### MATLAB<sup>®</sup> Report Generator<sup>™</sup> Release Notes

# MATLAB®



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508-647-7000

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MATLAB<sup>®</sup> Report Generator<sup>™</sup> Release Notes

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R2008a

**Bug Fixes** 

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**Bug Fixes** 

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### R2022a

Version: 5.12

**New Features** 

**Bug Fixes** 

# mlreportgen.report.SummaryTable: Summarize MATLAB objects in a report

Use instances of the mlreportgen.report.SummaryTable class with results of MATLAB Report Generator finder classes to generate tabular summaries of MATLAB workspace objects or other report containers in your report.

A SummaryTable object generates a table for objects found by a MATLAB Report Generator finder. Each table row lists the specified properties of the object. By default, the properties depend on the type of the object to report in the summary table.

You can customize which properties to include in the table by setting the **Properties** property of the SummaryTable reporter.

#### **Create cross-reference elements in PDF and Microsoft Word reports**

Starting in R2022a, you can add cross-reference elements in PDF and Microsoft<sup>®</sup> Word documents by using the mlreportgen.dom.XRef class. To cross-reference a target in your report, use the same link ID to create an mlreportgen.dom.XRef object and an mlreportgen.dom.LinkTarget object. Then append the two objects to the report object.

#### Find and report on MATLAB variables

Starting in R2022a, you can find MATLAB variables by criteria and report on the variables you find by using these classes:

- mlreportgen.finder.MATLABVariableFinder Variable finder
- mlreportgen.finder.MATLABVariableResult Variable search result

Use objects of the class mlreportgen.finder.MATLABVariableFinder to find MATLAB variables by criteria. Use objects of the class mlreportgen.finder.MATLABVariableResult to report on the variables you find.

# Customize table entries according to the content of the entries in an mlreportgen.report.BaseTable reporter

Starting R2022a, you can customize the appearance of table entries in an

mlreportgen.report.BaseTable reporter according to the content of the entries. Define a callback function that accepts an mlreportgen.dom.TableEntry object as an input argument and assign a handle of that callback function to the TableEntryUpdateFcn property of your BaseTable object. Appending the table to a report triggers the callback function once for each table entry before the table is appended to the report.

## R2021b

Version: 5.11

**New Features** 

**Bug Fixes** 

#### Find and report on Axes objects

Starting in R2021b, you can find and report on figure Axes objects. See axes.

- mlreportgen.finder.AxesFinder Axes finder
- mlreportgen.finder.AxesResult Result for found axes
- mlreportgen.report.Axes Reporter for specific Axes object

The axes reporter, mlreportgen.report.Axes, includes images of figure axes when added to a report. You can create axes reporters for axes that you create. Alternatively, you can use an mlreportgen.finder.AxesFinder object to find existing axes in a figure. Each finder result, stored in an mlreportgen.finder.AxesResult object, contains a customizable axes reporter for a found axes. Add the resulting AxesResult objects to your report or customize the Axes reporters for the results and then add the reporters to the report.

#### mlreportgen.dom.PageBorder: Specify page borders programmatically

In R2021b, you can specify page borders programmatically for PDF and Microsoft Word reports by creating an object of the mlreportgen.dom.PageBorder class and assigning the object to the PageBorder property of an object of one of these layout classes:

- mlreportgen.dom.DOCXPageLayout
- mlreportgen.dom.PDFPageLayout
- mlreportgen.report.ReporterLayout
- mlreportgen.report.ReportLayout

In previous releases, you could specify page borders only in report templates.

#### **Custom attributes for page borders in PDF Templates**

In R2021b, you can specify the style, color, width and margin of page borders in a PDF template by using the new custom attributes listed in Modify Styles in PDF Templates .

#### Include SVG images in PPT API presentations

Starting in R2021b, you can include Scalable Vector Graphics (SVG) images in generated presentations by using an mlreportgen.ppt.Picture object. To ensure that your version of PowerPoint<sup>®</sup> supports SVG images, see File formats that are supported in PowerPoint on the Microsoft website.

#### **PPT API clone Methods: Copy presentation objects**

In R2021b, you can include the same content more than once in a PowerPoint presentation by using the clone method to create a copy of a presentation object and then appending the copy to the appropriate place in the presentation. These API for PowerPoint (PPT API) classes have a clone method:

- mlreportgen.ppt.Paragraph
- mlreportgen.ppt.Picture

- mlreportgen.ppt.ExternalLink
- mlreportgen.ppt.InternalLink
- mlreportgen.ppt.Table
- mlreportgen.ppt.TableEntry
- mlreportgen.ppt.TableRow
- mlreportgen.ppt.Text
- mlreportgen.ppt.TextBox

The clone method copies the children of an object, but not the parent. The copy has the same formats as the original object. For example, if a paragraph has bold text, the copy of the paragraph also has bold text.

For more information, see the clone method of the mlreportgen.ppt.Paragraph class.

### R2021a

Version: 5.10

**New Features** 

**Bug Fixes** 

Version History

#### Control format of numbers in reports

In previous releases, to include a number in a report, you represented the number as an mlreportgen.dom.Text object. To control the format of the number, you converted the number to text in MATLAB before you created the Text object.

In R2021a, you can use objects of the mlreportgen.dom.NumberFormat class to specify the format of numbers in a report. To specify the format of one number, represent the number as an object of the new mlreportgen.dom.Number class, instead of as an object of the mlreportgen.dom.Text class, Assign the NumberFormat object to the Style property of the Number object. For example:

```
import mlreportgen.dom.*
rpt = Document("Report with NumberFormat", "pdf");
n = Number(pi);
n.Style = [n.Style {NumberFormat("%0.4f")}];
append(rpt,n);
close(rpt);
rptview(rpt);
```

To specify the format of all numbers in a report element, such as a paragraph, list, or table, assign a NumberFormat object to the Style property of the element object.

You can specify the default number format that the DOM API uses to generate numbers by using the new function mlreportgen.dom.setDefaultNumberFormat. The default format applies for the duration of the MATLAB session. You can override the default format by using a NumberFormat object. To get the default format, use the new function mlreportgen.dom.getDefaultNumberFormat.

See Format Numbers.

#### mlreportgen.report.MATLABCode: Report syntax-highlighted MATLAB code

Use an object of the mlreportgen.report.MATLABCode class to include syntax-highlighted MATLAB code in a report. Optionally, you can apply smart indenting to the reported code and report the McCabe cyclomatic complexity of the functions in the code.

#### rotate method: Change orientation of DOM API report pages

Use the rotate method to change the orientation of pages in a Microsoft Word or PDF report that is based on the DOM API. Use the rotate method with an mlreportgen.dom.DOCXPageLayout or mlreportgen.dom.PDFPageLayout layout object. You can access the default layout object by using the CurrentPageLayout property of an mlreportgen.dom.Document or

mlreportgen.dom.DocumentPart object and use rotate with that object. For example:

```
import mlreportgen.dom.*;
d = Document("myreport", "docx");
open(d);
pl0bj = d.CurrentPageLayout;
rotate(pl0bj);
```

```
append(d,"This page has landscape orientation.");
close(d);
rptview(d);
```

You can also use rotate with a layout object that you create yourself and append to the document or document part. For example:

```
import mlreportgen.dom.*;
d = Document("myreport","docx");
open(d);
pl0bj = D0CXPageLayout();
rotate(pl0bj);
append(d,pl0bj);
append(d,"This page has landscape orientation.");
close(d);
rptview(d);
```

The rotate method switches the Height and Width property values of the mlreportgen.dom.Pagesize object that is used by the DOCXPageLayout or PDFPageLayout object. The method also changes the value of the Orientation property from portrait to landscape or from landscape to portrait.

In previous releases, to change the page orientation, you had to switch the values of the Height and Width properties of the PageSize object yourself and update the Orientation property to be consistent with the page size.

#### Specify page dimensions programmatically in Report API reports

You can now programmatically customize the page sizes, margins, headers, footers, and gutters in a Report API report or report section. In previous releases, to customize the page dimensions, you had to modify the templates used by the report or report section. Use the template-based approach if you plan to make other modifications to the templates. Otherwise, use the programmatic approach.

Using the programmatic approach:

- To specify the page size, create an mlreportgen.dom.PageSize object and assign it to the PageSize property of the layout object used by the report or report section.
- To specify the page margins, header, footer, and gutter, create an mlreportgen.dom.PageMargins object and assign the object to the PageMargins property of the layout object used by the report or report section.

PageSize and PageMargins are new properties of the mlreportgen.report.ReportLayout and mlreportgen.report.ReporterLayout classes, which represent the layout in a report or report section, respectively. To access a layout object, use the Layout property of an mlreportgen.report.Report object or an object of one of these reporter classes:

- mlreportgen.report.TitlePage
- mlreportgen.report.TableOfContents
- mlreportgen.report.ListOfFigures
- mlreportgen.report.ListOfTables

- mlreportgen.report.ListOfCaptions
- mlreportgen.report.Chapter

For an example, see Customize the Page Size and Margins of a Report Programmatically.

#### **Better equation rendering**

In R2021a, an mlreportgen.report.Equation reporter can render an equation directly by using the rendering used by the Live Editor and Simulink<sup>®</sup> Editor. In previous releases, an Equation reporter used a figure window to render equations. Direct rendering has these advantages:

- The support for equation markup is better than the support provided by a figure window.
- Equations in a report have the same appearance as equations in the Live Editor and Simulink annotations.

In R2021a, direct rendering is disabled by default. To enable direct rendering, set the new UseDirectRenderer property of the Equation reporter to true.

#### **Version History**

If you set the UseDirectRenderer property to true:

- The image format must be PNG.
- Setting the background color has no effect.
- You must specify the color of an equation as a string scalar or character vector that contains a valid CSS name, RGB triplet, or hexadecimal color code. You cannot specify a color name using a short name, such as "r". For example, specify red as "red", "rgb(255,0,0)", or "#FF0000". For more information, see the Color property of the mlreportgen.report.Equation class.
- The getSnapshotImage method returns a data URL that contains the equation image instead of the path of the file that contains the image.

If your application requires formats other than PNG or a different background color, set the UseDirectRenderer property to false.

#### HTML to DOM Conversion: Support for more HTML elements

The classes that you use to convert HTML to DOM objects, mlreportgen.dom.HTML and mlreportgen.dom.HTMLFile, support these additional HTML elements:

- address
- big, small
- blockquote
- center
- cite, dfn, em, var
- dd, dl, dt
- kbd
- mark

- nobr
- samp
- strong
- th

For the complete list of supported HTML elements, see mlreportgen.dom.HTML and mlreportgen.dom.HTMLFile.

## mlreportgen.report.MATLABVariable: Improved reporting of enumeration classes

An mlreportgen.report.MATLABVariable object now reports the class member name for a variable that has an enumeration type. For example:

#### x. Monday

If the enumeration class is a subclass of a MATLAB built-in class, the underlying value of the member is also reported. For example:

#### y. ON (true)

If the enumeration class defines properties, the member name is reported in the property table. For example:

#### Table 1. z

| Enumerated Value: Error |       |
|-------------------------|-------|
| Property                | Value |
| R                       | 1     |
| G                       | 0     |
| В                       | 0     |

#### Scale Word document contents to paper size

You can scale the contents of a Microsoft Word document to fit A4 or US Letter paper sizes using one of these approaches:

• When you print a document with docview, use the "printdocscaled" option. For example:

```
docview("myDoc.docx","printdocscaled");
```

• When you print the document using the print method of the mlreportgen.utils.WordDoc class, use the ScaleToFitPaper option. For example:

```
docobj = mlreportgen.utils.WordDoc("MyDoc.docx");
print(docobj,"ScaleToFitPaper",true);
```

# mlreportgen.report.TableOfContents: Use new properties for number of levels and leader pattern

To specify the number of header levels and the leader type for a Report API table of contents, use the NumberOfLevels and LeaderPattern properties of the mlreportgen.report.TableOfContents object, instead of the TOCObj property.

#### **Version History**

Report generation programs that use the TOCObj property will continue to run.

#### mlreportgen.ppt.InternalLink class: Link from one slide to another

In R2021a, the API for PowerPoint (PPT API) provides a new class, mlreportgen.ppt.InternalLink, that you can use to link from one slide in a presentation to another slide in the presentation. You can identify the target slide by its index or name. See Create and Format Links.

#### mlreportgen.ppt.Presentation.createTemplate: Create a copy of the PPT API default presentation template

Use the new mlreportgen.ppt.Presentation.createTemplate method to create a copy of the default PowerPoint API presentation template. For example:

import mlreportgen.ppt.\*

templateCopy = mlreportgen.ppt.Presentation.createTemplate("myTemplate.pptx");

You can customize the copy and use it as the template for another presentation. For example:

ppt = Presentation("myPresentation.pptx",templateCopy);

In previous releases, to create a copy of the default template, you had to create an empty presentation without specifying a template and save the presentation.

# R2020b

Version: 5.9

**New Features** 

**Bug Fixes** 

Version History

#### Lists of figures, tables, and captions in reports

To create a list of figures section in a Report API report, use an mlreportgen.report.ListOfFigures object. To create a list of tables section, use an mlreportgen.report.ListOfTables object. For a section that contains a list of other types of report elements, such as equations, use an mlreportgen.report.ListOfCaptions object. See Create a List of Figures or Tables in a Report API Report and Create a List of the Captions or Titles of Related Report Elements in a Report API Report.

To add a list of figures, tables, or captions to a DOM API report, use an mlreportgen.dom.LOF, mlreportgen.dom.LOT, or mlreportgen.dom.LOC object.

#### Changes to default border widths in PDF reports

In R2020b, the default border width for PDF reports is 3px. In previous releases, the default border width was 1px. To override the default border width, the default PDF templates now include markup to specify 1px borders for tables. The templates do not specify the border widths for report elements other than tables.

As a result of the new default border width, the border width in a PDF report generated in R2020b is 3px instead of 1px in these cases:

- You use an existing custom PDF template, that does not specify table border widths, with a report generation program that generates tables with borders.
- You create a border for a report element other than tables.

#### **Version History**

In R2020b, if you generate table borders using the default PDF templates, the borders are 1px. You do not have to make any changes.

In R2020b, if you use a custom PDF template that you created in a previous release and the template does not specify the border widths, the table borders are 3px. To update the custom templates to specify 1px borders:

**1** Unzip the template. For example:

```
unzipTemplate('my custom template.pdftx');
```

- 2 Open the root.css file, which is in the stylesheets folder of the unzipped template. For example, if the template is my\_custom\_template.pdftx, open my\_custom\_template/ stylesheets/root.css.
- **3** Add this markup to the root.css file:

```
th,
td {
  -fo-border-top-width: lpx;
  -fo-border-bottom-width: lpx;
  -fo-border-start-width: lpx;
  -fo-border-end-width: lpx;
}
```

**4** Package the template. For example:

```
zipTemplate('my_custom_template.pdftx');
```

See Modify Styles in PDF Templates.

In R2020b, if you generate borders for elements other than tables, the borders are 3px by default. To generate the borders with a different width, use an mlreportgen.dom.Border style object. When you specify a border style or color, it is a good practice to also specify the width.

#### Changes to hyphenation and line break behavior for PDF reports

R2020b includes these improvements to line break and hyphenation behavior in PDF reports:

- Where possible, line breaks occur between words. When necessary to prevent overflow, line breaks may occur anywhere in a word.
- When hyphenation is on, hyphenation characters are used only when a line break occurs at the end of a syllable.
- When hyphenation is off, table cell contents do not overflow. In previous releases, to prevent overflow, hyphenation was on by default for tables. Now that table cells do not overflow when hyphenation is off, hyphenation is off by default for tables.

#### **Version History**

A PDF report generated in R2020b might look different than the same report generated in previous releases due to the changes in hyphenation and word break behavior.

#### Changes to an embedded file in a PDF report

In R2020b, if you use mlreportgen.dom.EmbeddedObject to embed a file in a PDF report, the link to the embedded file is inserted into the PDF as an annotation that has a paper clip icon. For example:

About XYZ, Inc. **G**<u>
Company(nfo.pdf</u>

To open the embedded file, double-click the paper clip icon. If you do not see the icon, try opening the PDF with a different PDF viewer, such as Adobe® Acrobat®.

In previous releases, a hyperlink to the embedded file was inserted into the PDF. For example:

About XYZ, Inc. CompanyInfo.pdf

#### **Version History**

If a report generation program embeds a file in a PDF report, the appearance of the link to the embedded file differs between R2020b and previous releases. In R2020b, you see a paper clip icon

that you click to open the embedded file. In previous releases, you see a hyperlink. No changes are required to your report generation program.

#### append: Use append to add content to Report API objects

To add content to mlreportgen.report.Report, mlreportgen.report.Chapter, and mlreportgen.report.Section objects, you can now use the append method instead of the add method. For compatibility considerations, see "add method is not recommended" on page 4-5.

## New mlreportgen.dom.EmbeddedObject creation syntax for specifying the style of link text

The mlreportgen.dom.EmbeddedObject class was introduced in R2020a. In R2020b, you can create an object of this class by using a new syntax that allows you to specify the template-defined style name to use for the link text.

embObj = mlreportgen.dom.EmbeddedObject(path,linkText,styleName)

The new creation syntax creates an mlreportgen.dom.Text object to hold the link text and sets the StyleName property of the Text object to the value of the styleName argument.

# mlreportgen.report.MATLABVariable reporter options for specifying reported name and value

Specify the name or value reported by an mlreportgen.report.MATLABVariable reporter using these new options:

- Title property If you set this property, the reporter uses it as the title of the variable in a report. Otherwise, it uses the value of the Variable property.
- **setVariableValue** method Use this method to specify the value to report for a variable. You can use this method to report values without creating a variable for the value. For example, you can report an individual entry in a containers.Map object.

```
myMap = containers.Map(["key1","key2"],[100,200]);
rptr = mlreportgen.report.MATLABVariable("key1");
setVariableValue(rptr,myMap("key1"));
```

The setVariableValue method sets the Location property to "User-Defined", which is a new value for this property in R2020b.

#### New PowerPoint table creation syntax for specifying the table style

You can create an object of the mlreportgen.ppt.Table class by using a new syntax that allows you to specify the template-defined style name to use for the table.

tableObj = mlreportgen.ppt.Table(tableValues,styleName)

The new creation syntax creates the Table object with the specified content and sets the StyleName property to the value of the styleName argument.

To view a list of valid style names, use the getTableStyleNames method of the mlreportgen.ppt.Presentation object to which the table is added.

#### Features being removed or changed

#### add method is not recommended

Still runs

Starting in R2020b, use the **append** method instead of the **add** method to add content to objects of these Report API classes:

- mlreportgen.report.Report
- mlreportgen.report.Chapter
- mlreportgen.report.Section

To add content to a DOM API object, such as an mlreportgen.dom.Paragraph object, continue to use the append method of the DOM object. The advantage of using append to add content to Report API objects is that you use the same method name as you use to add content to DOM API objects.

There are no plans to remove the add methods of the Report, Chapter, or Section classes. Report API programs that use the add methods will continue to run.

To update existing code, replace the method name add with append as shown by the examples in the table.

| Not Recommended  | Recommended   |
|--|---|
| <pre>import mlreportgen.report.* import mlreportgen.dom.*</pre>  | <pre>import mlreportgen.report.* import mlreportgen.dom.*</pre>   |
| <pre>rpt = Report("myrpt", "pdf");<br/>ch = Chapter("My Chapter");<br/>sect = Section("My Section");<br/>para = Paragraph("My Content ");<br/>append(para, "more Content");<br/>add(sect,para);<br/>add(ch,sect);<br/>add(rpt,ch);</pre> | <pre>rpt = Report("myrpt","pdf");<br/>ch = Chapter("My Chapter");<br/>sect = Section("My Section");<br/>para = Paragraph("My Content ");<br/>append(para,"more Content");<br/>append(sect,para);<br/>append(ch,sect);<br/>append(rpt,ch);</pre> |
| <pre>close(rpt); rptview(rpt);</pre>   | <pre>close(rpt); rptview(rpt);</pre>  |

### R2020a

Version: 5.8 New Features

**Bug Fixes** 

Version History

#### **PowerPoint API table formatting**

In R2020a, the API for PowerPoint (PPT API) provides new classes and properties for formatting tables.

The new format classes are:

- mlreportgen.ppt.Border
- mlreportgen.ppt.ColSep
- mlreportgen.ppt.FlowDirection
- mlreportgen.ppt.RowHeight
- mlreportgen.ppt.RowSep
- mlreportgen.ppt.TextOrientation

The new format properties of the mlreportgen.ppt.Table class are:

- BackgroundColor
- FlowDirection
- Border
- BorderColor
- BorderWidth
- RowSep
- RowSepColor
- RowSepWidth
- ColSep
- ColSepColor
- ColSepWidth

The new format properties of the mlreportgen.ppt.TableEntry class are:

- Border
- BorderColor
- BorderWidth
- ColSpan
- RowSpan
- TextOrientation

The mlreportgen.ppt.TableRow class has a new property, Height.

### mlreportgen.ppt.AutoFit: Scale text to fit placeholder or text box in slide

Use an mlreportgen.ppt.AutoFit format object to scale text to fit a placeholder or text box in a PPT API slide.

#### mlreportgen.dom.EmbeddedObject class: Embed files in a report

Use objects of the mlreportgen.dom.EmbeddedObject class to embed files in a document rather than linking to the external files. You can then move the report without having to move the files.

In some cases, a file cannot be embedded in a document. An mlreportgen.dom.EmbeddedObject causes a document to link to the external file instead of embedding the file in these cases:

- The document type is single-file HTML
- The document type is Microsoft Word and the external file type is *not* one of these types:
  - xlsx
  - pptx
  - docx

## mlreportgen.report.HTMLModuleTabs class: Create tabbed panels in HTML reports

An object of the new mlreportgen.report.HTMLModuleTabs class adds a widget that consists of a stack of tabbed panels (module tabs) to an HTML report. Selecting a tab displays the contents of the panel. Use an HTMLModuleTabs object to display related information in compact form in an HTML or single-file HTML report.

#### New functions for preparing HTML for conversion to DOM objects

Use the new mlreportgen.utils.html2dom.prepHTMLString and mlreportgen.utils.html2dom.prepHTMLFile functions to prepare HTML for use with mlreportgen.dom.HTML or mlreportgen.dom.HTMLFile objects. You use HTML or HTMLFile objects to convert HTML to DOM objects. The HTML and HTMLFile objects typically cannot accept the raw HTML output of third-party applications, such as Microsoft Word, that export native documents as HTML markup. See Convert HTML Content to a DOM Object.

# mlreportgen.dom.Preformatted class: Preserve white-space formatting of text

Use objects of the mlreportgen.dom.Preformatted class to preserve spaces and line feeds in a block of report text and render the text in monospace font. For example, use an mlreportgen.dom.Preformatted object to add program code to a report.

#### mlreportgen.utils.normalizeLinkID: Generate a valid link target ID for all report types

Use the new function mlreportgen.utils.normalizeLinkID to generate a link target ID that is valid for Microsoft Word, PDF, and HTML reports. The ID generated by

mlreportgen.utils.normalizeLinkID consists of the prefix mw\_ and an MD5 hash of the input ID. The generated ID conforms to the Word limitation on ID length and the PDF requirement that an ID begin with an alphabetic character.

#### **Version History**

In a future release, a link target ID generated by mlreportgen.utils.hash might not be valid for PDF reports. To ensure that a link target ID is valid for all report types, use mlreportgen.utils.normalizeLinkID instead of mlreportgen.utils.hash.

To generate a link target ID for a Simulink or Stateflow<sup>®</sup> object, continue to use slreportgen.utils.getObjectID. This function generates a link target ID that is valid for all report types.

#### HTML text no longer wrapped in a paragraph

In R2020a, for HTML reports, text that is appended directly to a document, table, or list is no longer wrapped in a paragraph by default. For example, consider this code:

```
import mlreportgen.dom.*
d = Document('myReport', 'html');
append(d,Text('abc'));
append(d,Text('def'));
close(d);
rptview(d);
```

In previous releases, the text in the generated report looked like:

abc

def

In R2020a, the text looks like:

abcdef

For Microsoft Word and PDF reports, there is no behavior change for text appended directly to a document, table, or list. The DOM API wraps the text in a paragraph.

#### **Version History**

In R2020a, to generate HTML with text wrapped in a paragraph, put the text in an mlreportgen.dom.Paragraph object and append the object to the document. For example:

```
import mlreportgen.dom.*
d = Document('myReport','html');
append(d,Paragraph('abc'));
append(d,Paragraph('def'));
close(d);
rptview(d);
```

### R2019b

Version: 5.7 New Features Bug Fixes Version History

#### Inline display of equations

You can display an equation in line with the text of a paragraph by using the DisplayInline property and the getImpl method of an mlreportgen.report.Equation reporter object. Set the DisplayInline property to true and call the getImpl method to get a DOM image of the equation that you can append to the paragraph. For example:

```
eq = Equation('\int_{0}^{2} x^2\sin(x) dx');
eq.DisplayInline = true;
impl = getImpl(eq,rpt);
append(p,impl);
```

If DisplayInline is false, getImpl returns a document part.

#### More options for vertically aligning inline elements

You have more options for vertically aligning inline elements, such as text or images. You can set the Value property of an mlreportgen.dom.VerticalAlign object to one of these new values:

- 'text-top' Aligns an element with the top of the content area of the parent element.
- 'text-bottom' Aligns an element with the bottom of the content area of the parent element.
- length Offsets an element from the baseline by a specified length.

The values 'text-top' and 'text-bottom' are not supported for Microsoft Word documents.

#### SVG images in Microsoft Word reports

You can now include Scalable Vector Graphics (SVG) images in Microsoft Word reports. In previous releases, you could include SVG images in only PDF or HTML reports. The support for SVG images in Word reports affects the report elements in this table.

| Report Element              | Behavior Change   |
|-----------------------------|---|
| mlreportgen.report.Figure   | • The figure reporter can export snapshot images in SVG format for all report types.  |
|                             | <ul> <li>The default value of the SnapshotFormat<br/>property is now 'svg'. In previous releases, it<br/>was 'auto'.</li> </ul>   |
|                             | <ul> <li>The value 'auto' now indicates 'svg' for all<br/>report types. In previous releases, 'auto'<br/>indicated 'svg' for HTML and PDF reports<br/>and 'emf' or 'png' for Word reports,<br/>depending on the platform.</li> </ul>  |
| mlreportgen.report.Equation | The default format used for the snapshot image of<br>an equation is now SVG for all report types. In<br>previous releases, for Word reports, the format<br>was EMF or PNG, depending on the platform. You<br>can use the new SnapshotFormat property to<br>change the format. |

| Report Element | Behavior Change   |
|----------------|---|
|                | You can create an mlreportgen.dom.Image<br>object from an SVG image and include it in a<br>Word report. In previous releases, to include an<br>image in a Word report, you had to create the<br>mlreportgen.dom.Image object from an image<br>with a format other than SVG. |

#### **Version History**

Word reports that contain SVG images require Word 2016 or later. In MATLAB R2019b, to generate reports with images that are compatible with earlier versions of Word, you can:

- Set the SnapshotFormat property of an mlreportgen.report.Figure or mlreportgen.report.Equation object to a value other than 'svg'. To specify the image format used by default in previous releases of MATLAB, set SnapshotFormat to:
  - 'emf' for a Windows<sup>®</sup> platform
  - 'png' for a UNIX<sup>®</sup> or Mac platform
- Create mlreportgen.dom.Image objects from images that have a format other than SVG.

#### Partial support for em units when converting HTML to DOM objects

In previous releases, when you created a DOM document from HTML markup, em units in the HTML were ignored. In R2019b, em units are converted to points. By default, the font size of one em unit is 12 points.

If you create the document by using an mlreportgen.dom.HTML object, you can specify the font size, in points, of one em unit by setting the EMBaseFontSize property. For example, if EMBaseFontSize is 14, 2 em units become 28 points.

Set the EMBaseFontSize property in an empty mlreportgen.dom.HTML object and then add the HTML to the object. For example:

```
import mlreportgen.dom.*;
rpt = Document('MyReport','pdf');
htmlobj = HTML();
htmlobj.EMBaseFontSize = 14;
htmltext = fileread('MyHTML.html');
append(htmlobj,htmltext);
append(rpt,htmlobj);
close(rpt);
rptview('MyReport.pdf');
```

Setting the EMBaseFontSize property in an mlreportgen.dom.HTML object that already contains the HTML has no effect.

#### Indentation of ordered lists for Microsoft Word documents

In R2019b, the default indentation for an ordered list in Microsoft Word output is 0.25 inches. The default indentation for an ordered list is now the same as the default indentation for an unordered list.

#### **Version History**

In R2019b, by default, an ordered list is indented in Word output. In previous releases, by default, an ordered list was unindented in Word output.

For example, consider the ordered list o1 and the unordered list o2:

```
ol = OrderedList({'a' 'b' 'c'});
o2 = UnorderedList({'a' 'b' 'c'});
```

In R2019b, both lists are indented in the Word output. The lists look like:

| 1. | а |
|----|---|
| 2. | b |
| 3. | с |
| ٠  | а |
| •  | b |
| •  | с |

In previous releases, the unordered list is indented, but the ordered list is not indented. The lists looked like:

1. a 2. b 3. c • a • b • c

In R2019b, to generate an unindented ordered list, set the outer margin of the list to 0.25 inches.

ol = OrderedList({'a' 'b', 'c'}); ol.Style = {mlreportgen.dom.OuterMargin('0.25in','0in')};

Specify 0.25 inches, not 0 inches, to allow for the 0.25 inches required for the list item numbers.

# PropertyFilterFcn and NumericFormat properties in MATLAB variable reporter

The MATLAB variable reporter, mlreportgen.report.MATLABVariable, has two new properties:

- **PropertyFilterFcn** For a variable that contains an object, prevent the display of one or more of the object properties.
- NumericFormat For a variable that contains a noninteger number, format the display of the number or specify the number of significant digits to display.

By default, these properties are empty.

#### Manipulation of tables and pictures that come from a Microsoft PowerPoint presentation template slide

In R2019b, when you use the PowerPoint API to create and update a presentation that comes from a template, you can modify properties of the tables and pictures that come from the template presentation slides.

For a table that comes from a template slide, you can modify the properties of the mlreportgen.ppt.TemplateTable object that represents the table. For a picture, you can modify the properties of the mlreportgen.ppt.TemplatePicture object that represents the picture. You can change the position (X and Y properties), Height, Width, and Name. You can also modify the XML markup for the table or picture. In previous releases, to make those kinds of changes, you had to replace the table or picture.

For example, to change the position of a picture, use the following code to find the mlreportgen.ppt.TemplatePicture object that represents the picture and modify its X and Y properties.

```
import mlreportgen.ppt.*
ppt = Presentation('newppt','oldppt');
open(ppt);
templatePicObj = find(ppt,'MyPicture');
templatePicObj.X = '100px';
templatePicObj.Y = '200px';
close(ppt);
```

### R2019a

Version: 5.6

**New Features** 

#### **Report Explorer-based reporter**

mlreportgen.report.RptFile creates a reporter from a Report Explorer .rpt setup file. Adding this reporter to a Report API report setup file generates the setup file contents and adds the contents to the report.

#### Create a custom reporter

A new method, mlreportgen.report.Reporter.customizeReporter, has been added to the Report API Reporter class. Use this method to create a skeleton reporter that you can use as a starting point for creating a custom reporter.

#### **Report API examples**

Examples have been added to the documentation under MATLAB Report Generator Task Examples. These examples illustrate using the Report API to generate and format common types of report content, such as wide tables fitting on a page and side-by-side images, figures, and tables.

### R2018b

Version: 5.5

**New Features** 

# MATLAB Variable Reporter: Include information on MATLAB variables in a report

You can use the MATLABVariable reporter to format and include the values of MATLAB variables in a report. The reporter formats a variable as a table, paragraph, or string, using the format most suitable for the variable value type.

The MATLABVariable reporter reports variables defined:

- In the MATLAB workspace
- In a MAT-file
- As global variables
- In the scope of the reporter

These types of variable values are supported:

- Characters, character arrays, and strings
- Cell vectors and cell arrays
- Logical scalars, logical vectors, and logical arrays
- Numeric scalars, numeric vectors, and numeric arrays
- MATLAB tables
- MATLAB objects, MATLAB object vectors, and MATLAB object arrays
- Simulink objects
- Stateflow objects
- Graphics objects
- MATLAB structures, vectors of structures, and arrays of structures

#### Table Slicer: Include tables sliced by column to fit on report pages

A TableSlicer utility splits a table vertically into multiple slices, each small enough to fit legibly on a page. The Report API BaseTable, LookupTable, and Simulink TruthTable reporters use the TableSlicer to generate legible tables.

#### Enhanced table of contents customization

The TableOfContents reporter allows programmatic customization of the table of contents (TOC) that it generates. For example, you can now programmatically specify the number of TOC levels and the TOC leader pattern.

#### **Collapsible table of contents for HTML reports**

In HTML reports, you can collapse the table of contents to provide additional width for viewing the report content.

### **Utility functions**

These utility functions enable advanced users to manipulate documents and applications directly, and to obtain, manipulate, and test files, characters, and strings.

| mlreportgen.utils.tidy                | Correct and clean XML/HTML content                           |
|---------------------------------------|--|
| mlreportgen.utils.rptviewer           | Display a report   |
| mlreportgen.utils.powerpoint          | MATLAB interface to PowerPoint                               |
| mlreportgen.utils.word                | MATLAB interface to Microsoft Word                           |
| mlreportgen.utils.capitalizeFirstChar | Capitalize first character of a string                       |
| mlreportgen.utils.normalizeString     | Remove extra spaces and line feeds from a string             |
| mlreportgen.utils.hash                | Hash a given string  |
| mlreportgen.utils.makeSingleLineText  | Force a variable to be a 1-by-N string                       |
| mlreportgen.utils.toString            | Create a string representation of a MATLAB variabl           |
| mlreportgen.utils.fileToURI           | Convert file system path to a Universal Resource Id<br>(URI) |
| mlreportgen.utils.findFile            | Find a file path   |
| mlreportgen.utils.isFileLocked        | Test whether a file is locked                                |
| mlreportgen.utils.units               | Set of methods to convert from one unit to another           |
|                                       |  |

### R2018a

Version: 5.4

**New Features** 

# Custom Finders: Search data containers and return results in reportable form

You can create custom finders to search data containers for specified objects and return the results in reportable form. By using finders, you can separate search logic from report logic in your report generators.

To create a finder, define a MATLAB class that is a subclass of the mlreportgen.finder.Finder class. For more information, see Create and Use a Custom Finder.

## R2017b

Version: 5.3 New Features

# MATLAB Reporters: Use MATLAB objects to generate title pages, tables of contents, chapters, figures, and other report elements

You can use the Report API to create MATLAB programs to generate reports. This API simplifies creating reports by providing objects for common report elements, such as title pages and chapters. You can use both Report API and DOM API objects in the same program. Using DOM API objects, you can customize the formatting of the provided Report API elements and insert additional elements in your report.

When you create a report program, you can use the following Report API objects to generate report elements, images, and MATLAB figure snapshots.

- mlreportgen.report.Report contains the report.
- mlreportgen.report.Reporter base class for reporter objects.
- mlreportgen.report.ReportLayout specifies layout options for the report.
- mlreportgen.report.ReporterLayout specifies layout options for a reporter.
- mlreportgen.report.TitlePage generates the title page of the report.
- mlreportgen.report.TableOfContents generates the table of contents of the report.
- mlreportgen.report.Chapter generates a chapter of the report.
- mlreportgen.report.Section generates a section or subsection of the report.
- mlreportgen.report.Equation generates an equation for the report.
- mlreportgen.report.Figure generates a snapshot of a MATLAB figure, including an optional caption.
- mlreportgen.report.FormalImage generates an image from an image file, including an optional caption.
- mlreportgen.report.BaseTable generates a table for the report.
- mlreportgen.report.InlineContent fills holes in templates.

#### PDF Image Format: Generate PDF Reports containing PDF images

The mlreportgen.dom.Image object and Report Explorer GUI support adding PDF images (.pdf) to PDF reports. In Report Explorer, PDF images are supported only for Direct PDF (from Template) output. You can create PDF images using the print command.

#### **Rebuild Template and Style Sheet Cache**

Two functions, rptrebuildcache and rptrebuildregistry, rebuild the Report Explorer template cache and style sheet registry, respectively. Use these functions if you add a template or style sheet to the MATLAB path after opening the Report Explorer or before running a setup file for the first time.

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### R2017a

Version: 5.2 New Features Bug Fixes Version History

#### Single-File HTML Output: Generate a report as a single HTML file

In Report Explorer, you now can generate an HTML report as a single file by selecting Single-file HTML (from template) or Single-file HTML as the file output format. The single file contains all the document content, including text, images, and style sheet. You can continue to obtain an HTML report as a zipped or unzipped folder of separate HTML documents. For the folder option, use HTML (from template) or HTML as the file output format.

### **Embedded Style Sheet: Convert HTML document containing style sheets to Microsoft Word and PDF**

Word and PDF reports preserve the HTML styles defined in the head element of an HTML document. Preserving the HTML styles ensures that both the original HTML document and the generated report use the same formatting.

#### Page Break Component: Insert page breaks in template-based Microsoft Word and PDF reports

You now can add a page break in your report setup file using the Report Explorer. The component library includes a **Page break** component under **Formatting**. When you insert a **Page break**, the sections or subsections start on new pages in .docx (Word (from template)) PDF (from Word template), and Direct PDF (from Template)) reports.

## White-Space Options: Use spaces and line feeds to format code and other text in reports

In the **Paragraph** and **Text** components dialog boxes, a **Preserve white space** format option replaces the **Retain spaces and carriage returns** and **Show text as syntax-highlighted MATLAB code** options. You can now preserve white space, such as spaces and line feeds, in proportionally spaced text. Two new components, **Code** and **Preformatted**, replace the formatting options previously provided in the **Paragraph** component. Both of these new components preserve white space and default to monospace font. The **Code** component differentiates inline code from other paragraph text. The **Preformatted** component preserves white-space formatting in a program listing.

#### **PDF Table Automatic Layout**

The default table layout method for PDF has changed from fixed to auto. The fixed method uses the table width and column widths that you specify to lay out the table. If you do not specify a table width and column widths, the fixed method lays out the table so that it occupies the width of the page between the page margins. The table columns, in this case, have equal widths.

Auto layout also uses the table width and column widths that you specify. If you do not specify a table width and column widths, the auto method sizes the table columns to fit the widest content in each column. The table width is the sum of the width of its columns. Auto layout collapses empty columns.

#### **Version History**

The layout of a table that does not specify its width and column widths differs in this release from the layout of a table from a previous release. To preserve the layout that the table had in previous releases, add the table format ResizeToFitContents(false) to the table style. For example,

table.Style=[table.Style, {ResizeToFitContents(false)}];

## R2016b

Version: 5.1 New Features Bug Fixes

Version History

# **Report Forms: Use the Report Explorer and Microsoft Word, PDF, or HTML templates to create form-based reports**

You can now use the Report Explorer to create form-based reports. Forms help you to build a report based on a template, simplifying the creation of your report setup. Your template can contain holes that you can fill with content (such as text and tables) or with subforms. You can fill a hole in a subform with another subform. For more information, see Form-Based Reports.

For PDF and Word output types, each subform can contain a page layout, which can include a header, a footer, and page layout information. Each of these parts of the layout can contain holes that you can fill. For example, you can fill a hole in a header with the name of a chapter.

You can also use a subform in a loop to fill the form with content from each iteration.

Report Explorer comes with default templates that include holes, such as a title page, chapter titles, and header and footers. To create a form-based report, in the Report Explorer, select **File > New Form**. The components associated with creating form-based reports appear in the component library under **Form-Based Reporting**.

#### PDF Image Maps: Add hyperlinks to images in PDF reports

PDF output now supports image maps. In previous releases, only HTML output supported image maps. To see the approach for creating image maps, see Create Image Maps.

#### PDF Watermarks: Add watermarks to PDF reports

You can add a watermark to a PDF report. A watermark is an image that appears in the background of a page. For example, a watermark can contain the word Draft or Confidential. It runs behind the text on each page you apply it to. Add the watermark in a PDF page layout using the Report Explorer or the DOM API.

In the API, use a mlreportgen.dom.Watermark object to create the watermark based on a .bmp, .jpg, .png, .svg, or .tiff image. Assign it to the Watermark property of an mlreportgen.dom.PDFPageLayout object.

In Report Explorer, use the PDF Page Layout component to specify the watermark image file name.

#### **Collapsible Table of Contents: Hide table of contents in HTML reports**

In HTML reports that contain a table of contents, you can now expand and collapse the TOC structure. For the file output format, select HTML (from template) before you generate the report. Expand or collapse each node by clicking the plus or minus sign on the node. Press **Ctrl**+click to expand or collapse the entire structure.

## Simplified Table Creation: Create tables using MATLAB tables and categorical arrays

You can now use MATLAB categorical arrays as values for creating tables. You can use this data type when creating mlreportgen.dom.Table and mlreportgen.dom.FormalTable objects and with the mlreportgen.dom.Document.append method.

The mlreportgen.dom.MATLABTable class has also been added. Use it to create a DOM object that represents a MATLAB table in a report using MATLAB formatting of tables.

#### **Report Components: Add a line break**

You can now add a line break in your report setup file using the Report Explorer. The component library includes a Line Break component for this purpose, under the Formatting components. You can add a Line Break component as a child of a Paragraph component or a Table Entry component.

#### **Conversion Templates: Create nested numbered sections**

Numbered sections can now include nested numbered sections. For each output type, you can select a template that supports this formatting. Nested numbered sections render with a number for each subsection. Previously, only the number for the top level of a section appeared in the report. For the file format for the report you are generating, select one of the (from template) options. Select Default Numbered from the template list, or create your own template based on this template.

### PDF Fonts: System fonts detected for PDF output

You can now specify any font installed on your system for use in PDF reports without additional configuration for MATLAB Report Generator. In previous releases, you had to configure your Report Generator setup to detect these fonts. PDF font detection applies to reports created using the Report Explorer and the DOM API.

#### Noto Fonts: New fonts supported for non-English PDF reports

In 2016b, you can use Google<sup>®</sup> Noto fonts to produce PDF reports in languages that require non-English characters, such as Japanese, Korean, or Cyrillic. Noto font support applies to reports generated by the Report Explorer and the DOM API.

- **1** Download the Noto Sans font that supports your language.
- 2 Install the font to one of these folders. On Linux<sup>®</sup>:
  - \$user/.fonts, where \$user is your home folder
  - /usr/local/fonts
  - /usr/share/fonts
  - /usr/X11R6/lib/X11/fonts

On Windows:

• \$windir\Fonts, where \$windir is the Windows folder, for example, C:\Windows

On a Mac:

- \$usr/Library/Fonts/, where \$usr is your home folder
- /Library/Fonts/
- /System/Library/Fonts/
- /Network/Library/Fonts/

**3** Update the language font map to set the new font as the default for Report Explorer, or specify the font in your template for DOM output. To update the language font map, see Configure PDF Fonts.

# Subdocuments in DOM Reports: Use docview function to unlink subdocuments

On Windows systems, you can remove links to subdocuments from the report document and instead include that content in the master document. With the docview function, use the 'unlinkdocxsubdoc' option.

## **Diff and Merge: Reuse open MATLAB sessions for diff and merge from external source control tools**

Save time by using open MATLAB sessions for XML comparison and merge of Simulink models from your external source control client.

### **Version History**

In previous releases, you could use the fileComparisonDriver function to customize external source control tools, but you could not reuse open MATLAB sessions. The fileComparisonDriver will be removed in a future release. Instead, use the instructions here: Customize External Source Control to Use MATLAB for Diff and Merge.

### R2016a

Version: 5.0

**New Features** 

# Scalable Report Generation: Generate PDF reports as big as 10,000 pages

In previous releases, the DOM API used Microsoft Word to generate PDF documents from Word documents. In R2016a, the DOM API generates PDF documents directly. The direct-to-PDF capability allows you to programmatically generate large PDF documents on all platforms supported by MATLAB. This release also adds a new output type to Report Explorer, Direct PDF (from template), based on the direct-to-PDF capability. The new output type speeds up PDF generation and expands and simplifies PDF formatting.

Direct-to-PDF allows you to use an HTML template to specify the fixed content and format of a report and holes for inserting generated content. The template can use a predefined set of HTML tags to specify a report's page layout, table of contents location, and the content of page headers and footers. You can also programmatically specify page layout, table of contents location, and page headers and footers. The DOM API automatically generates table of contents and page numbers. See Create an HTML or PDF Template.

See these new classes associated with the new PDF capability in the DOM API:

mlreportgen.dom.StyleRef

Use this class to create running page headers and footers in Word and PDF documents. See Create Running Page Headers and Footers

- mlreportgen.dom.PDFPageLayout
- mlreportgen.dom.PDFPageHeader
- mlreportgen.dom.PDFPageFooter
- mlreportgen.dom.Page
- mlreportgen.dom.NumPages
- mlreportgen.dom.CSSProperty
- mlreportgen.dom.CSSProperties
- mlreportgen.dom.FOProperty
- mlreportgen.dom.FOProperties
- mlreportgen.dom.PageRef
- mlreportgen.dom.Heading1
- mlreportgen.dom.PageBreak
- mlreportgen.dom.Leader
- mlreportgen.dom.ListStyleType

#### Table of Contents: Add TOCs programmatically

In R2016a, you can create a placeholder for a table of contents in your DOM API report program. Use the mlreportgen.dom.TOC class to create the placeholder. For more information on creating a table of contents, see Create a Table of Contents.

#### Page Numbers: Create page number placeholders programmatically

In R2016a, you can create page number placeholders programmatically in Word and PDF reports. Previously you used only a template to create the placeholders. Updating a Word document replaces the placeholders with automatically generated page numbers. Closing a PDF DOM document similarly replaces the placeholders with automatically generated page numbers. For more information, see the mlreportgen.dom.Page class.

### HTML Text Component: Convert HTML to Word or PDF

The new HTML Text component allows you to include HTML markup in a Report Explorer report. If you specify Word or PDF as the report output type, the included HTML text is converted to Word or PDF. The conversion preserves the text's HTML-specified format. You can enter the HTML text in the component or specify a file or workspace variable that contains the text.

#### pptview Function: Open PowerPoint presentation or convert it to PDF

The pptview function opens a PPT presentation in PowerPoint on Windows or Apache OpenOffice™ on Linux. If you have Microsoft Office installed, you can also use this function to convert a PowerPoint presentation to PDF format.

#### **Cross-Platform PDF Viewer: View PDF with built-in viewer**

Previously, the Report Generator displayed PDF reports in Adobe Acrobat on Windows and in the PDF viewer you specified on other platforms. In R2016a, the Report Generator displays PDF reports on the same built-in viewer on all platforms. This change avoids the need for you to interact with a new Acrobat security dialog box on Windows every time you display a report. You also do not need to set up a viewer on Linux and Macintosh systems.

| <br> |  | <br>report's bookmarks. |  |
|------|--|-------------------------|--|
|      |  |                         |  |
|      |  |                         |  |
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|      |  |                         |  |

#### **Functionality Being Removed or Changed**

| Functionality                             | Result                                      | Use Instead                       | Compatibility<br>Considerations   |
|---|---|-----------------------------------|---|
| mlreportgen.dom.DOCXPage<br>Margins class | Still works for<br>Microsoft Word<br>output | mlreportgen.dom.Pa<br>geMargins   | To prevent your<br>code from being<br>output dependent,<br>replace instances of<br>DOCXPageMargins<br>with PageMargins. |
| mlreportgen.dom.DOCXPage<br>Size class    | Still works for<br>Word output              | mlreportgen.dom.Pa<br>geSize      | Replace instances<br>of DOCXPageSize<br>with PageSize.  |
| mlreportgen.dom.DOCXRawF<br>ormat class   | Still works for<br>Word output              | mlreportgen.dom.Pa<br>geRawFormat | Replace instances<br>of DOCXRawFormat<br>with<br>PageRawFormat.   |

| Functionality                         | Result                         | Use Instead  | Compatibility<br>Considerations   |
|---------------------------------------|--------------------------------|--|---|
| mlreportgen.dom.DOCXSect<br>ion class | Still works for<br>Word output | mlreportgen.dom.DO<br>CXPageLayout or<br>mlreportgen.dom.PD<br>FPageLayout | Replace instances<br>of DOCXSection<br>with<br>DOCXPageLayout.<br>If appropriate, add<br>a PDFPageLayout<br>object. |
| CurrentDOCXSection<br>property        | Still works for<br>Word output | CurrentPageLayout  | Replace instances<br>of<br>CurrentDOCXSect<br>ion property with<br>CurrentPageLayo<br>ut property.                  |

## R2015b

Version: 4.2

**New Features** 

# Programmatic interface for adding content to PowerPoint presentations

You can use the PPT (PowerPoint) API to add generated content to an existing PowerPoint presentation or to create a complete PowerPoint presentation programmatically. Your presentation can capture dynamic information from a MATLAB program without you making manual updates to the presentation. To format the layout and general look of your presentation, use template slide masters, style layouts, and styles. To format specific presentation content, you can use the PPT API format objects and properties.

For examples of PPT API code, see:

- Update Presentation Content Programmatically
- Create a Presentation Programmatically

### DOM API object display options

For Microsoft Word reports, you can use an mlreportgen.dom.Display object to specify whether to display an mlreportgen.dom.Text object. For HTML reports, you can use a Display object to specify the how to display DOM objects such as text, paragraphs, images, list items. For HTML reports, some display options are:

- Display as an inline or block element.
- Display the element similar to a table column, table caption, list element, or a few other elements.
- Suppress the display of the object.

For details, see mlreportgen.dom.Display.

#### DOM API horizontal rule

You can use an mlreportgen.dom.HorizontalRule object to specify a horizontal line to visually divide report content.

For details, see mlreportgen.dom.HorizontalRule.

### R2015a

Version: 4.1

**New Features** 

# Support for appending HTML string or file to a Word or PDF report generated by the Document Object Model (DOM) API

You can append HTML markup or the contents of a whole HTML file to a programmatic report written with the Document Object Model (DOM) API to:

• Convert an existing HTML report to a Microsoft Word or PDF report.

You can append the HTML markup for a report to a DOM report, which you can then generate in Word or PDF format. For example, you can use a MATLAB printf statement to generate an HTML report file, and then append that HTML file to a DOM report to generate a PDF or Word version of the report. Another example is to convert a report generated by Model Advisor from HTML to Word or PDF.

• Add content based on HTML markup.

You can append the HTML code for a report to a DOM report, using the HTML code as a building block in a DOM report that includes other report elements.

Perform these steps to append HTML to a DOM report.

- Ensure that the HTML code complies with HTML standards, such as including beginning and end tags (for example, and ). Consider using a utility such as HTML Tidy.
- 2 In a DOM report, use addHTML to append HTML code or addHTMLFile to append an HTML file to a document or document part.

For example, this DOM code creates a Word report that displays Hello World, based on the HTML code that you append to the report.

```
import mlreportgen.dom.*;
d = Document('MyReport','docx');
addHTML(d,'<b>Hello World</b>');
```

For information about using the addHTML or addHTMLFile methods, see mlreportgen.dom.Document.addHTML or mlreportgen.dom.Document.addHTMLFile.

#### Single-file output option for HTML reports generated by DOM API

To simplify display of an HTML report, you can specify that the DOM API generate the report as a single HTML file that includes the report images.

Specify 'html-file' for the type input argument for a Document or DocumentPart constructor. For details, see the mlreportgen.dom.Document reference page.

#### Simplified table formatting with DOM API

In R2015a, the DOM API includes several enhancements to simplify creating and formatting tables.

- You can use an mlreportgen.dom.ResizeToFitContents format object in the Style property for mlreportgen.dom.Table or mlreportgen.dom.FormalTable objects. The ResizeToFitContents to specifies whether to whether to resize columns to fit the widest content in a column.
- You can specify an mlreportgen.dom.Height format object in the Style property of an mlreportgen.dom.TableEntry object. The height of a row is the tallest height specified for a

table entry in that row. If no entries in the row specify a height, then the row height is specified by the Height property of the TableRow object.

• Table entries can now inherit the border formatting specified in a TableEntriesStyle property of mlreportgen.dom.Table or mlreportgen.dom.Table objects.

#### **Container for generating high-level HTML elements**

You can use the mlreportgen.dom.Container class to create high-level HTML elements not otherwise supported by the DOM API, such as div, section, or article.

You can also use a Container object to simulate format inheritance in Word reports.

For details, see mlreportgen.dom.Container.

#### Images and text for DOM report links

You can append text and images to mlreportgen.dom.ExternalLink and mlreportgen.dom.InternalLink objects.

For details, see mlreportgen.dom.ExternalLink.append.

### R2014b

Version: 4.0

**New Features** 

#### **Report formatting based on Word and HTML templates**

You can use Microsoft Word or HTML templates for reports that you create using:

- The Report Explorer. For details, see Generate a Report Using a Template.
- MATLAB report objects. See Document Object Model.

#### MATLAB report objects for creating report scripts

You can use the DOM (Document Object Model) API to create MATLAB programs to generate reports. The DOM API provides a set of objects for creating text, paragraphs, tables, images, lists, and other kinds of report content. When you create a report program, you can:

- Produce Microsoft Word, HTML, and PDF output using the same code.
- Specify formatting for report objects, such as color and bold for text objects.
- Use format objects (for example, Bold and FontFamily) to format report objects.
- Add MATLAB data directly to report objects (for example, a char array to a Text object).
- Use formatting and fixed content that is defined in a Word or HTML template.
- Create form-based reports that contain fixed and generated content.
- Modularize a report into parts for generation of reports that have repetitive elements of the same format.

For information about how to create report programs, see Document Object Model.

#### Fast file converter with reduced memory requirements

Generate template-driven reports much faster than in previous releases, without using Java memory.

To take advantage of these performance advantages, use one of these File format report options:

- HTML (from template)
- PDF (from template)
- Word (from template)

For details, see Report Generation Using Templates.

#### Zipped package option for HTML reports

You can use a zip file to package reports that use an HTML template. Zip file packaging compresses and consolidates the files. You can also package the HTML files as unzipped files or as both zipped and unzipped files.

#### Fill-in-the-blanks Word and HTML forms for generating reports

You can use the DOM (Document Object Model) report objects in a MATLAB program along with Word and HTML fill-in-the-blanks templates that contain fixed and holes to include generated content. The report program uses report objects to generate the variable information. See Form-Based Reporting.

### Color settings preferences in MATLAB Comparison Tool

You can now change and save your diff color preferences for the MATLAB Comparison Tool. You can apply your color preferences when comparing text files, MAT-files, variables, zip files or folders.

### R2014a

Version: 3.16 New Features

#### **OpenOffice** support

On Linux and Macintosh platforms, the report output appears in Apache OpenOffice if you:

- Set File format to either Word Document (RTF) or Rich Text Format
- Enable View report generation

In the MATLAB Report Generator Preferences, the **View command** preference default now enables viewing the report in OpenOffice for Linux and Macintosh platforms.

For details, see Report Output Format and Stylesheet.

# R2013b

Version: 3.15

### R2013a

Version: 3.14

## R2012b

Version: 3.13

### Non-English character set report formats

The MATLAB Report Generator provides basic PDF font support for:

- English
- Japanese
- Korean
- Russian (Cyrillic)

You can use the language font map to:

- Add or modify specifications for PDF font usage for supported non-English languages.
- Create PDF font support for a non-supported language.
- Change the default English fonts, if you do not specify a style sheet.

The language font map specifications indicate what font to use on a specific platform (for example, Windows) for basic report elements such as body text. For details, see PDF Fonts for Non-English Platforms.

### R2012a

Version: 3.12 New Features

**Bug Fixes** 

Version History

#### **Enhanced Table Components**

You can use the following new components to create and format a table:

- Table
- Table Column Specification
- Table Header
- Table Body
- Table Footer
- Table Row
- Table Entry

Formatting options that the Table component and its child components support include:

- Text color and alignment
- Row background colors
- Inclusion of images
- Inclusion of hyperlinks
- Table cells spanning columns and rows

You can conditionally control the content or format of a table.

For more information, see Table Formatting Components.

### **Version History**

Releases earlier than R2012a included a different Table component. Starting in R2012a, that component is now called the Array-Based Table component.

The Array-Based Table component produces the same output, and has the same properties, as it did when it was called the Table component. The Array-Based Table component converts a rectangular array into a table and inserts the table into the report.

If a report that was created in a previous release already includes a Table component, the output is the same as in previous releases. To change property values for that component in R2012a or later, use the Array-Based Table dialog box.

#### **Title Page Formatting Enhancements**

For PDF and HTML reports, you can use the Stylesheet Editor to position title page elements (for example, title, copyright, and images) anywhere on the front or reverse side of the title page in any order. You can specify the size, color, weight, and slant of text elements.

For details, see Modify Title Page Properties.

#### **Text Component Supports Subscripts and Superscripts**

You can include a subscript or superscript in a paragraph, using a Text component.

# R2011b

Version: 3.11 New Features

#### Full Page Image Option for PDF Reports

To display full-page images in PDF reports, set the **Paper orientation** property to the new Full page image (PDF only) option. The following components provide this new option:

- Axes Snapshot
- Figure Snapshot

The Image component has a **Full page image (PDF only)** check box, which provides the same functionality as the Full page image (PDF only) property option.

# Include Legal Notice, Report Creation Date, and Copyright on the Title Page

The Title Page component includes a new **Display legal notice on title page** check box. Use this option to include the legal notice, report creation date, and copyright information on the title page of reports that use PDF or Microsoft Word format.

# R2011a

Version: 3.10

New Features

#### **Improved PDF Pagination**

Reports generated using PDF output format produce better pagination, including:

- Section titles are on the same page as the associated text (now section titles cannot appear as orphans at the bottom of a page).
- Captions are on the same page as their associated images.

#### **Export XML Comparison Results to the Workspace**

You can now export XML comparison results to the MATLAB base workspace. You can use the results data for tasks such as further analysis or incorporating into different reports.

For details, see Export Results to the Workspace in the MATLAB Report Generator User's Guide.

# R2010b

Version: 3.9

**New Features** 

#### **Complete Text Included in Reports**

Any component that displays text in reports now displays the whole text, without any truncation.

### Linking to MATLAB Commands

Using the Link component, in a report you can now include a link that executes a MATLAB command.

#### **Insert Variable Component Enhancements**

The Insert Variable component includes several new options for specifying the content that the component displays and the table layout that the component uses.

#### **Nest Setup File Component Supports Relative Links**

The Nest Setup File component includes a new Link to external report is relative option, which makes the link to the nested report a relative link. This feature facilitates including a report on a Web site.

#### Enhanced Error Handling Code for Evaluate MATLAB Expression Component

The Evaluate MATLAB Expression component includes enhanced error handling code that you can easily customize (for example, the error handling code can stop report generation, with or without displaying an exception). The default error handling code now supports MATLAB class exception handling, using the evalException variable instead of lastError.

#### **Transposable Columns for Handle Graphics Summary Table Component**

For the Handle Graphics Summary Table component, use the new **Transpose table** check box to change the summary table rows into columns in the generated report. Specifying this option puts the property names in the first column and the values in the other columns.

#### Additional Date Format for Title Page Component

The Title Page component includes an additional date format for the **Include report creation date** field: yyyy/mm/dd.

#### **Improved XML Comparison Report**

Reports for comparisons of XML files have a new faster user interface, with changed parameters displayed in a separate panel for easier review. The enhanced report now has color highlighting for new and changed items.

For details, see Explore the XML Comparison Report in the MATLAB Report Generator User's Guide.

## R2010a

Version: 3.8

# R2009b

Version: 3.7 New Features Bug Fixes

Version History

#### Style Sheets and Style Sheet Data Items Now Alphabetized

When you create or modify a style sheet, the Report Explorer **Options** pane now alphabetically sorts the style sheets and the data items in each style sheet category.

#### **Version History**

The order in which a style sheet or data item appears in a list may have changed from the order used in previous releases.

#### Improved Images in Word and RTF Reports on Windows Platforms

To provide better graphics quality in reports using the Word document format or RTF (Rich Text format) on Windows platforms, the default format for Handle Graphics<sup>®</sup> images is now Windows metafile format. The default had been black and white TIFF.

You can control the image format using the MATLAB preferences or the MATLAB Report Generator preferences, or from snapshot components such as the Axes Snapshot component.

#### **Version History**

To change the image format back to the previous default of black and white TIFF, change the preferences.

# Required Products Information for MATLAB/Toolbox Version Number Component

The MATLAB/Toolbox Version Number component now supports options to display information based on whether a Simulink model or Stateflow chart requires a MathWorks product. This feature does not apply to reports on MATLAB or toolbox code.

#### Adobe Illustrator Image File Format No Longer Supported

#### **Version History**

The **Image file format** options for the Axes Snapshotand the Figure Snapshot components no longer include Adobe Illustrator. If you wish to integrate a MATLAB Report Generator image into Adobe Illustrator, specify a image file format supported by Adobe Illustrator, such as PDF, and then open the image file in Adobe Illustrator.

#### **Navigation Controls for XML Comparison Report**

The XML comparison report has new navigation controls to step through differences in the report. You can use the toolbar buttons or the **XML** menu to move to the next or previous group of changes.

For details, see Explore the XML Comparison Report in the MATLAB Report Generator User's Guide.

### R2009a

Version: 3.6

No New Features or Changes

## R2008b+

Version: 3.5 New Features

### **Comparison of XML Files**

New comparison report for pairs of XML files.

For details, see Comparing XML Files in the MATLAB Report Generator documentation.

See also the following new example: Comparing XML Files.

## R2008b

Version: 3.4

### R2008a

Version: 3.3

# R2007b

Version: 3.2.1

**New Features** 

#### Text Formatting Options for Title Page, Text, and Paragraph Components

This release includes new text formatting options for the Title Page, Text, and Paragraph components.

For more information, see the MATLAB Report Generator documentation.

### R2007a

Version: 3.2

## R2006b

Version: 3.1

### R2006a+

Version: 3.0.1

### R2006a

Version: 3.0

**New Features** 

**Bug Fixes** 

Version History

#### **User Interface and Performance Enhanced**

The Report Explorer interface has a number of enhancements. The **View** menu has commands to increase and decrease font size and to show the message window if it is not displayed.

MATLAB Report Generator performance has improved. Reports are often generated more rapidly and with less chance of running out of memory.

#### XML File Format Changed

The format of XML files has changed in V3.0 (R2006a).

### **Version History**

In V3.0 (R2006a), Report Explorer and the rptconvert command can convert XML files produced by the report generation process in V2.3.1 (R14SP3) and previous versions. However, in V2.3.1 (R14SP3) and previous versions, Report Explorer and the rptconvert command cannot convert XML files produced by the report generation process in V3.0 (R2006a).

# **R14SP3**

Version: 2.3.1

**New Features** 

#### **Style Sheets Modify PDF Headers and Footers**

This release adds support for modifying the content of headers and footers in PDF reports. This feature is implemented using style sheet cells and cell groups. A cell group contains one or more style sheet cells. A style sheet cell is a set of values that determine the content of a particular portion of the header or footer for a page.

Two cell groups, **Header Content** and **Footer Content**, are available for PDF reports. You can use templates to specify XML code that defines the content for a header or footer.

### R14SP2+

Version: 2.3 New Features Bug Fixes

#### **Stylesheet Editor**

You can use the Stylesheet Editor to customize the formatting of your HTML, PDF, and Word documents. For example, you can specify fonts, paper layout, table presentation, as well as other characteristics of your final report.

Customizing reports by editing style sheets gives you the flexibility to create reports that conform to corporate style guidelines and requirements.

To open the Stylesheet Editor, right-click **Report Generator** in the Outline pane of the Report Explorer and then click **Edit Stylesheet** on the shortcut menu.

For more information about using the Stylesheet Editor, see Create Custom Stylesheets in the MATLAB Report Generator documentation.

### **Table Cell Spanning**

You can create advanced table layouts for property tables. The advanced layouts include cells that span multiple rows or columns.

#### Generating Microsoft Word Documents as .doc Files

You can generate reports that are saved as Microsoft Word documents with the .doc extension. You can also convert XML source files that are generated by the report generation process to .doc files.

The reports you create are easier to distribute via e-mail, to share with others, and to manage.

You must have Microsoft Word software installed to use this feature, and you must be running the MATLAB Report Generator software on a Microsoft Windows system.

To use this feature select **Word Document** from the **Stylesheet** drop-down list in the Convert Source File dialog box.

#### **Improved Graphical User Interface**

This version of the MATLAB Report Generator software has the following changes and improvements to the graphical user interface:

- The File Converter has a **Source File** drop-down list. Click **Browse** to navigate to a folder to select a source file. The default folder is the current folder.
- In the File Converter, you can select a style sheet from the drop-down list and click **Edit** to open the Stylesheet Editor.
- An improved mechanism detects and displays errors that occur when you attempt to add a component that makes the style hierarchy invalid. Users of earlier versions may notice that warnings are now issued for components that had no problems in earlier versions. In this release, warning messages contain instructions about how to fix the problem.
- The Figure Screen Capture component has been improved to capture window decorations such as menus, title bars, and toolbars.