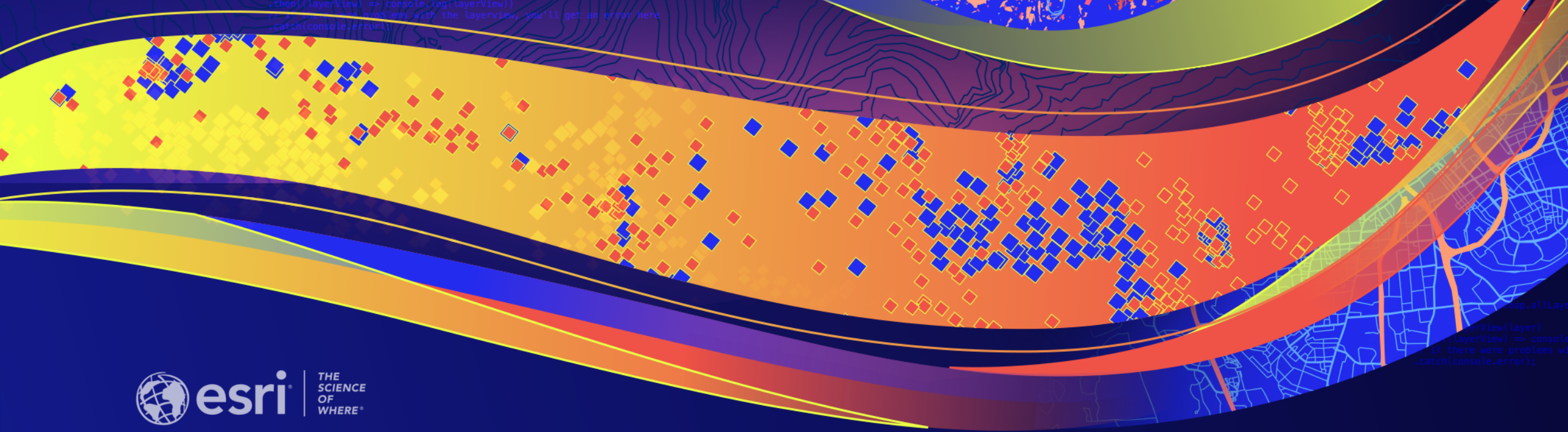

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ESRI DEVELOPER SUMMIT 2023

ArcGIS Experience Builder: Customizing and Extending

Gavin Rehkemper

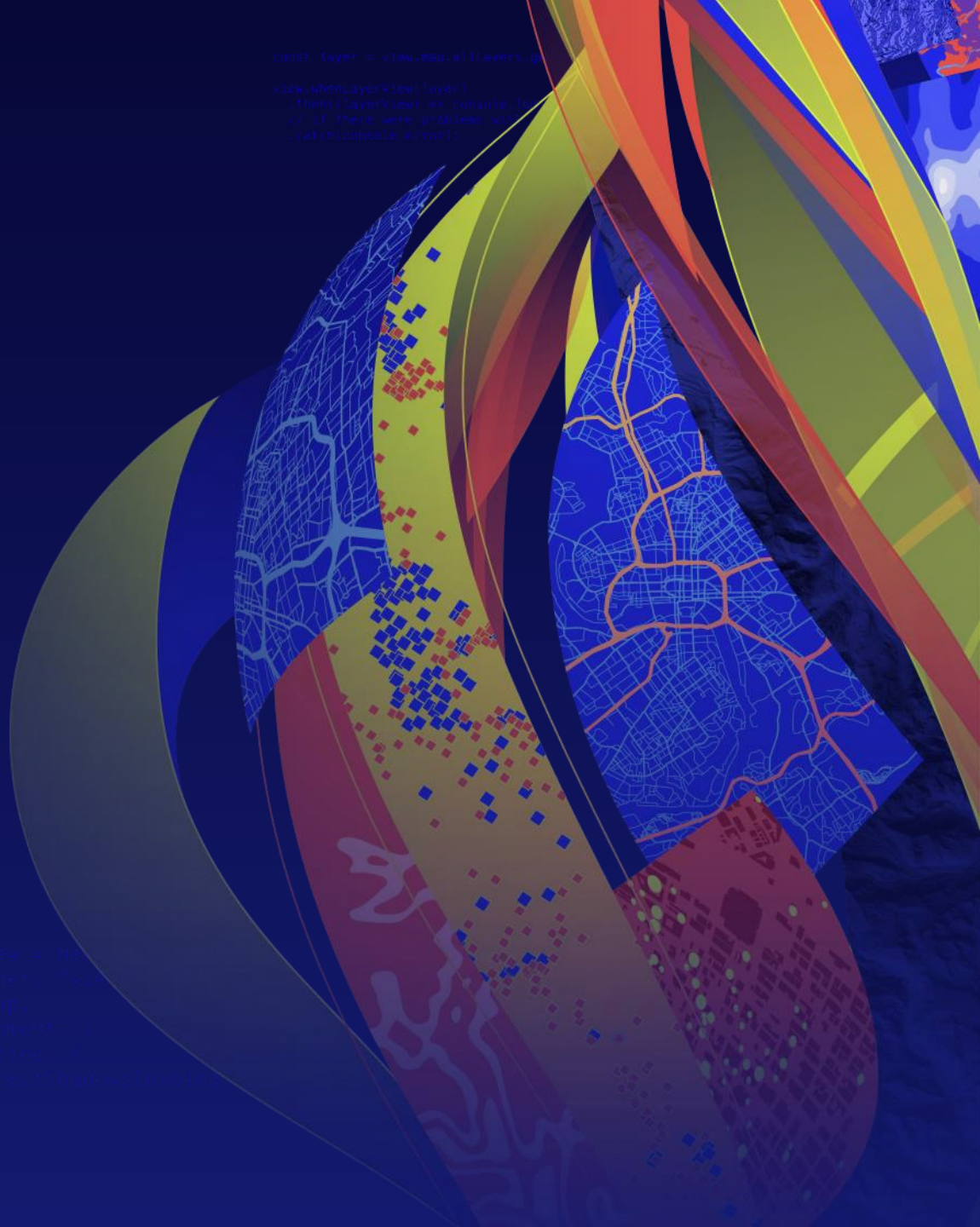
Mark Torrey

Slides: esriurl.com/exb-ce-ds2023

Agenda

- What’s New
- Overview
- Custom Widgets
- Custom Themes
- Deployment
- Automated Deployment (CI/CD)

What’s New



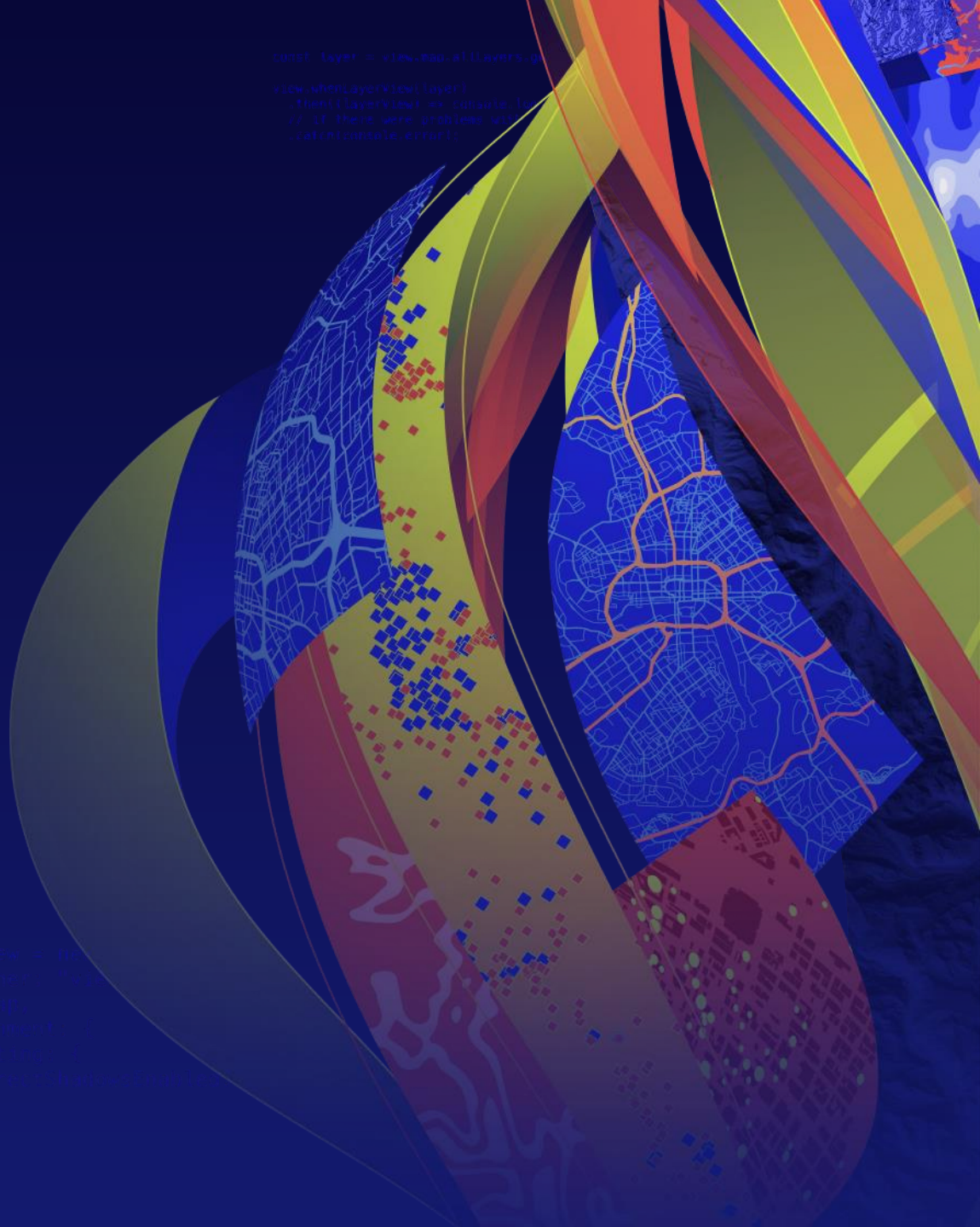
Updates in 1.10

Highlights

- Builder
  - Grid layout
  - Templates
    - Full-Screen: Kit, Chronology, Checkerboard, and Black grid
    - Multipage: Illustrator
  - Two new sample widgets
  - Run developer edition behind a reverse proxy.
- Widgets
  - New: Coordinates, Grid

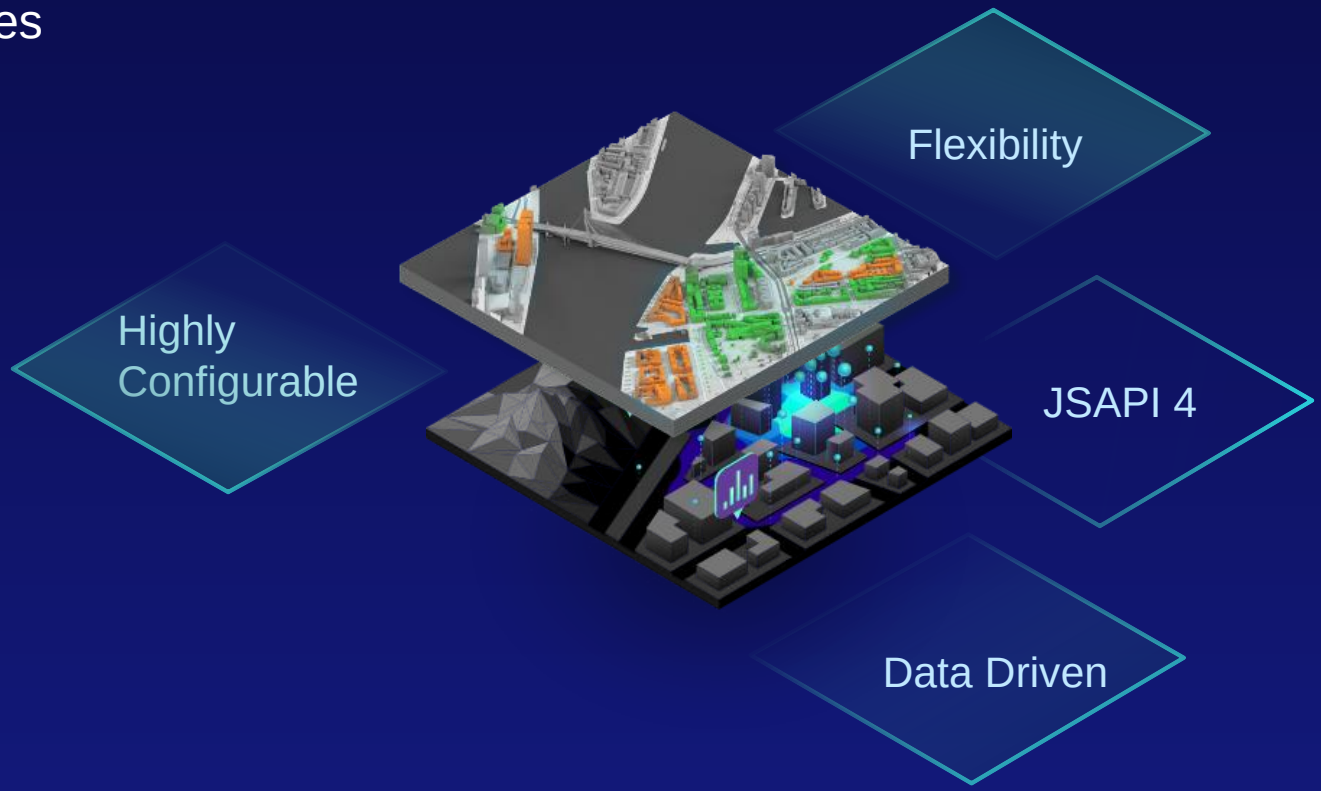
- Go to the developer guide to see a full list updates
  https://developers.arcgis.com/experience-builder/guide/whats-new/

Overview



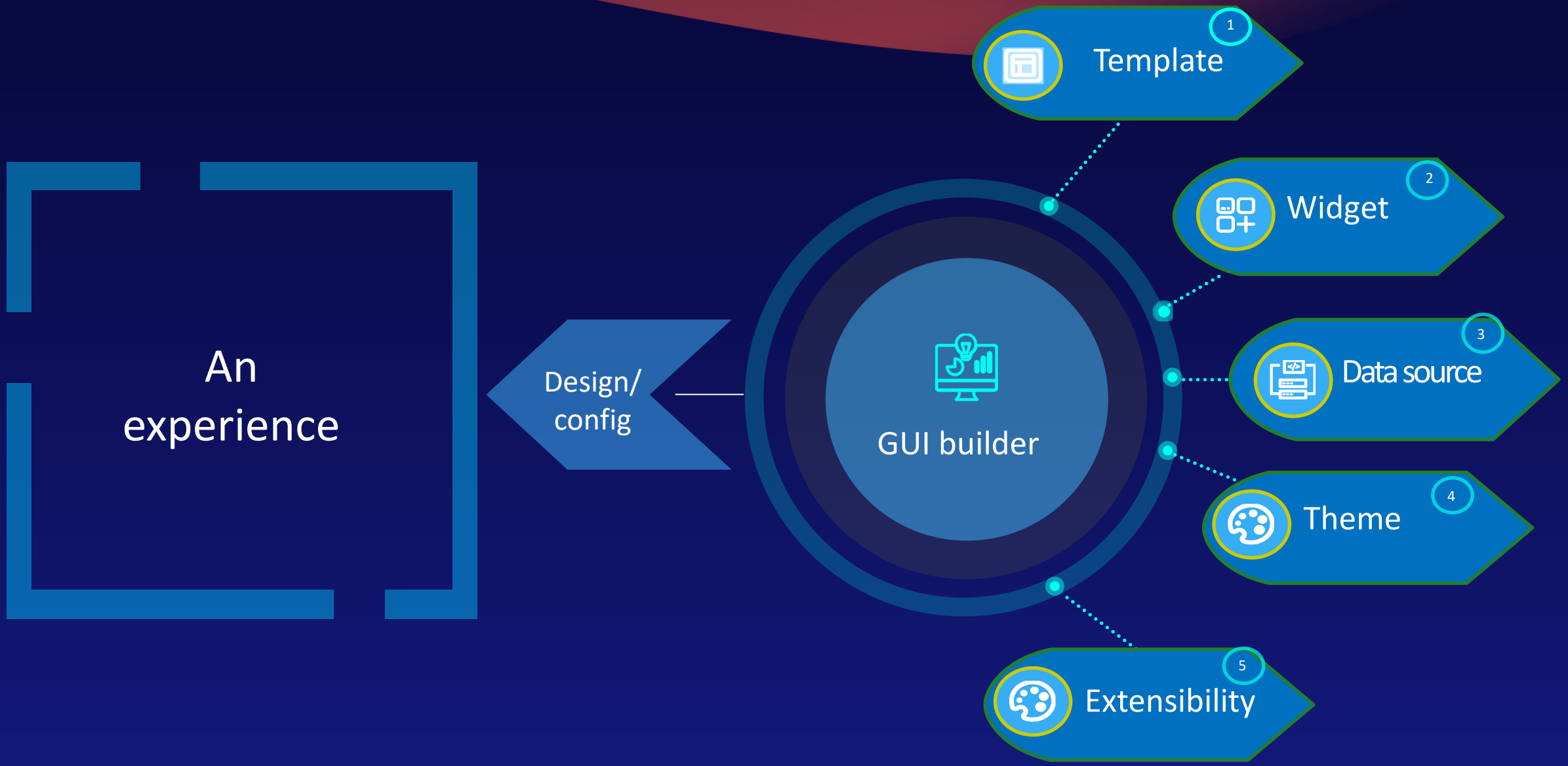
What Experience Builder can do

- Build web apps and pages
  - Explore **design** decisions with templates
  - Access ready-to-use **widgets**
  - Build custom tools
- Data driven
- Modern interface
- Better performance



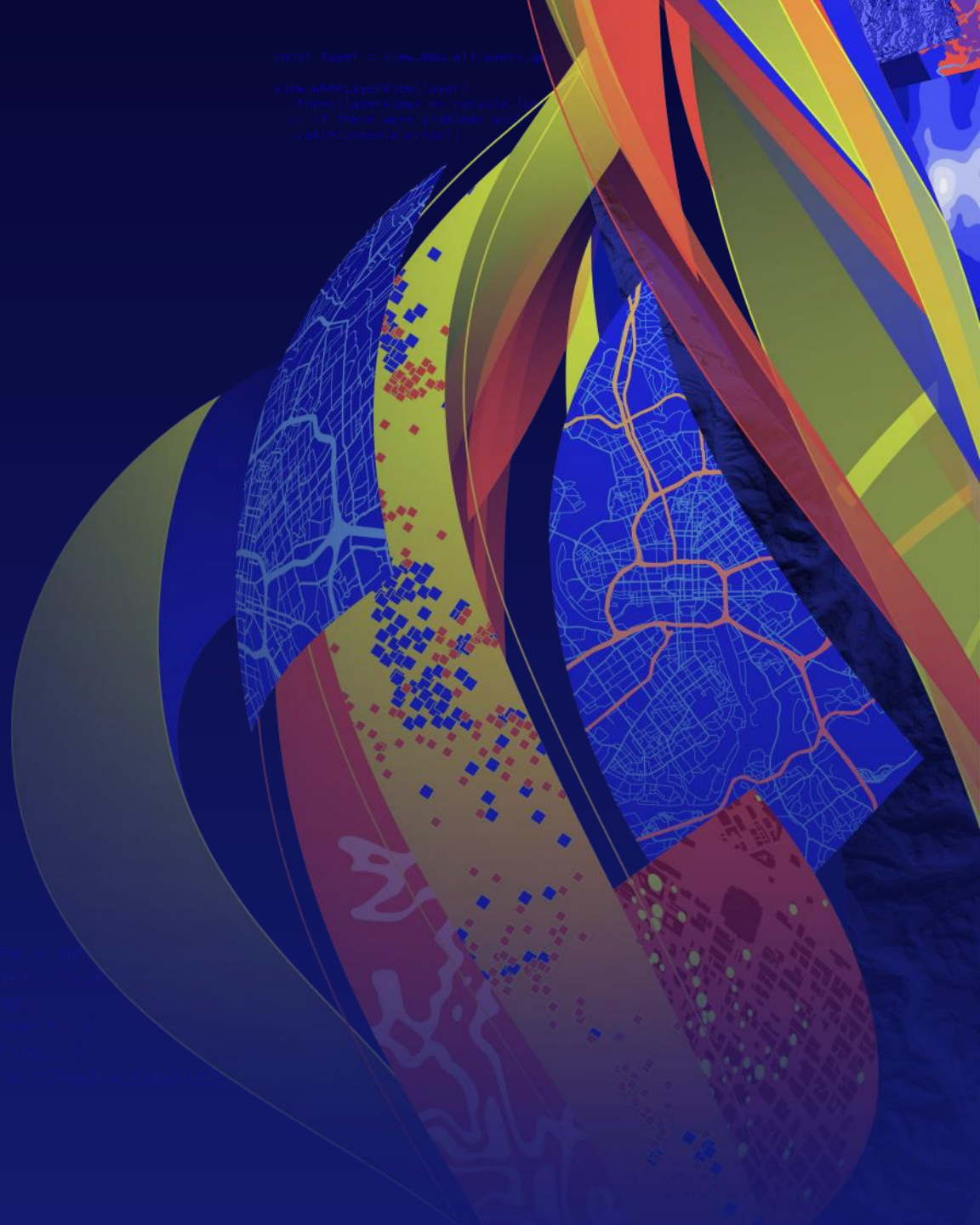
Key Features

- Mobile optimization
- Flexible design
- 2D and 3D in one app
- Communication between widget
- Integration with other ArcGIS apps
- Extensibility


An experience
Design/ config
GUI builder
1
Template
2
Widget
3
Data source
4
Theme
5
Extensibility

Custom Widgets

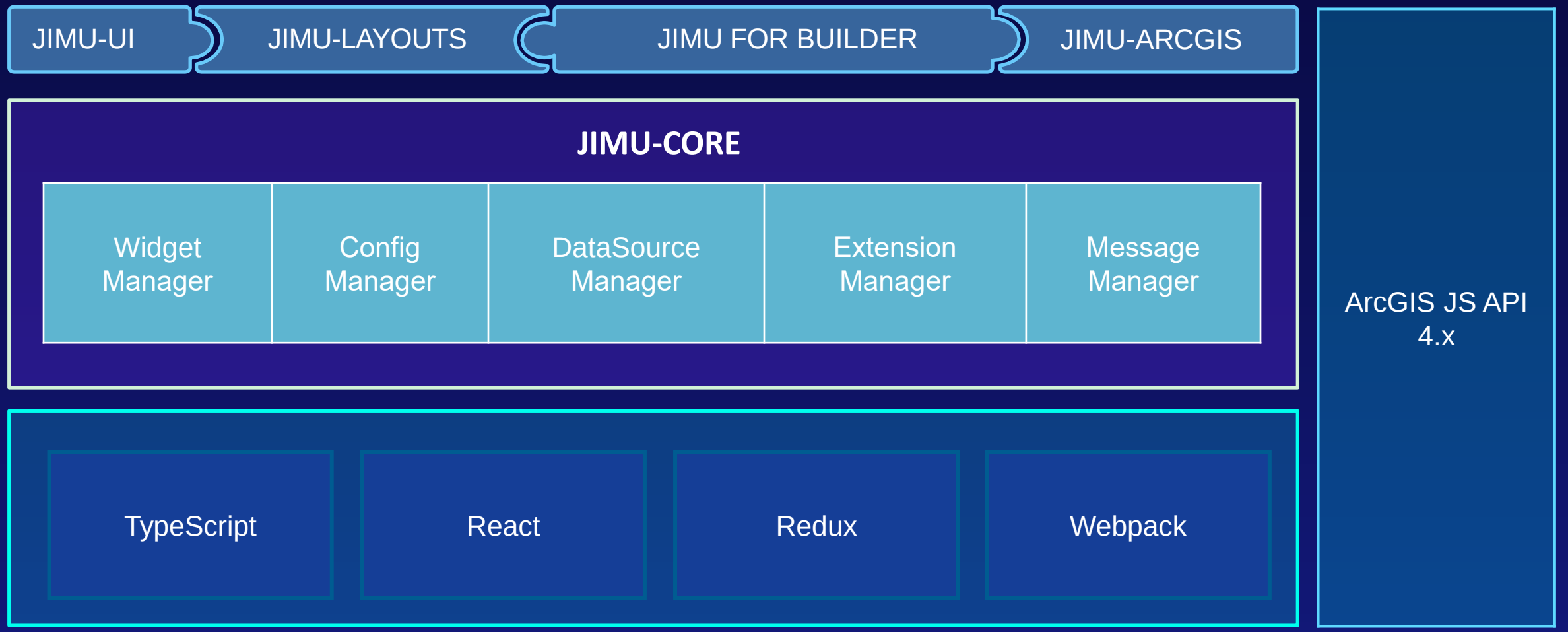
Building blocks of an experience



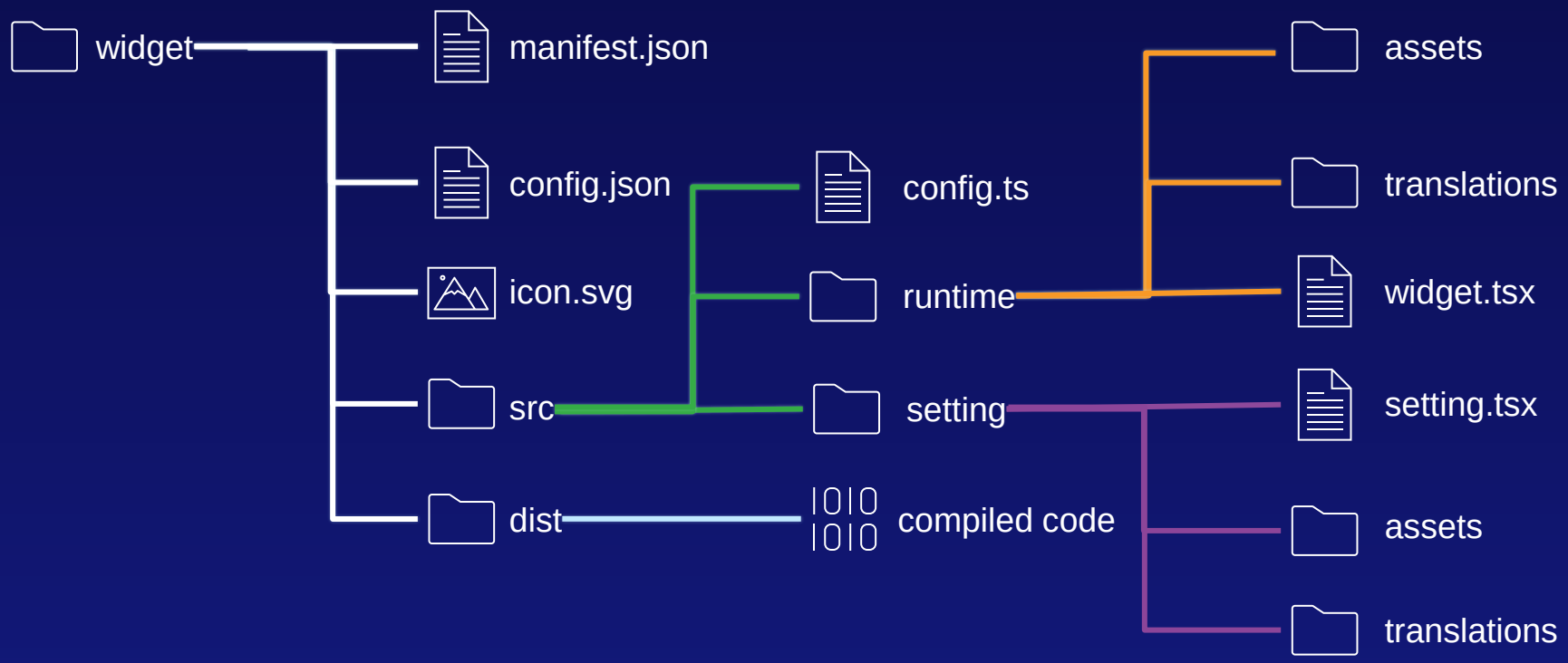
Prerequisites

- React – https://reactjs.org/tutorial/tutorial.html
- Typescript – https://www.typescriptlang.org
- Jimu - https://developers.arcgis.com/experience-builder/api-reference/

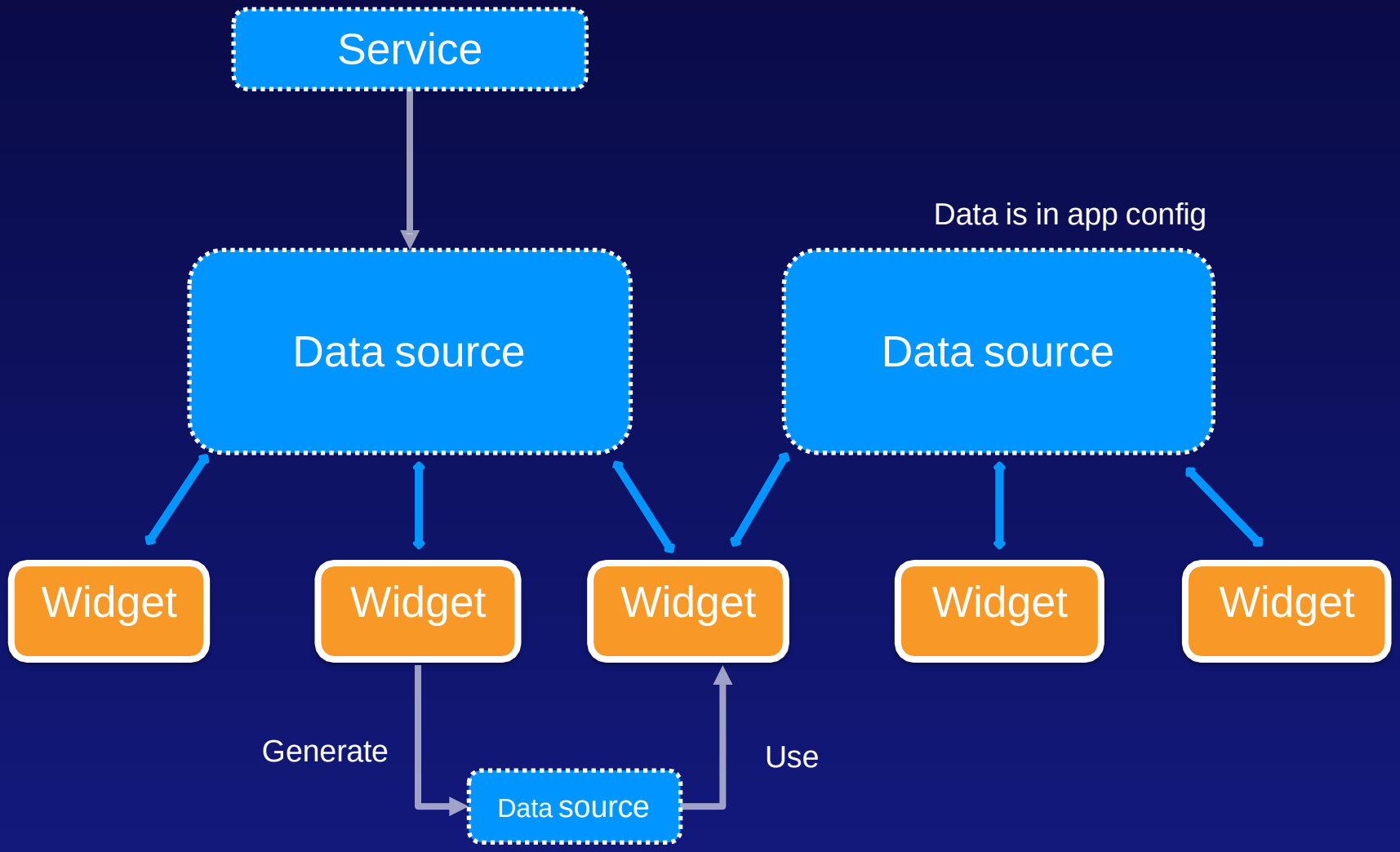
Technology stack

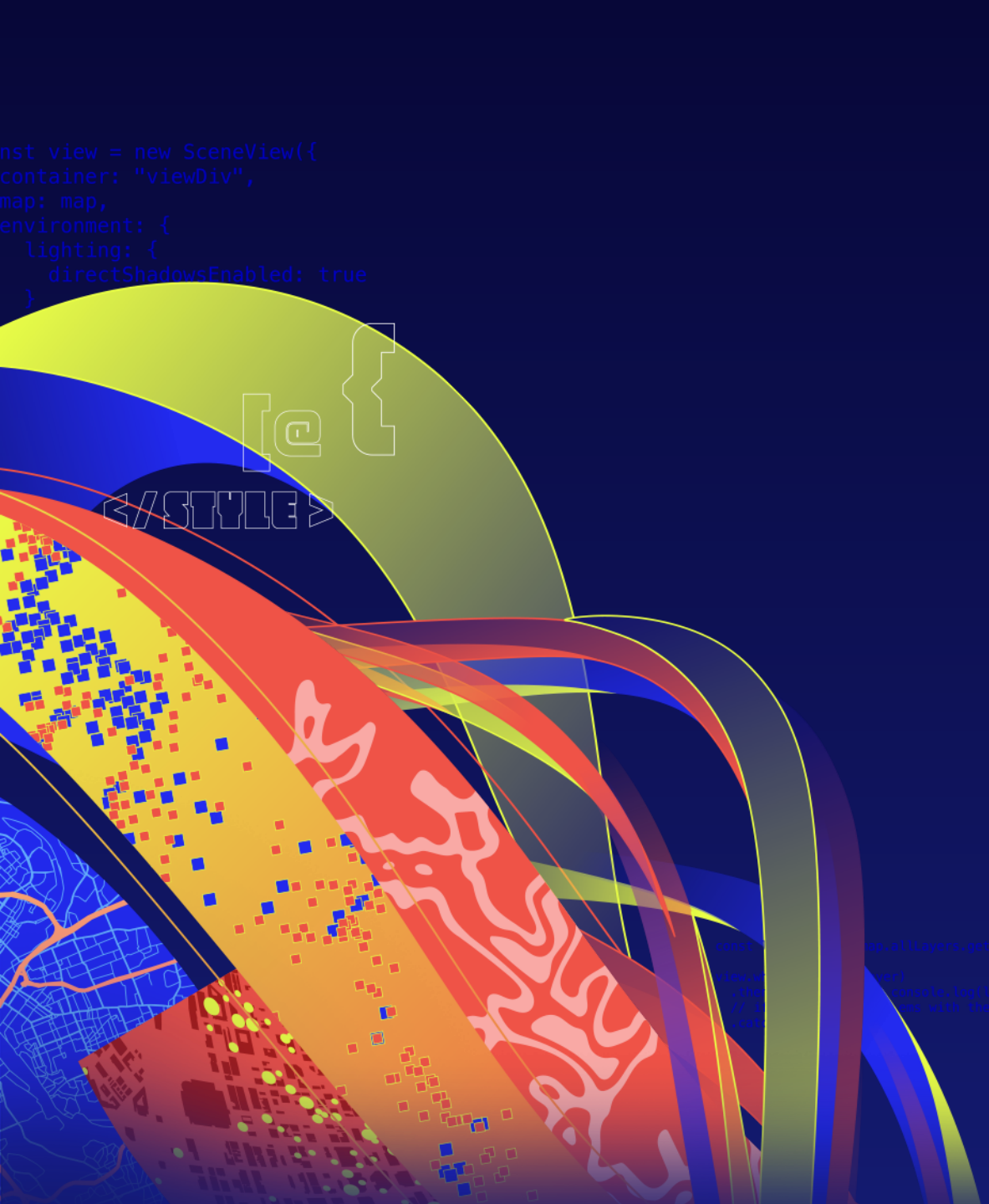


Widget Structure



Data sources

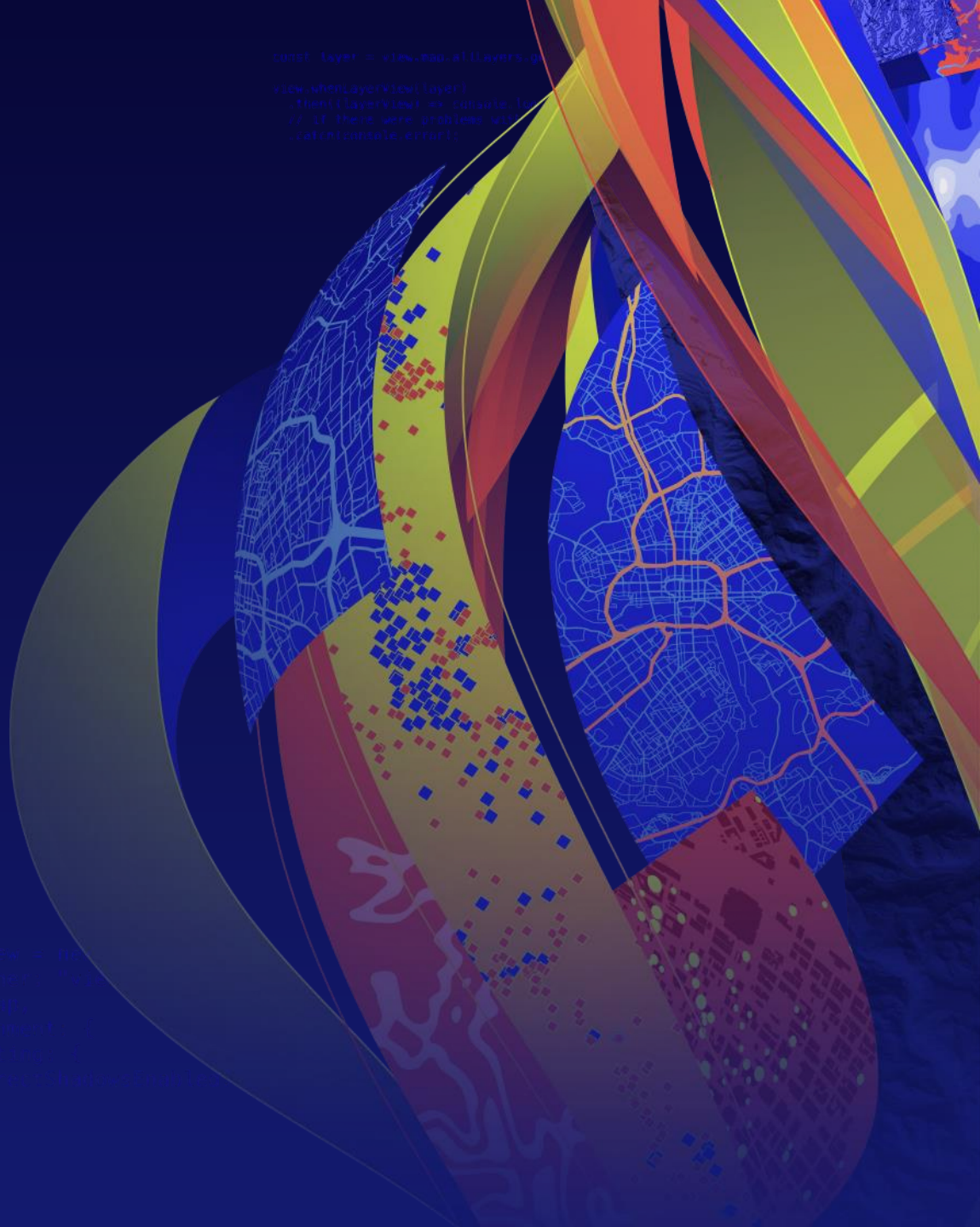



nst view = new SceneView({
container: "viewDiv",
map: map,
environment: {
lighting: {
directShadowsEnabled: true
}
</STYLE>

Widget

Demo

Custom Themes



What is available

Basic:

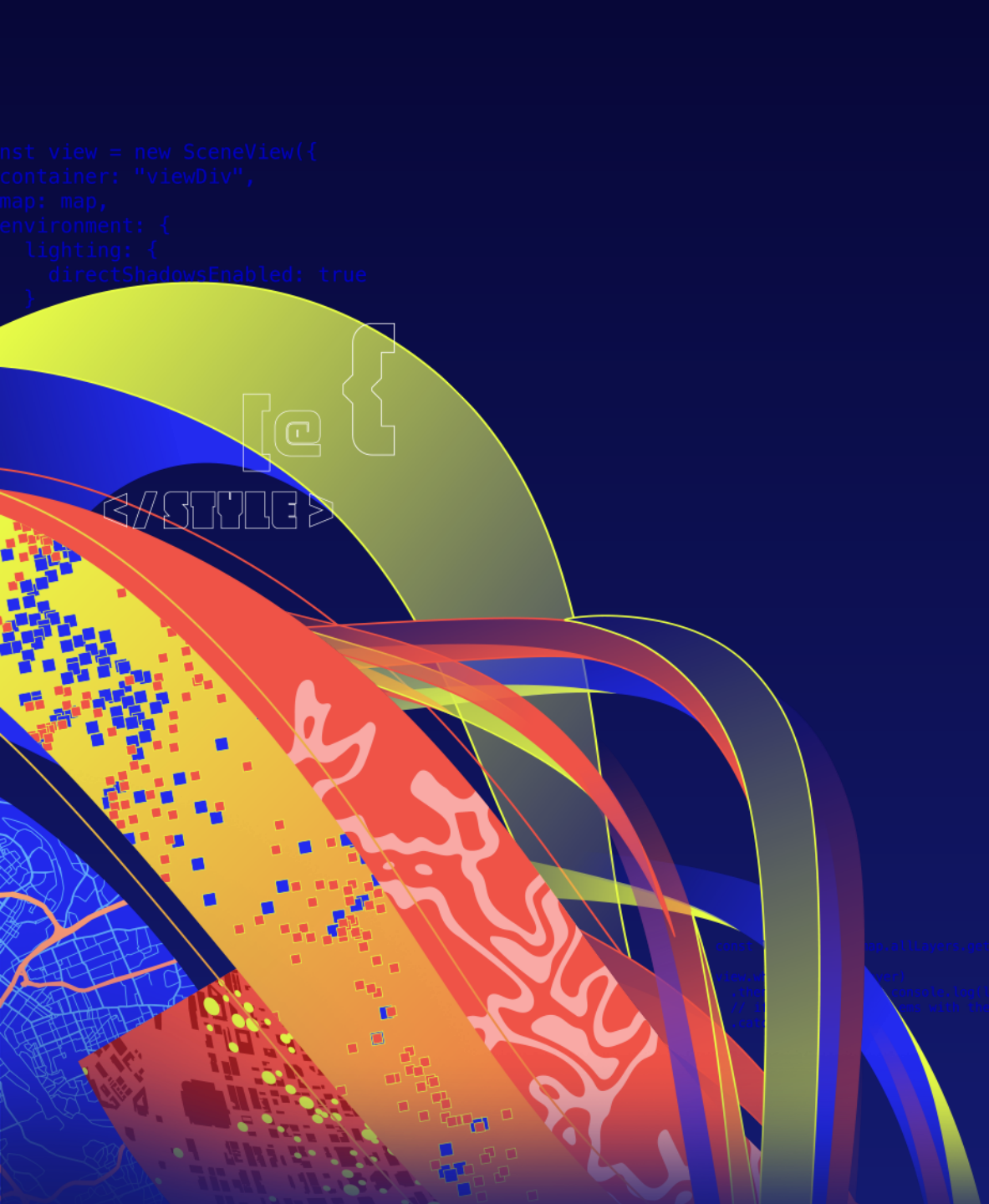
- Colors
- Typography
- Spacing

Advanced

- Style override via Sass CSS
- Assets: fonts, images, etc.

Files

- variables.json
- thumbnail.png
- manifest.json

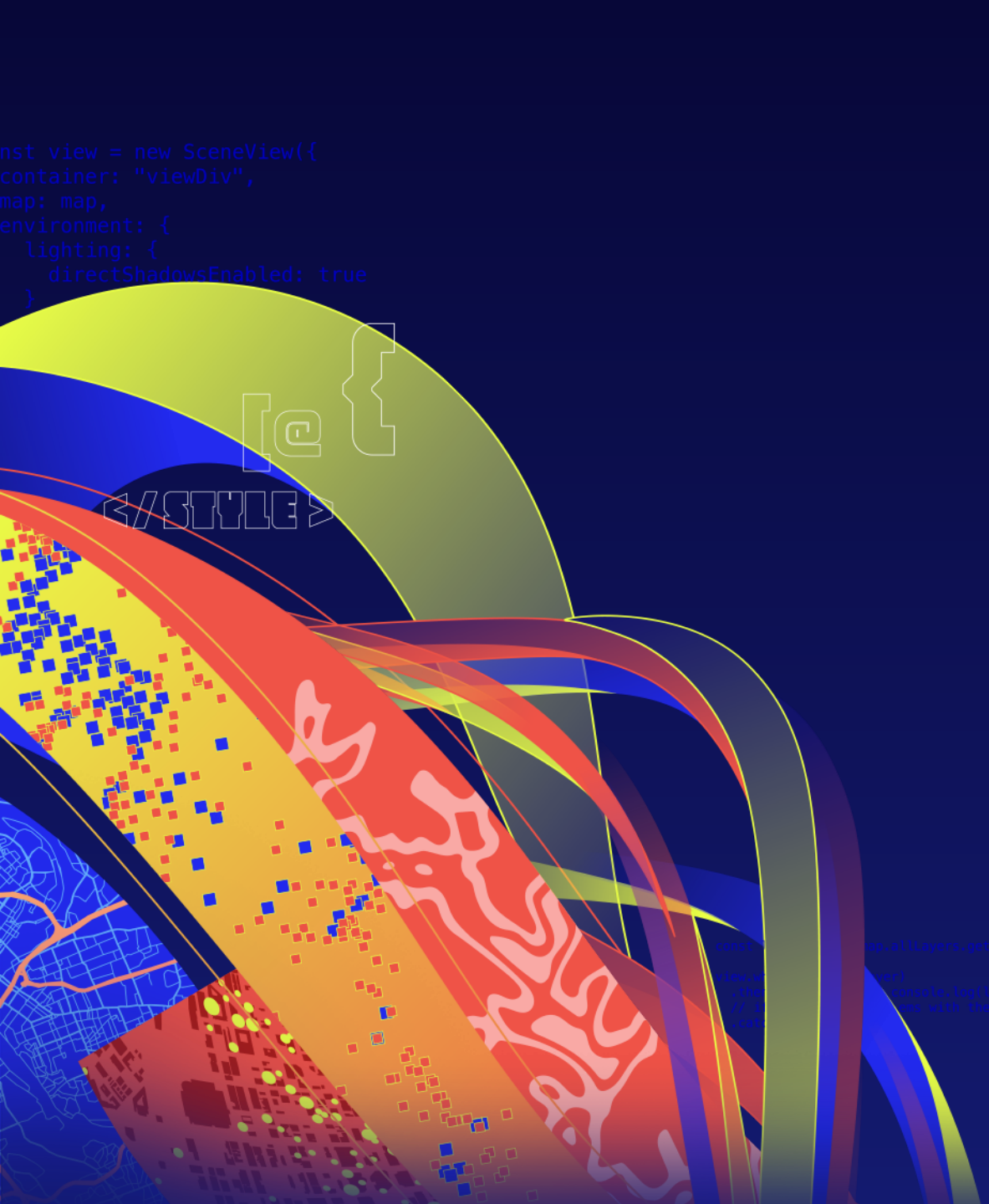


Basic Theme

Demo

Override CSS

- style.ts
  - Use the Emotion library for CSS-in-JS
- style.scss
  - More traditional way
  - Imported last



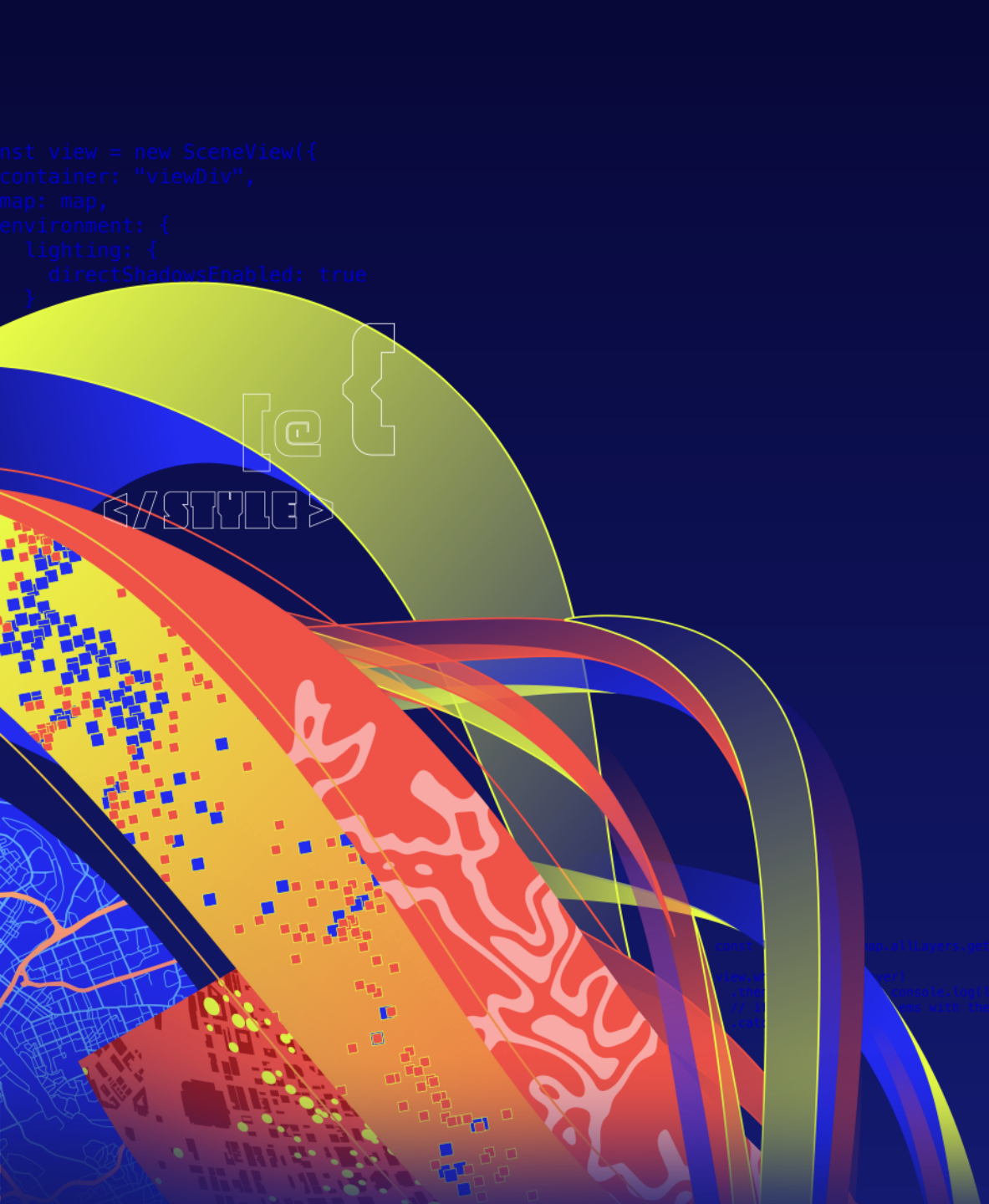
Override CSS

Demo

Custom Fonts

- Use the “Override CSS” method:

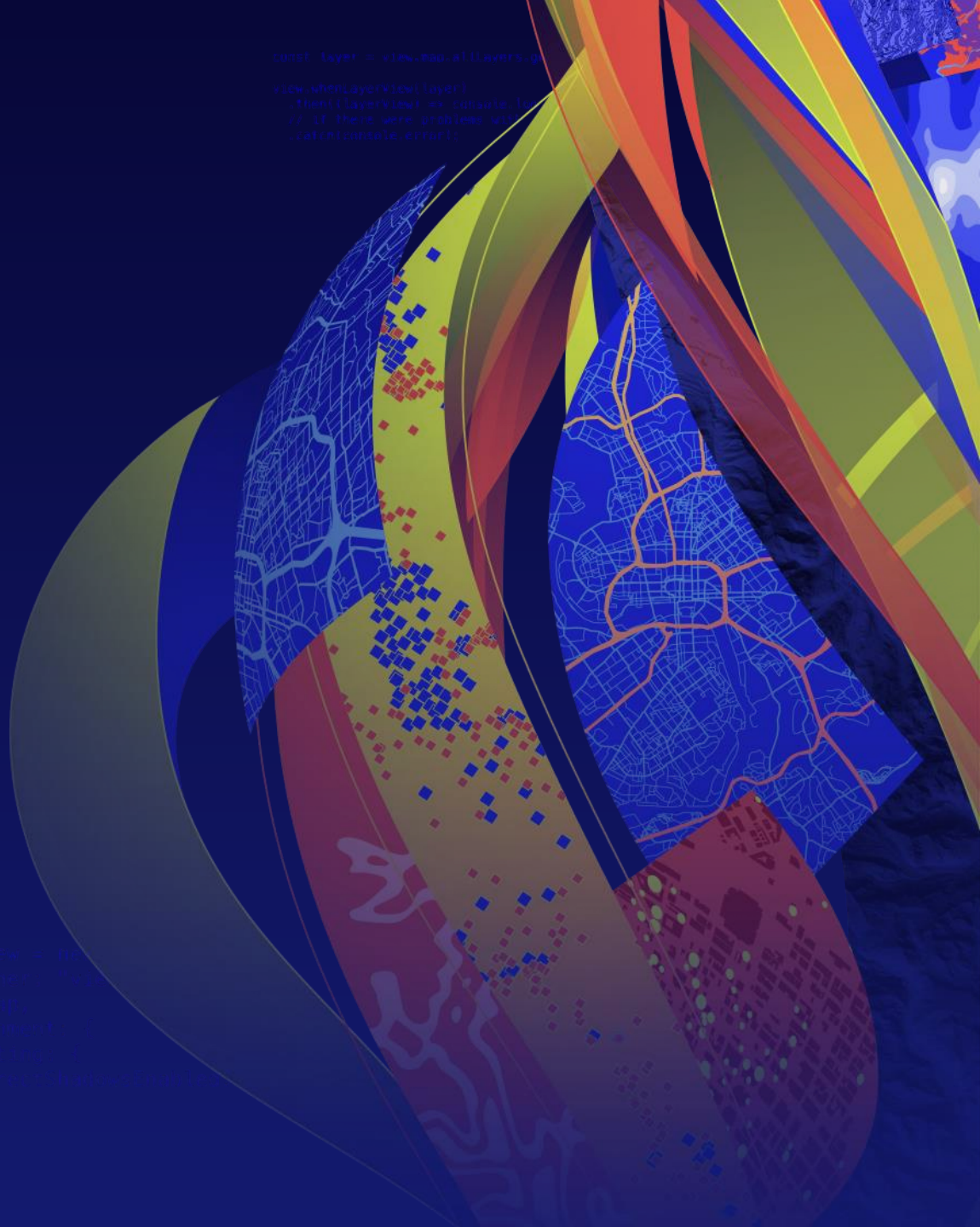
```
@import url('https://fonts.googleapis.com/css?family=Open+Sans');
```



Custom Fonts

Demo

Deployment



Two Patterns

- ArcGIS Enterprise
- Developer edition > host on a web server

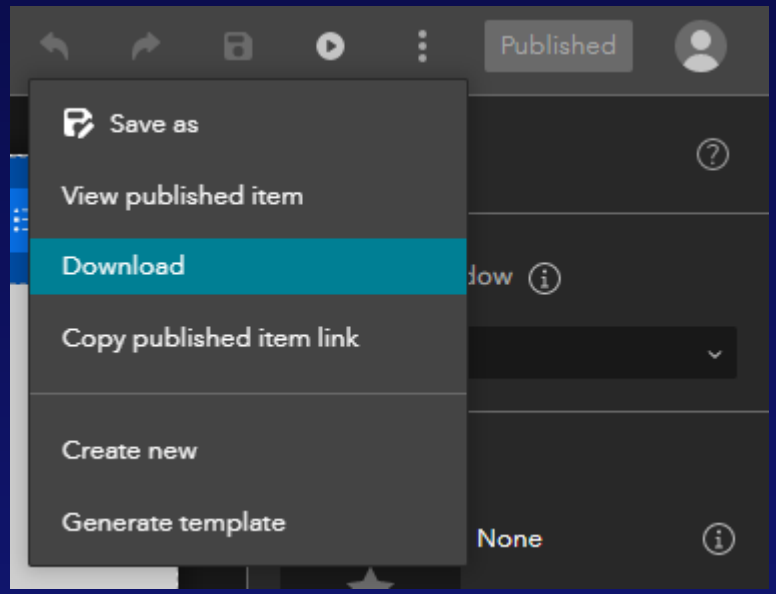
Deployment: ArcGIS Enterprise

- Deploy custom widgets to Experience Builder within ArcGIS Enterprise
- Users within ArcGIS Enterprise can build Experiences with those custom widgets
- ArcGIS Enterprise 11.0 or higher

Detailed instructions: esriurl.com/exb-widget-enterprise

Deployment: Developer Edition

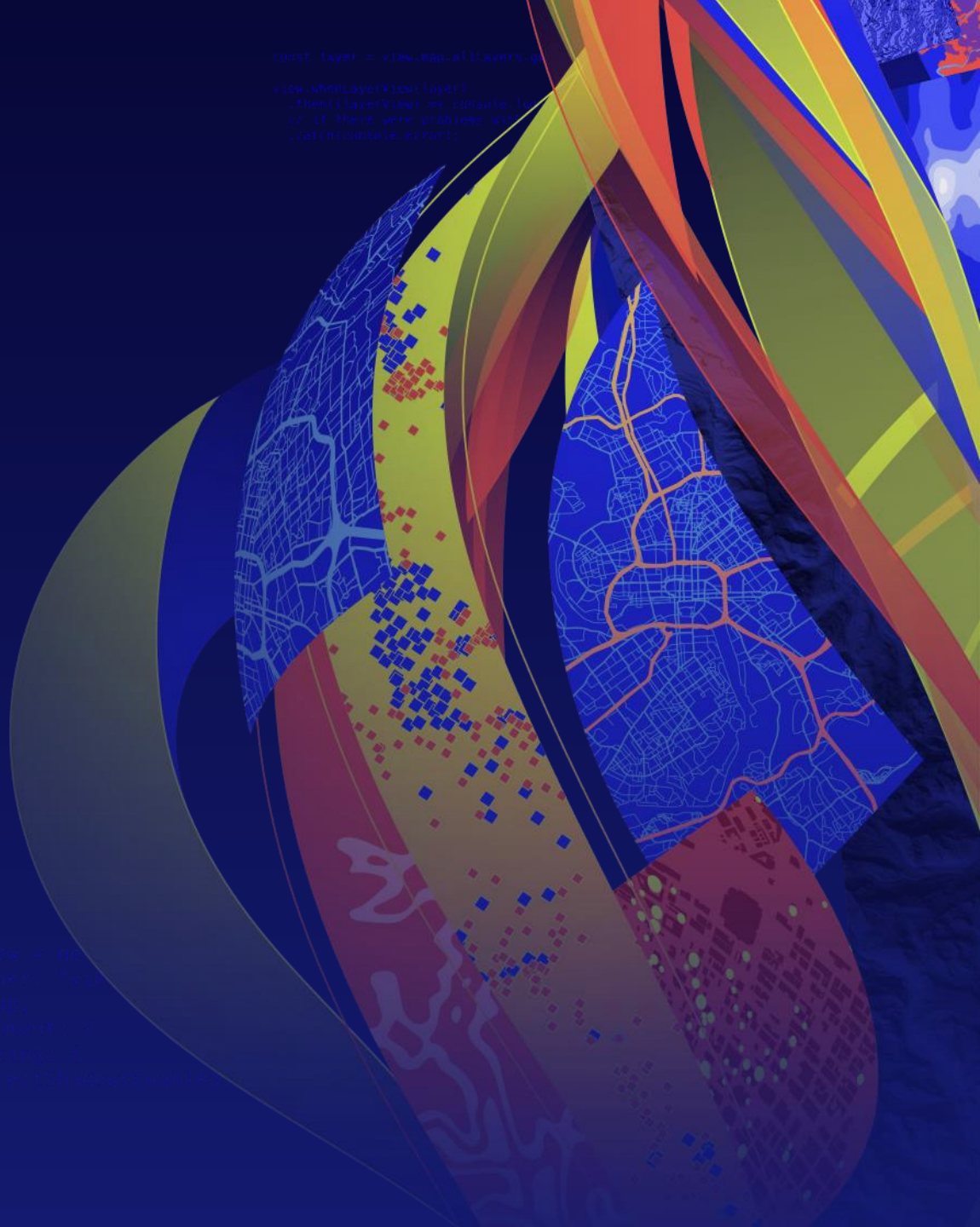
1. Build the Experience with your custom widgets
2. Download as ZIP



3. Unzip files
4. Add **`clientId`** to **`cdn/1/config.json`**
5. Host the files on a web server

Automated Deployment

CI/CD



Why automation?

- Faster builds
- Consistent builds
- Easier for testers
- The "reference" application

How to automate

- Store the reference version of each app
- Auto-build using your CI/CD env of choice:
  - Azure DevOps
  - GitHub Actions*
  - GitLab Actions
  - Jenkins
  - Etc.

Folder structure

- manifest.json
- apps/
  - 0/
  - 1/
  - 2/
  - …
- widgets/
  - custom-widget-1/
  - custom-widget-2/
  - …

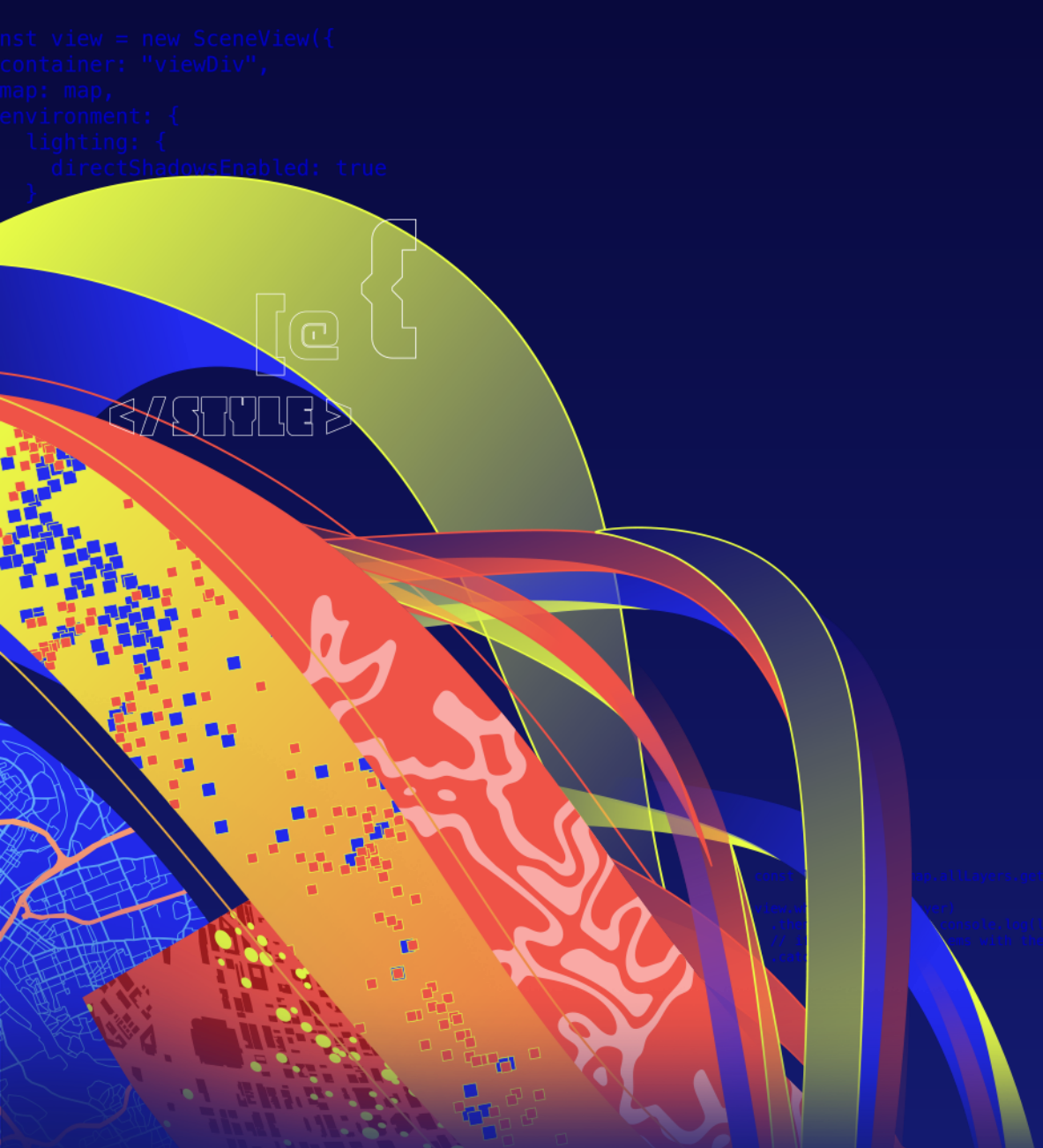
Automatic build

- Create file:

  `github/workflows/build-app.yml`

- Demo repo:

  github.com/gavinr/experience-builder-devops-example



Automatic Build

Demo

Automatic build outcomes

- Consistent outputs
- Easier version management (via Git branching)
- Quicker bug investigations (is it happening on the reference app?)
- More organized management of app config versions

Resources

- Code for this presentation: esriurl.com/exb-ce-ds2023
- Samples: github.com/Esri/arcgis-experience-builder-sdk-resources
- Documentation: developers.arcgis.com/experience-builder
  - Guide
  - Sample code
  - API reference
- Questions and feedback in the Esri Community: community.esri.com/t5/arcgis-experience-builder/ct-p/arcgis-experience-builder

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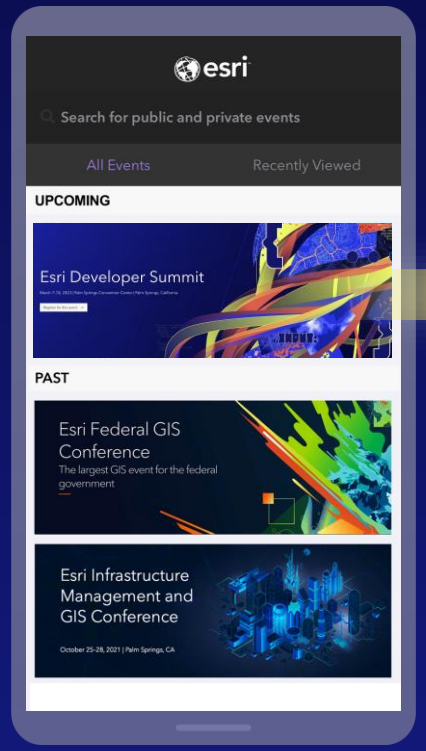
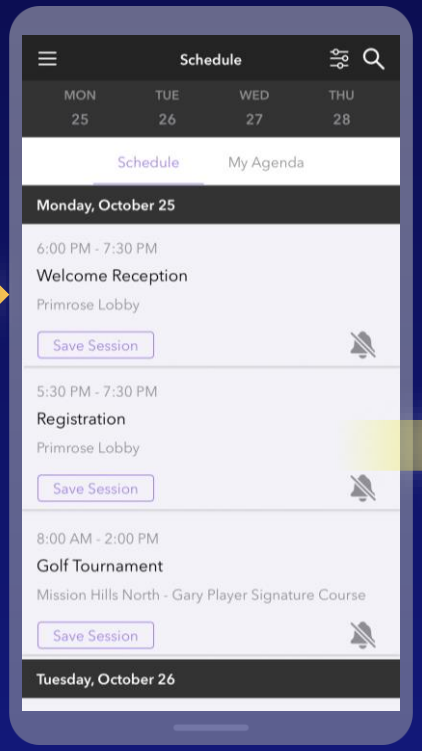
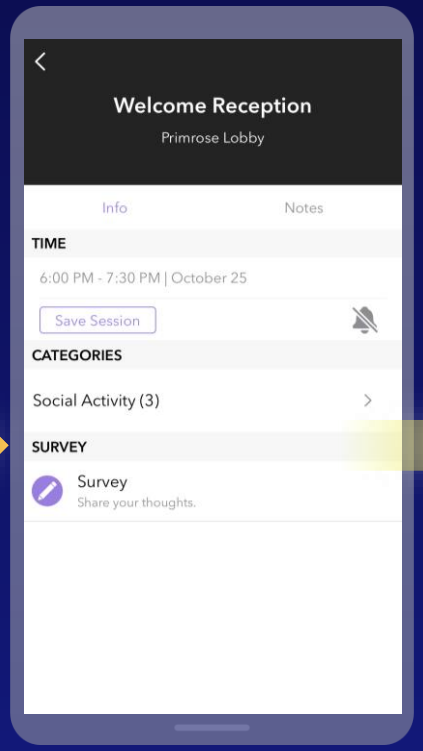
Download the Esri Events app and find your event



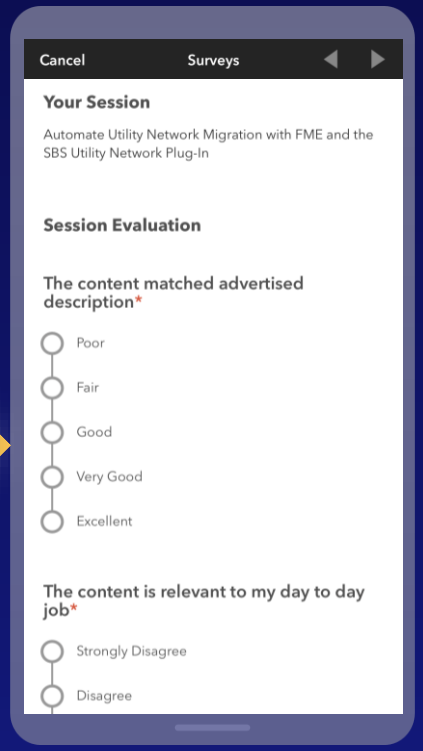
Select the session you attended



Scroll down to “Survey”



Log in to access the survey



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