



A Deep Dive into Template Components

APEX World 2024

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Topics



- Introduction
- Getting Started
- Develop a new Template Component
- Internal Insights
- Futures

Introduction



A **Template Component** is a **Plug-in**, which contains a **Template**, for declarative use in **Page Designer**.

- Introduced in APEX 23.1
- Key component for UX / UI updates
- Many enhancements coming in future releases

Two places in Shared Components

As **standalone** Plug-ins

Application 103 \ Shared Components \ Plug-ins

Plug-insUtilizationHistory

Q Go Actions

Name	Type	Updated
Button	Template Component	55 minutes ago
Quote	Template Component	13 minutes ago
Self Referencing	Template Component	115 minutes ago
Unlimited Attributes	Template Component	117 minutes ago

As part of a **theme**

Application 103 \ Shared Components \ Templates

TemplatesSubscriptionPublishUtilizationHistory

Q Go Actions

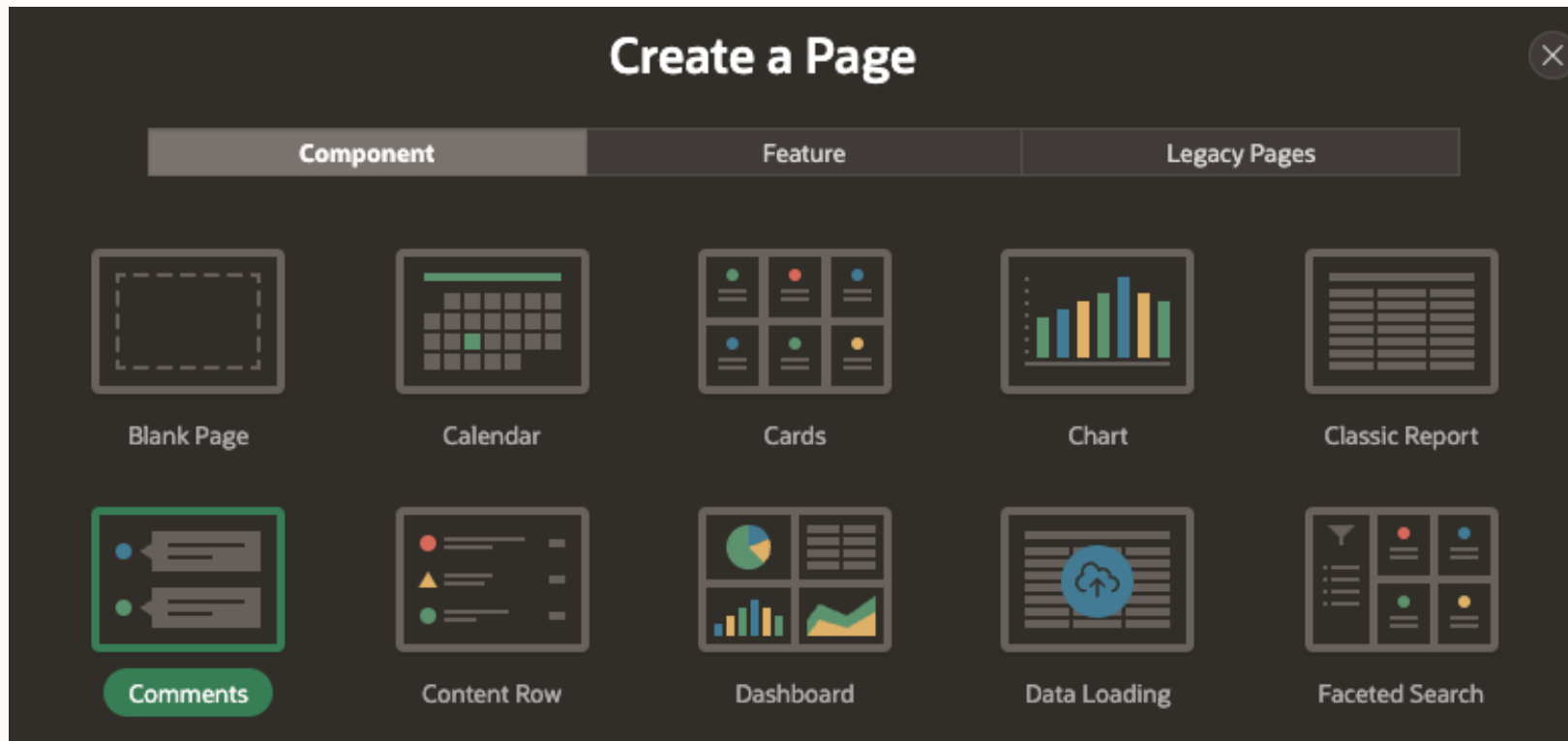
Type = 'Template Component'

Type	Name
Template Component	Avatar [Plug-in]
Template Component	Badge [Plug-in]



How to get started?

Use the page wizard and choose **Comments**, **Content Row**, **Media List**, or **Timeline**.



Or use Plug-ins from apex.world!

Congratulations to the winners of the challenge!



TEMPLATE COMPONENT PLUGIN CHALLENGE

Examples

Small

Medium

Large

test

Q

Go

Actions

	Reservation Number	Vin	Car Model	Car Year	Delivery Estimate Date
<input checked="" type="checkbox"/>	325,252,456				
<input checked="" type="checkbox"/>	1,234	1234	Model 3	Year 2021	6/30/2021

1 - 2

top

> irrs.PKs

< ▶ (2) ['42', '1']

>

01-AUG-2023
9:00 AM
Order Received

02-AUG-2023
10:00 AM
Order is being processed
warehouse

02-AUG-2023
1:00 PM
Your order is shipped

03-AUG-2023
2:00 PM
Your order has arrived in Leeds -
UK

03-AUG-2023
03:00 PM
Your order has been pickup by
the driver

03-AUG-2023
06:00 PM
The order has been delivered

Cancel Order

Edit Items

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Demo in Universal Theme

Using Project Sample Dataset



Building a Template Component from scratch

A simple Template Component to style Famous Quotes

“Mickey Mouse Is, To Me, A Symbol Of
Independence. He Was A Means To An End.”

Walt Disney

The Basics First



Plug-in:

Cancel


Create Plug-in


Plug-ins

A plug-in is an extension to the built-in types of Oracle APEX. Use plug-ins for declarative use of new item, region, process and dynamic action types in your application.


Show All Name Templates Information Help Text Comments


Name

* Name 

* Internal Name 


* Type


Template Component 






Quick Pick ☐ 

Templates

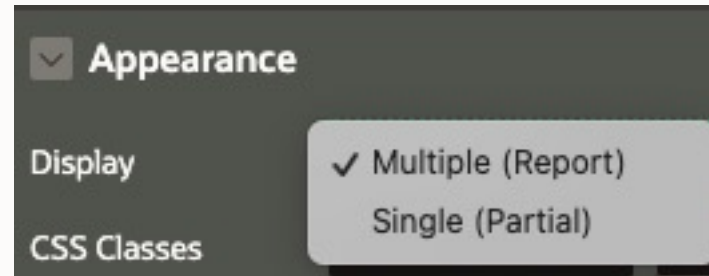
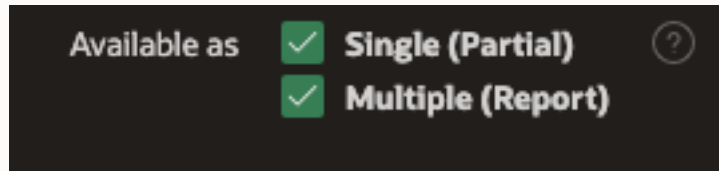
Available as ☐ Single (Partial)  ☐ Multiple (Report)

* Partial 

1

Partial or Multiple?



Single

Region with one row or Interactive Report Column

Multiple

Region with multiple rows, requires extra templates for Body and Row

No selection

Internal Template Components, only referenced by others using {with/} & {apply/}



About the Partial

- Is **required**
- Only here you can use **Custom Placeholders**
- Use the **Synchronize from Template** Button to create the **Custom Attributes**
- A Template Component has **Unlimited Amount** of Custom Attributes

* Partial ?

↶

↷

🔍

1

<blockquote>#QUOTE#

2

<footer>--{if LINK/}<a href="#LINK#" #LINK_ATTR#{endif/}#AUTHOR#{if LINK/}{endif/}</footer>

3

</blockquote>

4

Custom Attributes							Synchronize from Templates		Add Attribute
Label	Static Identifier	Scope	Attribute Group	Sequence	Attribute	Type	Required	Default Value	Depending on
Author	AUTHOR	Component		10	1	Session State Value	No		
Quote	QUOTE	Component		20	2	Session State Value	No		



About Actions

- An Action is a **Link**, a **Menu**, or a **Button**
- The **Position** defines the **placeholder name** of the action in the template
- The Action **Template** defines the **markup** for Menus and Buttons
- A Menu can have **Entries**, **Separators**, and **Sub-Menus**



The screenshot displays a list of three tasks, each with a status indicator, a title, a project name, and a set of action buttons. The first task, 'HR Support Systems', is marked as 'Closed' with a green checkmark icon. The second task, 'Investigate new Virus Protection software', is marked as 'Open' with a yellow warning icon. The third task, 'Customize solutions', is also marked as 'Open' with a yellow warning icon. A context menu is open for the second task, showing options to 'Create', 'Duplicate', and 'Delete'.

Task	Status	Project	Actions
HR Support Systems	Closed	Maintain Support Systems	Edit, More
Investigate new Virus Protection software	Open	Maintain Support Systems	Edit, More (Menu: Create, Duplicate, Delete)
Customize solutions	Open	Load Software	Edit, More



Let's start building!



Some internal insights..

Compiling & Applying Template Components

Template

```
<div class="article">  
{if F00/}#BAR#{endif/}  
</div>
```

Syntax Analysis

```
<div class="article">
```

```
{if F00/}#BAR#{endif/}
```

```
</div>
```

Text

Syntax Analysis

```
<div class="article">
```

```
{if F00/}#BAR#{endif/}
```

```
</div>
```

Directive

Syntax Analysis

```
<div class="article">  
{if F00/}#BAR#{endif/}  
</div>
```

Substitution

Lexical Analysis



Token Value	Token Type
<div class="article">	Text
{if F00/}	Directive
#BAR#	Placeholder
{endif/}	Directive
</div>	Text

Code Blocks / Syntax Analysis

Block	Statement	Code	Value
1	1	PRINT	<div class="article">
1	2	GOTO	Block 2
1	3	PRINT	</div>
2	1	IF	F00 is not null
2	2	GOTO	Block 3
2	3	ENDIF	
3	1	SUBSTITUTE	BAR



Code Blocks

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Stored in APEX Metadata as JSON

Block	Statement	Code
1	1	PRINT
1	2	GOTO
1	3	PRINT
2	1	IF
2	2	GOTO
2	3	ENDIF
3	1	SUBSTITUTE



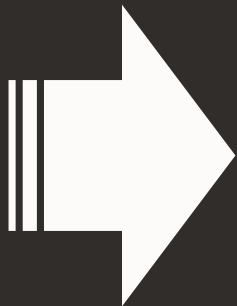
{ : }

JSON



Loaded in memory as blocks during executing

{ ; }
JSON



Block	Statement	Code
1	1	PRINT
1	2	GOTO
1	3	PRINT
2	1	IF
2	2	GOTO
2	3	ENDIF
3	1	SUBSTITUTE



Performance

Compile once, apply many times.



What to expect next

Future

- **Client-side** integration
- **Easier nesting** of Template Components
- **Syntax Highlighting** for Template Directives
- Support for **Row Selection**
- **More** Template Components



Additional Resources

- [Using Template Directives](#)
- [About Template Component Type Plug-ins](#)
- [Template Component Challenge](#)
- [apex.world](#)
- [First Template Component Blogpost](#) (Timo)
- [Prototype to Template Component](#) (Plamen)
- [Color Contrasts](#) (Matt)
- [Template Component Reference](#) (Matt)
- And many, many more...



Thank you



ORACLE

Our mission is to help people see
data in new ways, discover insights,
unlock endless possibilities.

