

ANA362

Overview and Highlight of the Analytics Designer for SAP Analytics Cloud

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PUBLIC

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Agenda

Introduction to the analytics designer

Product highlights and live demos

Exercises

Q&A

Introduction to the analytics designer



SAP Analytics Cloud

Act with Confidence



**Business
Intelligence**



**Augmented
Analytics**



**Enterprise
Planning**

**Digital
Boardroom**

**Analytics
Hub**

**Analytics
Designer**

Mobile



On Premise



Hybrid



Cloud

The analytics designer completes SAP Analytics Cloud

One analytics platform

Develop analytic applications that bring together BI, planning, and predictive capabilities

Agile development

Start from existing content, templates,* or user stories and customize, integrate, and extend

Delighting your users

Guide the users and adjust the widgets behavior based on their expectations

Customize

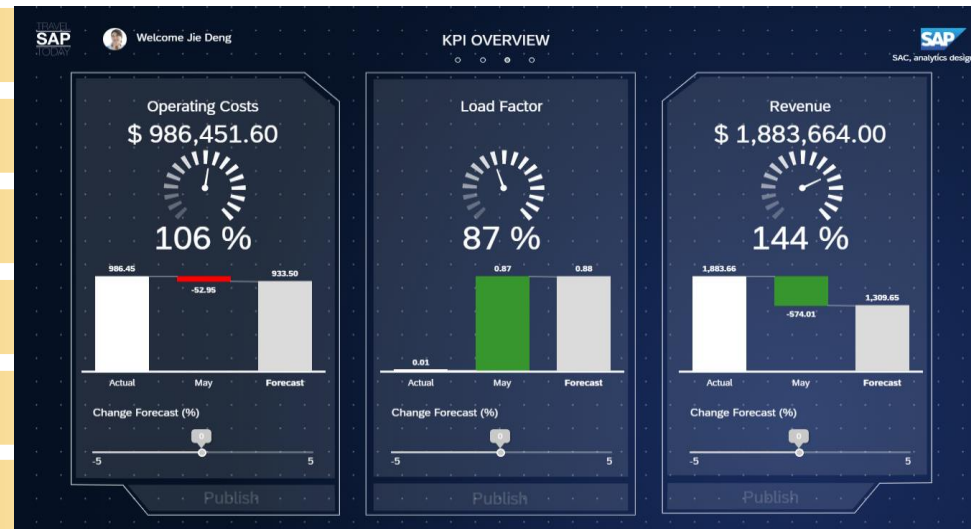
Integrate/Embed

Extend

Reuse

Content Network

Mobile Ready



Developer handbook: <https://www.sapanalytics.cloud/analytics-designer-handbook/>

API reference documentation: <https://help.sap.com/doc/958d4c11261f42e992e8d01a4c0dde25/latest/en-US/index.html>

* Planned for the future releases

Product highlights and live demos



Analytics designer Q3/2020 and Q4/2020 QRC highlights

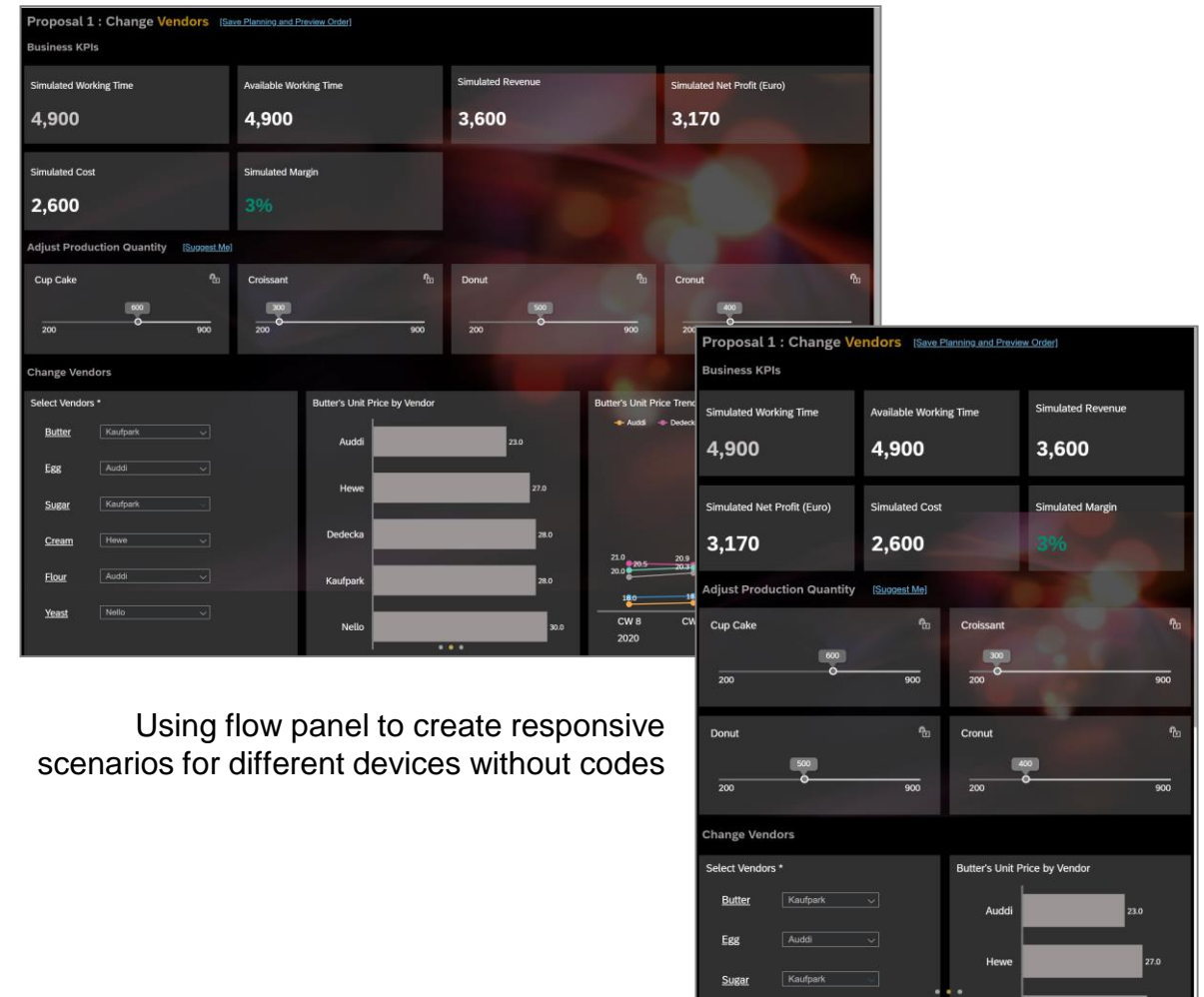
Dashboarding capabilities

- Integration of analytic applications within SAP Analytics Cloud mobile iOS app
- New widgets: List box, page book, value driver tree, toggle switch
- Navigation panel for table enabled to work with SAP Analytics Cloud model
- CSS-like theme
- Flow panel for responsive scenario without codes
- Filter line enhancements to support multiple widgets
- PDF enhancements to support full table export
- Data change insights (beta)

Enterprise capabilities

- Performance improvements: Loading invisible widgets in background, pause refresh script API, and widget initialization flag
- DataSource browser and set data model by script variable for table
- Integration with SAP Data Warehouse Cloud solution

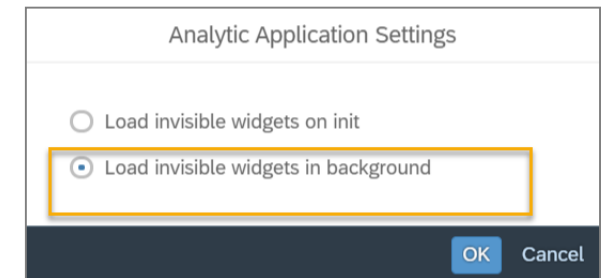
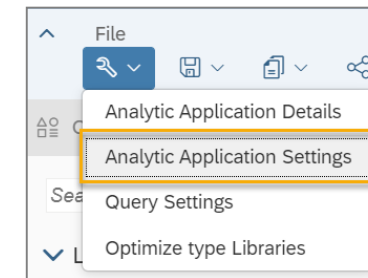
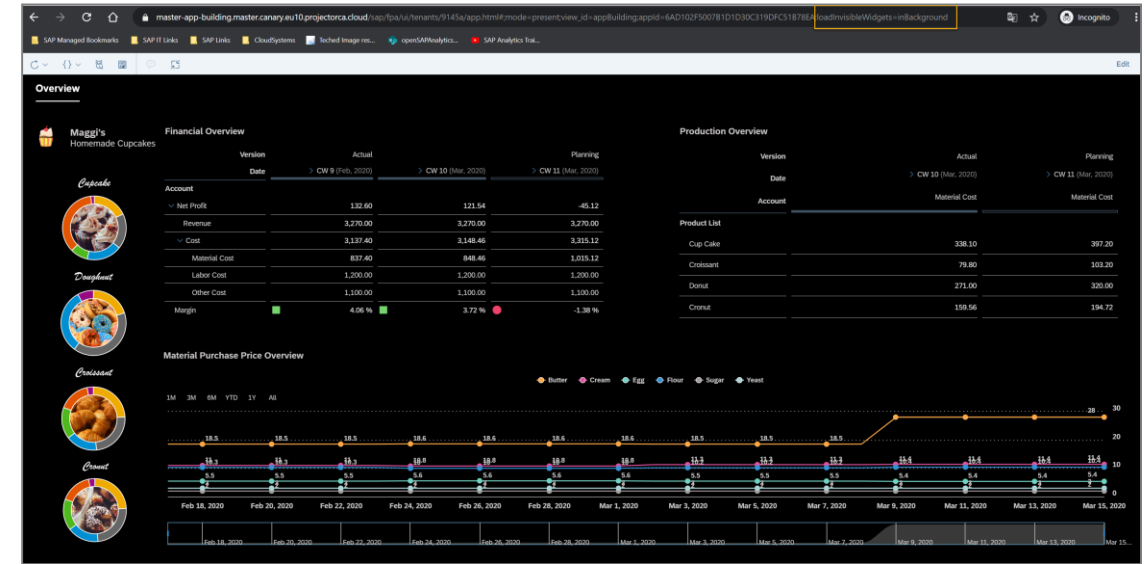
Scripting API enhancements



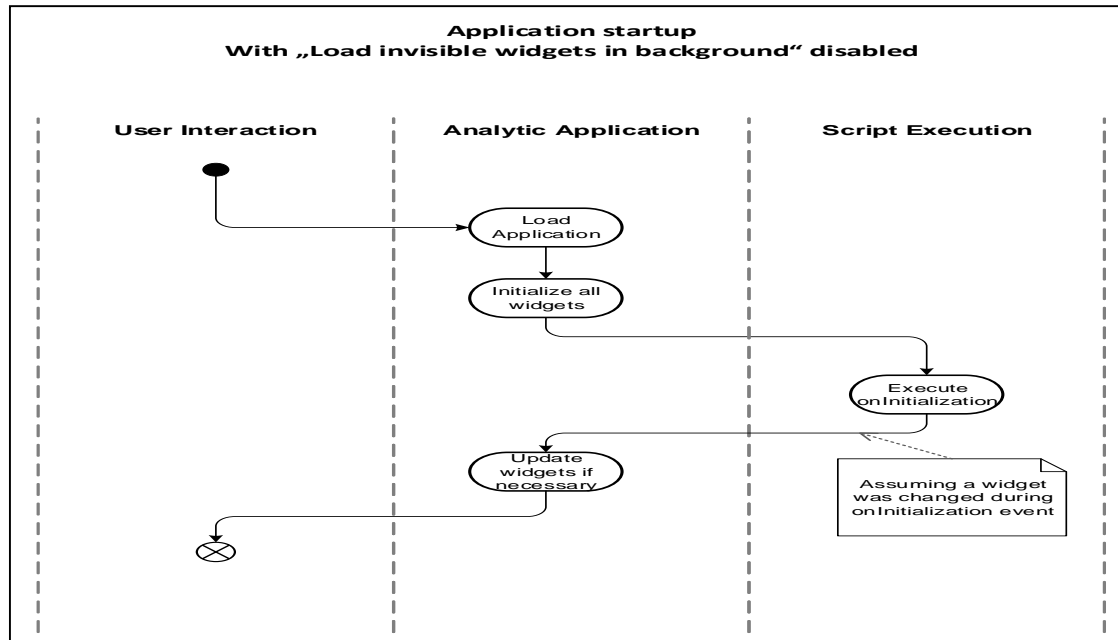
Using flow panel to create responsive scenarios for different devices without codes

Loading invisible widgets in background

- The analytics designer provides additional option that invisible widgets can be automatically loaded in background
 - Application are divided into different pages/tab strips.
 - The first page or tab strip of the application does not contain a lot of widgets
- All the metadata and result set of the widgets are loaded in the background if the option is set to loading in background
- Following components are automatically loaded in background if the option is set to the application:
 - Scripts that are related to initial invisible widgets
 - Widgets or containers that defined within the invisible containers
 - Invisible tab strips
- You can set application to be loaded in background using
 - Analytic application setting dialog
 - Application URL parameter:
loadInvisibleWidgets=inBackground

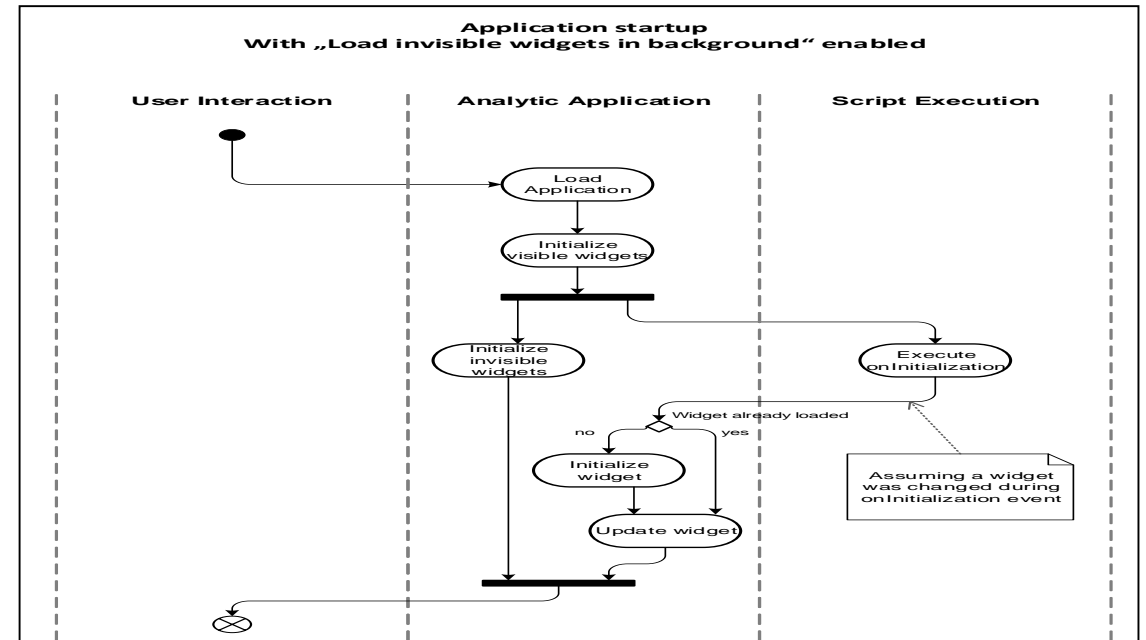


Loading widgets



Default mode

- Keep the scripts for onInitialization event as few as possible
- Don't access and prepare invisible widgets for onInitialization event if possible. Try to prepare the invisible widgets only if they turn visible.

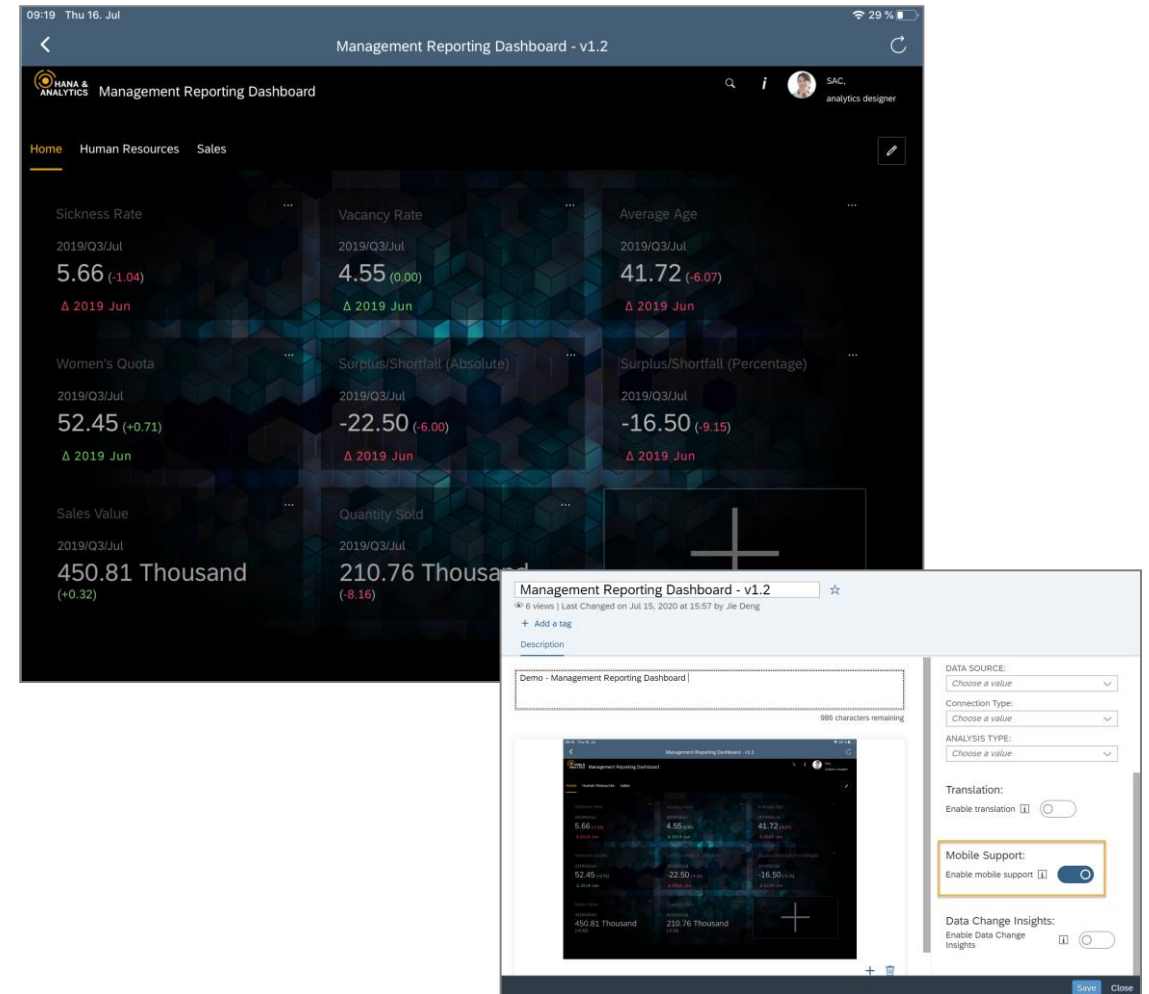


Loading invisible widgets in background

- In case you really need to access the invisible widgets during application onInitialization event, set the widgets to “Always initialize on startup”
- Don't nest the invisible widgets too deep into the container structure if you can't avoid accessing invisible widgets during application onInitialization event. It will wait until the container of the invisible widget is rendered completely.

Integration with SAP Analytics Cloud mobile iOS app

- Consuming analytic app within SAP Analytics Cloud mobile app (iOS mobile-optimized Web view)
- Mobile-specific widget
 - Pagebook
- Mobile setting in design time
 - Set application property to “Mobile Enabled”
 - Then application will be visible on mobile devices
 - Application designer/developer must ensure that the application is suitable for mobile consumption
- Following mobile specific gestures/events are provided with analytic applications running on native Safari browser on iPad:
 - Shake event
 - LongPress event for button, shape, and image widgets
 - onOrientationChange event



Navigation panel and data source browser

- The navigation panel for table now is delivered with the analytics designer. With the navigation panel, the user can perform the following actions at application runtime:
 - Add/remove dimensions/measures
 - Swap axis/arrange totals
 - Display dimensions in key/text representation
 - Select hierarchies/properties
 - Compact display/suppress zeros (for SAP Business Warehouse)
- The navigation panel can be opened or closed using the new API in analytics designer.
 - `openNavigationPanel()`
 - `closeNavigationPanel()`
 - Available items panel can be opened using the optional parameter

The screenshot displays the SAP Analytics Designer interface. The main area shows a table titled 'B4H_PM_SALES' with columns for 'Measures' and 'Dimensions'. The table is organized into a hierarchy with rows for 'Region (SAP NW Demo)', 'Product Category', and 'Mobile Devices'. The 'Measures' column includes 'Net Value stat curr', 'Open order quantity', and 'Open order stat curr'. The 'Dimensions' column includes 'Region (SAP NW Demo)', 'Product Category', 'Mobile Devices', 'Monitors', and 'Notebooks'. The table is filtered by 'EMEA' and 'America'.

On the right side, the 'Builder' panel is visible, showing the 'Data Source' as 'B4H_PM_SALES'. The 'Rows' section lists 'Region (SAP NW Demo)' and 'Product Category'. The 'Columns' section lists 'Measures' (3 Members) and includes 'Net Value stat curr', 'Open order quantity', and 'Open order stat curr'. The 'Available Items' panel on the far right lists various dimensions and measures available for selection.

Measures	Net Value stat curr	Open order quantity	Open order stat curr
Region (SAP NW Demo)			
Product Category			
Mobile Devices	EUR1 869 361 405,00	2 640 PC	EUR110 885 062,00
Monitors	EUR2 558 679 148,00	2 640 PC	EUR117 270 346,00
Notebooks	EUR3 509 101 463,00	2 640 PC	EUR110 123 242,00
> EMEA	Totals	EUR7 937 142 016,00	7 920 PC
Mobile Devices	EUR1 546 654 385,00	2 112 PC	EUR90 669 116,00
Monitors	EUR1 945 962 792,00	2 112 PC	EUR89 383 220,00
Notebooks	EUR2 854 652 102,00	2 112 PC	EUR89 394 836,00
> America	Totals	EUR6 347 269 279,00	6 336 PC
Mobile Devices	EUR3 416 015 790,00	4 752 PC	EUR201 554 178,00
Monitors	EUR4 504 641 940,00	4 752 PC	EUR206 653 566,00
Notebooks	EUR6 363 753 565,00	4 752 PC	EUR199 518 078,00
^ Worldwide	Totals	EUR14 284 411 295,00	14 256 PC

Simple widgets property binding

- Application designers can now bind a simple widget's data source to a primitive-type script variable, tile filter or variable, model variable, and so on, so that the values of the widget can be updated dynamically.
- The supported simple widgets include: Checkbox group, radio button group, dropdown, list box, input field, text area, slider, range slider, and image.
- The selected/updated value at runtime can be written back to a specific script variable as well (excluding image).
- Thus the application designer can build the interactions between different widgets in a very convenient way.

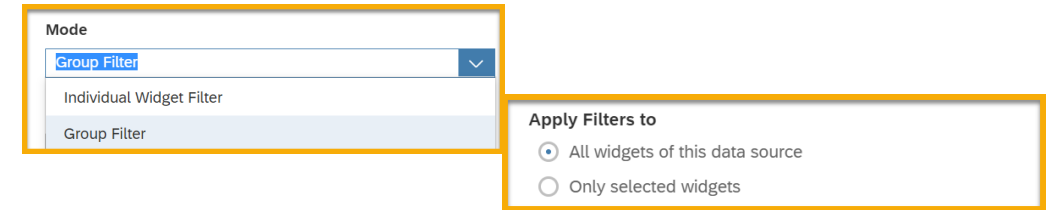
The screenshot shows the 'Builder' tool interface for a 'Slider' widget. The 'Value of Slider' section is expanded, showing 'Data Source Type' set to 'Tile Variables', 'Min Value' set to 0, 'Maximum Value' set to 200, and 'Current Value' set to 'variable_1'. The 'Slider Properties' section is also expanded, showing four unchecked checkboxes: 'Display Min & Max Value Labels', 'Display Current Value Label', 'Enable Value Input', and 'Enable Step Selection'. At the bottom, there is a toggle for 'Enable the write-back in runtime.' which is turned 'ON', and a dropdown for 'Write current value back to the variable' set to 'SV_Number'.

The screenshot shows the 'Builder' tool interface for a 'Checkbox Group' widget. The 'Checkbox Group Value' section is expanded, showing 'Data Source Type' set to 'Script Variables', 'Binding ID with the variable' set to 'SV_String_Array_Input', and 'Binding Display Text with the variable' set to 'Please select'. The 'Checkbox Group Properties' section is also expanded, showing a toggle for 'Enable the write-back in runtime.' which is turned 'ON', and a dropdown for 'Write the runtime selection back to the variable section' set to 'SV_String_Array_Output'.

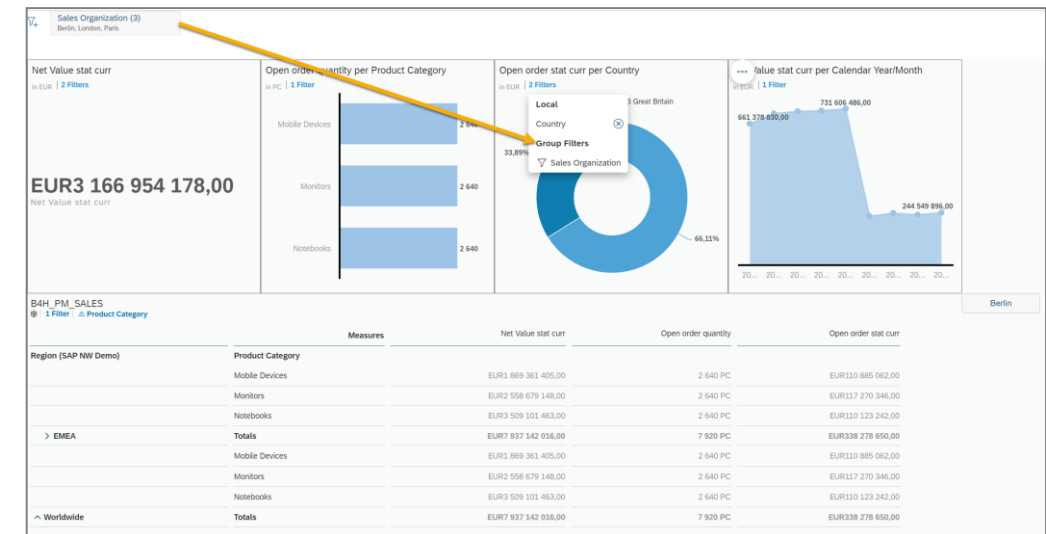
The screenshot shows the 'Builder' tool interface for an 'Image' widget. The 'Image Source' section is expanded, showing 'Binding the image source with dynamic variables' with 'Dynamic Variable' selected. Below, 'Binding the image source's URL with variable' is set to 'SV_String_URL'.

Filterline working with multiple widgets

- Filterline can now support 2 modes:
 - Individual widget filter → existing behavior: local filter
 - Group filter /multiple widgets → new enhanced behavior: external filter
- Configuration using builder panel
- In case there are overlaps or conflicts between local filter and group filter, the joined filter (filter operation “and”) will take effect for charts or tables.



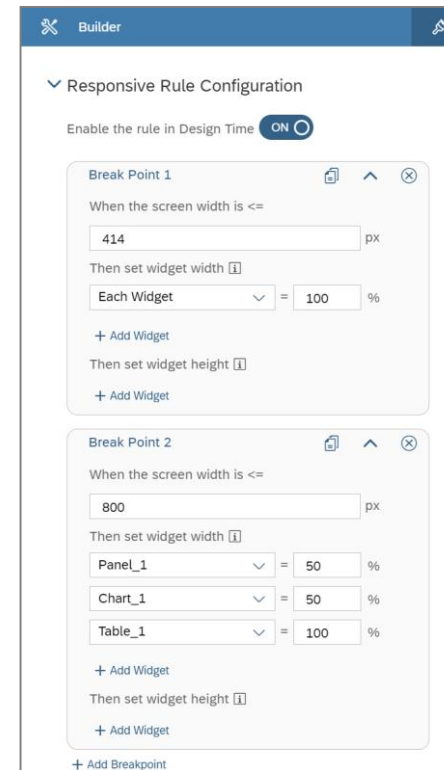
Application design time settings



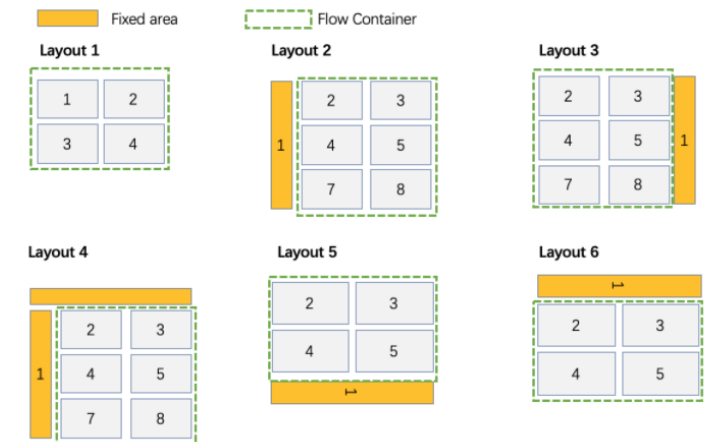
Application runtime

Flow panel for responsive layout

- Flow panel is a container widget for building responsive layout without any codes
 - Able to flow widgets within flow panel to proper position
 - Support for mixed usage of flow panel and existing canvas layout panel
 - Coding-free using new break point concept
 - Design time preview



Break points definition

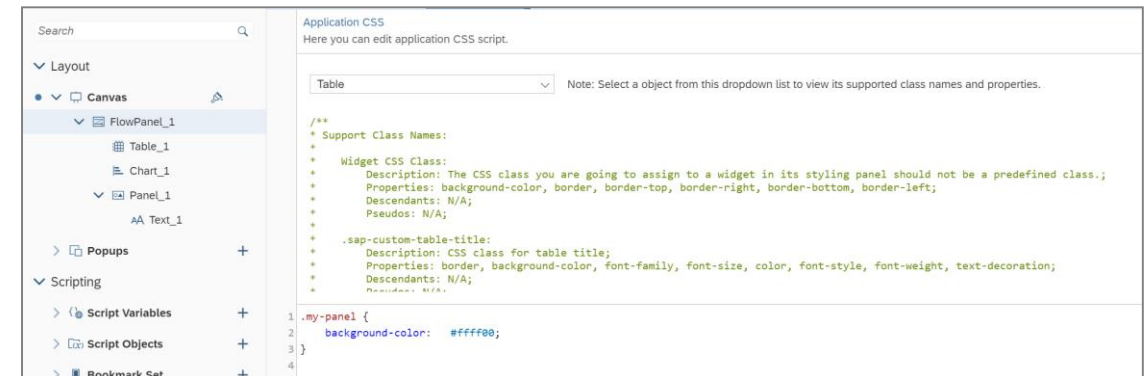
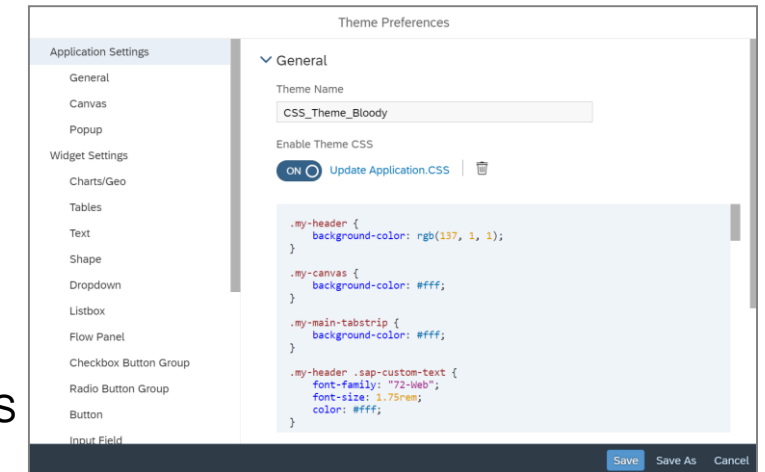


Flow panel combined with fixed area

CSS-like theme

- Providing additional CSS capabilities to customize the application look and feel
 - Theme-level CSS
 - Stored in file repository and can be applied to multiple applications
 - Application-level CSS
 - Stored within analytic applications
 - Widget-level CSS class
 - CSS class defined within theme-level CSS or application-level CSS can be assigned to individual widgets
 - Application-level CSS can be saved as theme-level CSS
 - Widget CSS class can be dynamically changed at application runtime using script API
- Priorities to influence the style of applications (from low to high):
 - Application theme
 - Widget styling properties
 - Theme CSS and application CSS

Theme-level CSS



Application-level CSS

Pause refresh script API

- Typical use cases
 - Pause the initial refresh of applications until they are modified during application onInit event to optimize the application startup performance
 - Pause the refresh of chart and table after each click of user action. User can take a couple of actions and then refresh the table/chart all at once.
- Pause refresh of chart or table can be configured in builder panel
- Set “Pause refresh” on or off using script API

▼ Properties

View Mode

☐ Enable Explorer

[Configure Measures & Dimensions](#)

☒ Pause Data Refresh ⓘ

☒ Disable Interaction

Script API

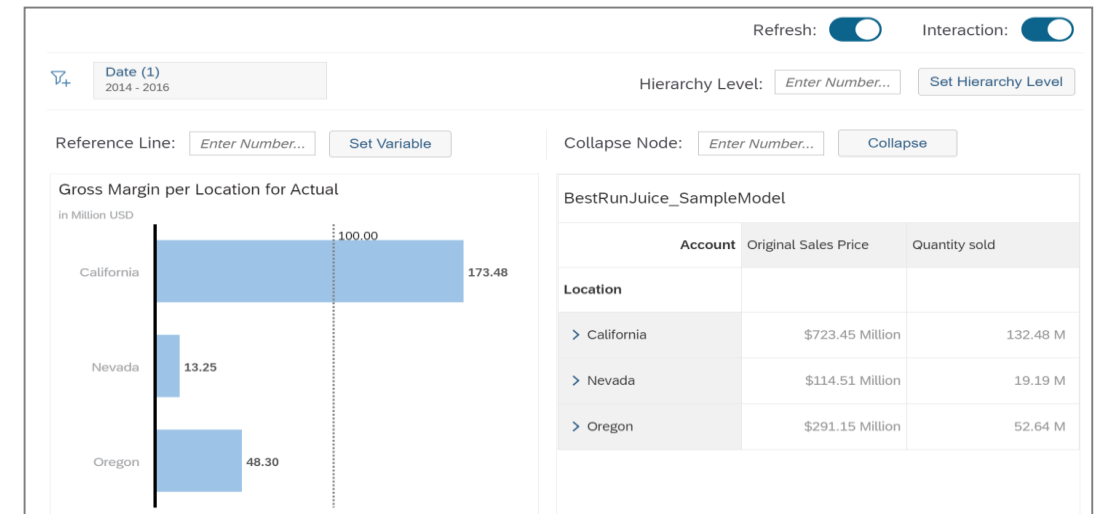
```
Table.getDataSource().setRefreshPaused(paused:Boolean);
Table.getDataSource().isRefreshPaused(): Boolean;

Chart.getDataSource().setRefreshPaused(paused:Boolean);
Chart.getDataSource().isRefreshPaused(): Boolean;

Table.setEnabled(enabled: Boolean);
Table.isEnabled(): Boolean

Chart.setEnabled(enabled: Boolean);
Chart.isEnabled(): Boolean
```

Hint: double-click to select code



Exercises



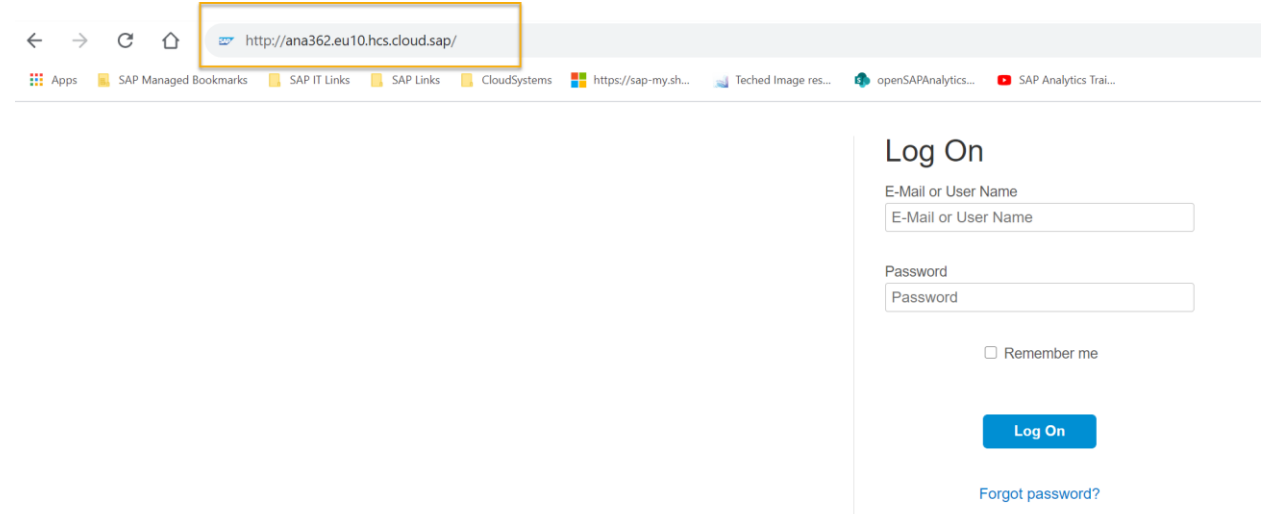
Exercises Technical Information

SAP Analytics Cloud:

<http://ana362.eu10.hcs.cloud.sap/>

User: XXXXX

Password: XXXXX



The screenshot shows a web browser window with the address bar containing the URL <http://ana362.eu10.hcs.cloud.sap/>. The browser's bookmark bar is visible with several links. The main content area displays a 'Log On' form with the following elements:

- Log On** header
- E-Mail or User Name** label above a text input field.
- Password** label above a text input field.
- ☐ Remember me checkbox.
- Log On** button.
- [Forgot password?](#) link.

SAP HANA Cloud Services

Exercises Overview:

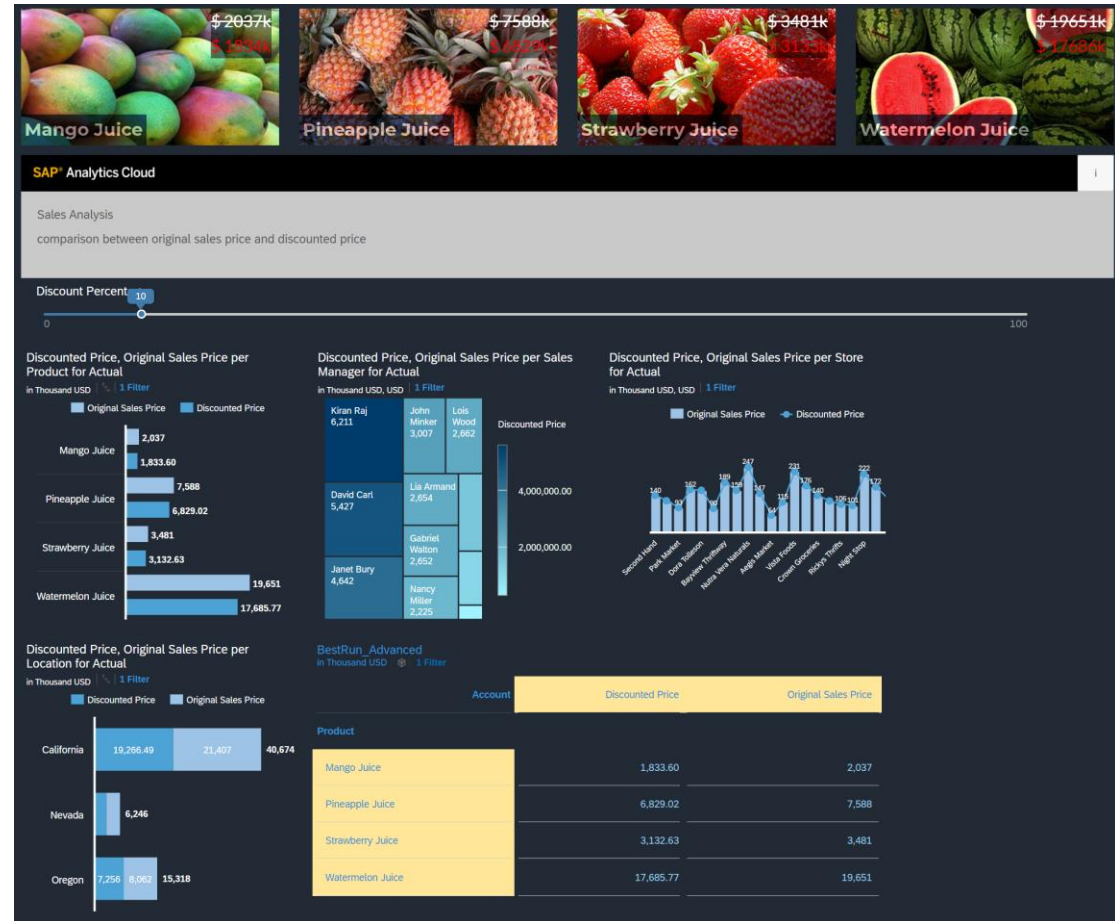
- Exercise 1: With this exercise you are going to create a simple responsive analytical application and embed it into a HTML page and run it with your iPad or iPhone. (Estimated Duration: 90 minutes)
- Exercise 2: With this exercise you will be able to explore and use the Generic Template. With this template you will have the possibility to select and modify your Data Set using the available functionalities.. (Estimated Duration: 45 minutes)
- Exercise 3: Here you are going to create a simple feedback form to ask user to enter the rating of a web page and then calculate the average score of this web page. You are going to leverage the responsive capability of analytics designer and integration with SAC planning capability to implement this scenario. (Estimated Duration: 45 minutes)

You are not required to do all exercises. Exercises are independent, you can choose the exercises to work on based on your interest and knowledge!

Exercise 1: Creating a responsive analytical application and embed this application into a HTML page

Exercise Content

- Application header is already pre-configured for you
- HTML page is already prepared for you
- Add flow panel, charts, table, slider, click event to canvas, configure above objects
- Define Global Script Variable
- Use Global Script Variable for calculated measures
- Set the application to mobile enabled
- Create a theme ANA362_XXBLACKTHEME, Assign application to theme
- Download SAC iOS Mobile APP and run the application
- Embedding: Add windows post message and post message received, adjust html, and run the application within HTML5



Exercise 2: Exploring and Customizing the Generic Analysis Application

Exercise Content

- Explorer Generic Analysis Application delivered as sample content
- Assign model to table and run the application
- Set the Data Model via URL Parameter when you run the application
- Use the SelectDataModelDialog to select a Model at start time

The screenshot displays the SAP Generic Analysis Application interface. The main area shows a data table for 'BestRun_Advanced' with columns for Location, Product, Account, Discount % Dev, Discount Plan, Gross Margin, Gross Margin Plan, Quantity sold, and Quantity sold Plan. The table is filtered for 'California' and shows data for various products like Coca-Cola, Orange with pulp, and Lemonade. On the right, there are two panels: 'Available Items' and 'Builder'. The 'Available Items' panel lists various accounts and dimensions with checkboxes for selection. The 'Builder' panel shows the configuration for the data source 'BestRun_Advanced', including rows and columns.

Location	Product	Account	Discount % Dev	Discount Plan	Gross Margin	Gross Margin Plan	Quantity sold	Quantity sold Plan
California	Coca-Cola		15.42 %	775	1,742	2,335	1,681	1,769
	Orange with pulp		-2.56 %	115,943	83,238	82,574	42,479	43,276
	Orange no pulp		21.22 %	488	476	465	578	691
	Lemonade		-7.02 %	1,988	5,533	5,506	5,985	6,636
	Apple Cider		-5.37 %	7,337	5,266	5,229	2,354	2,586
	Mango Juice		-22.21 %	156	360	249	418	451
	Pineapple Juice		33.23 %	348	1,454	1,537	1,786	1,525
	Watermelon Juice		8.60 %	3,412	2,474	2,542	3,565	3,804
	Pomegranate		-6.30 %	3,132	2,828	2,257	3,438	2,989
	Strawberry Juice		3.95 %	132	561	758	736	815
	Coconut Water		-3.63 %	191	107	100	160	158
	Pepsi		-1.86 %	2,797	3,875	2,178	4,169	4,775
	Soda		-32.77 %	321	146	138	323	125
	Dark Beer		-21.03 %	25,740	12,266	10,155	21,167	21,841
	Lager		-5.87 %	2,704	2,329	2,014	2,730	3,192
	IPA		82.34 %	290	2,648	2,624	3,709	3,600
	Amber		121.79 %	1,276	2,239	2,326	2,840	2,899
	Low Calorie Beer		-2.23 %	297	1,387	1,195	1,077	1,171

Exercise 3: Creating a simple feedback form by leveraging SAC planning capabilities

Exercise Content

- Build a responsive application
- Add the script APIs to implement the logic of calculation of average score of this web page
 - Use create member API to create the master data (name, email etc.) in the planning table
 - Use setUserInput API to enter the key figure score into the planning table
 - Use script API to calculate the average score based on the count of master data and score

The screenshot displays the SAP Analytics Cloud interface for a planning application titled 'Sales Planning by Using Form' with ID 'AIN369_EXE3'. The interface includes buttons for 'Open Planning Form', 'Revert', and 'Publish'. Below these is a table labeled 'Planning_DataSet in Million'.

		Actual > Q1 (2020)	Forecast * > Q1 (2020)
	Revenue	405.00	21,602.26
Juice	Quantity	14,783.45	14,371.78
	Revenue		54,458.51
Water	Quantity		21,368.47
	Revenue		11,665.11
Cola	Quantity		17,469.68
	Revenue		23,426.29
Ice Tea	Quantity		35,396.75

Overlaid on the table is the 'Planning Formular' dialog box. It contains the following fields and controls:

- Product Category:** A dropdown menu with 'Juice' selected.
- Measure:** A dropdown menu with 'Revenue' selected.
- Plan in %:** A slider ranging from -50 to 50, with a current value of 20.
- Current Value:** 21,602.26
- Plan Value:** 25,922.72
- Buttons:** 'OK' and 'Cancel' at the bottom right.

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