

Dimitri Gielis

A Primer on Web Components in APEX



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Dimitri Gielis

- ❖ Founder & CEO of APEX R&D
- ❖ 17+ years of Oracle Experience (OCP & APEX Certified)
- ❖ Oracle ACE Director
- ❖ “APEX Developer of the year 2009” by Oracle Magazine
- ❖ Presenter at Oracle Conferences (OOW, ODTUG, OGh, UKOUG, ...)



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Dimitri Gielis Blog (Oracle Application Express - APEX)
I created this Blog to share my knowledge especially in Oracle Application Express (APEX) and my feelings ...

FRIDAY, SEPTEMBER 26, 2014

APEX 4.2.6 patch available

Oracle released [APEX 4.2.6](#) yesterday, it's also available from My Oracle Support as a patch set 19595896.

Here's the table of bug fixes.

Table 6 Bugs Fixed in the Oracle Application Express 4.2.6.00.03 Patch Set

Bug Number	Description
18393429	Importing pre-4.2 application with data loading results in runtime error
18609856	APEX_WEB_SERVICE.CLOBBASE642BLOB converts incorrectly
18658967	Corrupted HTML mail messages are created from APEX_MAIL.SEND
18719750	ORA-01858 during application import
18733989	Errors picking up session with cookie when TOP CALL is not F, SHOW, or ACCEPT
19021052	Oracle Application Express 4.2.4 throwing error while generating check boxes
19313700	Check box fails with ORA-06502 after upgrade from release 4.0 to 4.2.4
19482775	ORA-06502 when importing application containing translations

Applying the patch took less than 7 minutes.

```
Session altered.
...Validating Application Express
...Database user "SYS", database schema "APEX_040200", user# "106" 20:48:40
...Compiled 0 out of 3014 objects considered, 0 failed compilation 20:48:40
...271 packages
...263 package bodies
...452 tables
...11 functions
...16 procedures
...3 sequences
...457 triggers
...1320 indexes
...211 views
...0 libraries
...6 types
...0 type bodies
...0 operators
...0 index types
```

My next public appearances:

- [Oracle Open World: 27-SEP/2-OCT-2014](#)
- [ORCLAPEX-BE Meetup: 19-NOV-2014](#)
- [ODTUG KScope: 21/25-JUN-2015](#)

About Me

[Dimitri Gielis](#)

Passionate about Oracle and especially Oracle Application Express (APEX). Building applications with love @ APEX R&D.

[View my complete profile](#)

 **ORACLE**
ACE Director

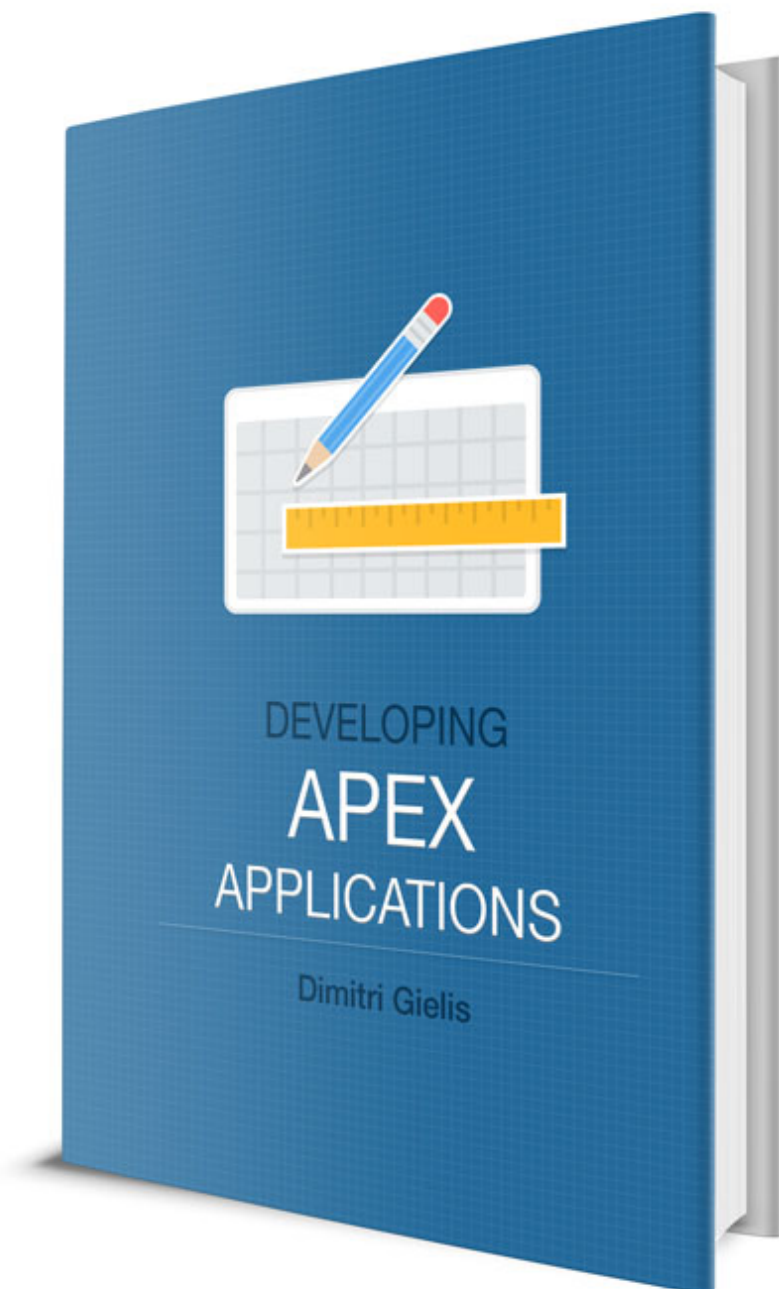
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Twitter

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A blue cartoon bird, resembling a Twitter bird, standing on a reflective surface. The bird is facing right, with its wings slightly spread and its beak open as if it's chirping. It has a yellow beak and yellow feet. The bird is standing on a light blue, reflective surface that shows a faint reflection of the bird below it.



Demo



Adding a slider

(normal way)

```
<div id="slider">
  <input checked="" type="radio" name="slider" id="slide1" selected="false">
  <input type="radio" name="slider" id="slide2" selected="false">
  <input type="radio" name="slider" id="slide3" selected="false">
  <input type="radio" name="slider" id="slide4" selected="false">
  <div id="slides">
    <div id="overflow">
      <div class="inner">
        
        
        
        
      </div>
    </div>
  </div>
  <label for="slide1"></label>
  <label for="slide2"></label>
  <label for="slide3"></label>
  <label for="slide4"></label>
</div>
```

```
* {  
  -webkit-box-sizing: border-box;  
  -moz-box-sizing: border-box;  
  -ms-box-sizing: border-box;  
  box-sizing: border-box;  
}
```

```
#slider {  
  max-width: 600px;  
  text-align: center;  
  margin: 0 auto;  
}
```

```
#overflow {  
  width: 100%;  
  overflow: hidden;  
}
```

```
#slides .inner {  
  width: 400%;  
}
```



Adding a slider

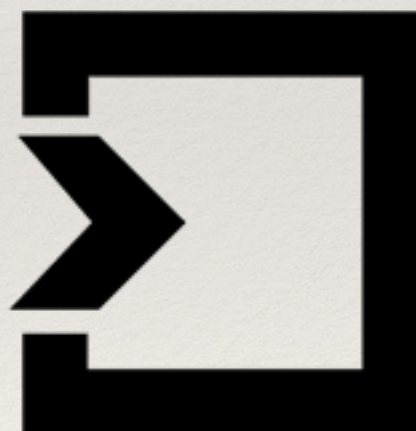
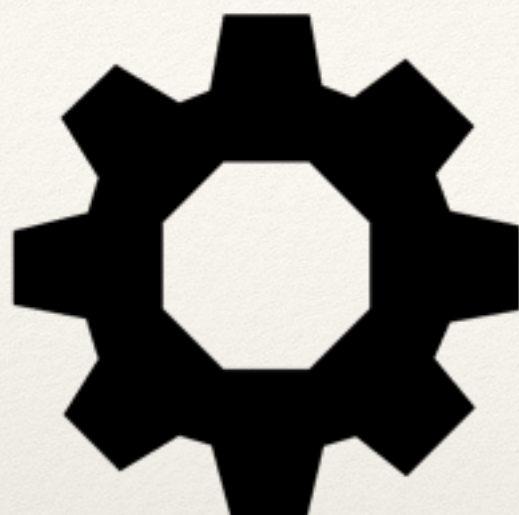
(web components way)

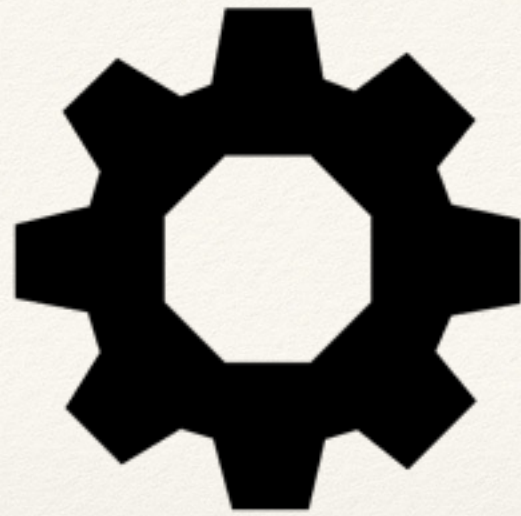
HTML

```
<img-slider>  
    
    
    
    
</img-slider>
```



Web Components





HTML Templates

```
<template id="">  
</template>
```

Creating a Template

```
<template id="mytemplate">  
  <img src="" alt="image">  
  <div class="comment"></div>  
</template>
```

Template

- ❖ Not rendered (hidden to DOM)
- ❖ Scripts don't run, audio doesn't play, ...
- ❖ Templates can be placed anywhere
- ❖ Templates can be nested (but are not automatically activated)

Activating a Template

```
var t = document.querySelector( '#mytemplate' );  
// Populate the src at runtime.  
t.content.querySelector( 'img' ).src = 'logo.png';  
  
var clone = document.importNode( t.content, true );  
document.body.appendChild( clone );
```

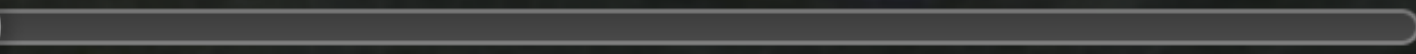


Shadow DOM

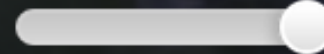
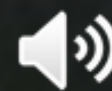
`div`

`#document-fragment`

`span`



0:10



Creating a Shadow DOM

```
<button>Push me</button>
```

```
<script>
```

```
var host = document.querySelector('button');
```

```
var root = host.createShadowRoot();
```

```
root.innerHTML = 'Do not <content></content>!';
```

```
</script>
```



Custom Elements

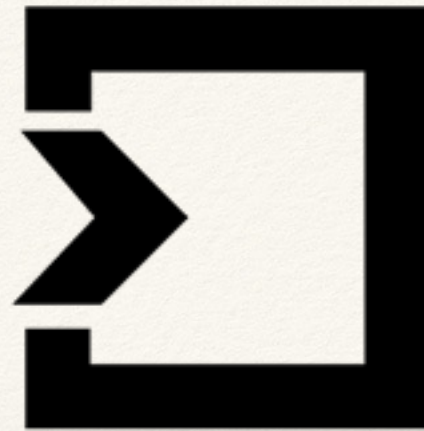
```
<my-element>  
</my-element>
```

Creating a Custom Element

```
1  <script>
2  (function() {
3      // Creates an object based in the HTML Element prototype
4      var element = Object.create(HTMLElement.prototype);
5
6      // Fires when an instance of the element is created
7      element.createdCallback = function() {};
8
9      // Fires when an instance was inserted into the document
10     element.attachedCallback = function() {};
11
12     // Fires when an instance was removed from the document
13     element.detachedCallback = function() {};
14
15     // Fires when an attribute was added, removed, or updated
16     element.attributeChangedCallback = function(attr, oldVal, newVal) {};
17
18     // Registers custom element
19     document.registerElement('my-element', {
20         prototype: element
21     });
22 }());
23 </script>
```

Custom Elements

- ❖ Name must contain a dash
- ❖ Its prototype must extend HTMLElement



HTML Imports

```
<link rel="import" href="part.html">
```

End of theory

Examples



Custom Elements

Explore the world of Web Components



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Web components give HTML the features you need

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Web components let you extend HTML with new capabilities so you can write better web apps faster. **Component Kitchen** is the place to learn about web components, and to find components developed by the web community for use in your projects. You can start with our [web component tutorial](#), browse our comprehensive [catalog](#) of public web components, or read our Staff Reviews and other component news below.

Try our interactive web components tutorial

Posted 12 Jan 2015

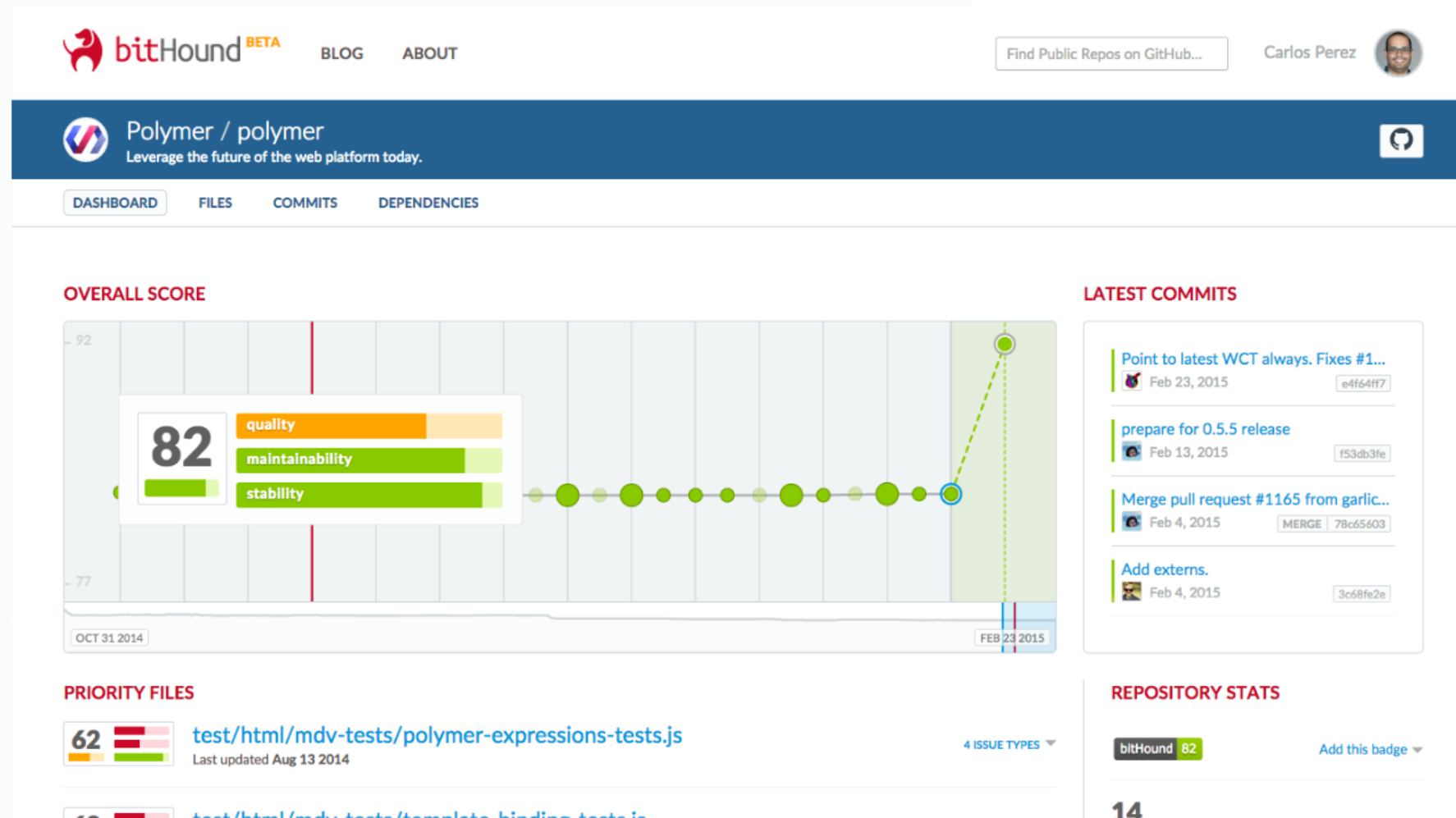
We've just posted an [interactive web components tutorial](#) that teaches the basic concepts with editable live demos. We hope you'll find that this tutorial:

- Explains the key principles at a quick pace under your control.
- Illustrates the principles through engaging live HTML demos. We think the best way to learn a technology is to



1.0.0 Fe Iron Elements Polymer core elements	1.0.1 Md Paper Elements Material design elements	1.0.1 Go Google Web Components Components for Google's APIs and services	1.0.1 Au Gold Elements Ecommerce Elements
1.0.0 Ne Neon Elements Animation and Special Effects	1.0.1 Pt Platinum Elements Offline, push, and more	1.0.0 Mo Molecules Wrappers for third-party libraries	

bitHound

March 16th • [Comments](#)

bitHound helps developers build resilient and remarkable software by offering actionable insights for public and private repositories. Custom components are used extensively on the front-end of the app for everything from buttons to a project's scorecard.

Sid Lee Paris Dashboard

March 3rd • [Comments](#)<http://builtwithpolymer.org>

WELCOME

Built with Polymer is a curated collection of web apps and websites using Polymer.

What's Polymer?

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EXTENSION

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Bower

A package manager for
the web

Demo

Web Components & APEX

Browser Support

	CHROME	OPERA	FIREFOX	SAFARI	IE
					
					
					
					

Polyfills to the rescue

- ❖ Snippets/Library of code that provide the technology that the browser should provide natively
- ❖ Two common libraries:
 - ❖ Polymer (by Google)
 - ❖ X-Tag (by Mozilla)

Lessons learned

- ❖ Web Components (frameworks) actively being developed
- ❖ Components not always backwards/forwards compatible

References

- ❖ Eric Bidelman
- ❖ <http://java.dzone.com/articles/introduction-web-components>
- ❖ <http://www.html5rocks.com>
- ❖ <https://css-tricks.com/modular-future-web-components/>
- ❖ <http://slides.com/jasonmayes/introduction-to-web-components#/>

Recap

- ❖ What are Web Components
- ❖ Examples of Web Components
- ❖ How to get started and use them in APEX

Q&A

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