



## Google Desktop SDK

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### Gadget Designer

The Google Desktop Gadget Designer is an integrated development environment (IDE) for desktop gadget design that lets you quickly prototype or modify your gadget's UI and test its performance. This document assumes familiarity with the principles, objects, and interfaces described in the [Creating a Gadget](#) document. Here, we only explain how to use the Designer and do **not** go into any detail about object or property types, design guidelines, how desktop gadgets are packaged, how to write associated scripts, etc.

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### Overview of Designer's Gadget Creation Process

The following summarizes the steps you take when creating a gadget using the Designer. Links go to the document section that describes the step in more detail.

1. Launch Google Desktop Gadget Designer by double-clicking the file `api/designer/designer*.exe`, relative to the folder where you unzipped the [Google Desktop SDK](#). In US English distributions, the name of the executable file is `designer_en.exe`.
2. Click [File > New Project...](#). Choose a location for your project's folder, enter a name for your project's folder, and click `Save`.
3. In the Project Explorer, open each language folder (for example, `en`) and double-click `strings.xml`. Update the text strings to name and describe your gadget. Add any other user-visible strings your gadget needs.
4. Click the `main.xml` tab, and then [drag and drop the UI elements](#) that make up your gadget's UI into the Display Pane.
5. Add any necessary UI image files to the project. To do this, you need to use an external file browser, such as Windows Explorer. Add the appropriate files to the project folder, or write over existing files' content.
6. Select each UI element in turn and [set its property and event values](#) to ones appropriate for your gadget. Type `Ctrl+S` to save your work.
7. Optionally, click [Project > Add Options View](#) to add an options view (to be defined in `options.xml`) to your gadget. Repeat steps 4-6, this time for the options view.
8. [Open the main.js file](#) (or create and open a different script file if you prefer) and write the functions called by your UI element events. Type `Ctrl+S` to save your work.
9. Test your gadget:
  - a. Click the [Preview](#) top tab (or choose `View > Preview Window`) to display your fully functional gadget in the Display Pane.

- b. Choose [View > Refresh](#) to update the gadget.
  - c. Run a test on your gadget by trying to use it in some way.
  - d. If an error occurs, try to fix it in the code or UI (including properties). Save your fixes, then click [View > Refresh](#) to reset the gadget to its initial state. Retry the test and repeat until it succeeds.
  - e. If no error occurred, choose [View > Refresh](#) to reset the gadget to its initial state. Continue running tests until you're satisfied that your gadget works as you intended it to.
10. Choose [Project > Build Package](#), which zips up all the files in your project and puts them in a `Project_name .gg` file.
  11. Distribute your gadget by submitting the `.gg` file at <http://desktop.google.com/pluginssubmit>

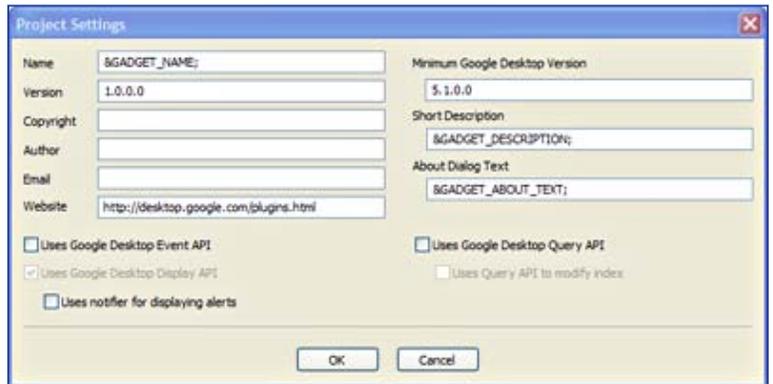
Remember to save your work by entering `Ctrl+S` or choosing `File > Save` often, and particularly before starting to test your gadget.

**Note:** Gadget Designer does not have a way of adding files to a project or its folder or subfolders. While `File > New Project...` creates a number of files there as initially shown in the [Project Explorer](#), you cannot add or delete files from the gadget's folder from within Gadget Designer.

To add or delete files from the project folder, use any external file browser tool, such as Windows Explorer. This is also how you have to overwrite the content of any files created by Gadget Designer, such as `icon_large.gif`.

## Project Settings Dialog

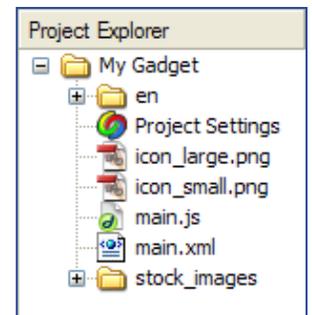
To bring up the Project Settings dialog, either double-click `Project Settings` in the `Project Explorer` or choose `Settings...` from the `Project` menu. In this dialog, you enter basic information about your gadget that the Designer uses to write its `gadget.gmanifest` file. (Click for information about the file's contents and format.)



## Project Explorer

The Project Explorer shows the directories and files that will be zipped up to create the `gadget_name .gg` file used to distribute your gadget. The top-level folder has the name you gave the gadget in the `Project Settings` dialog. It initially contains the following directories and files.

- `en` folder: This folder contains the `strings.xml` file where you and the Designer store the US English version of any strings used in your gadget's UI. See [Internationalization](#) for details.
- `Project Settings`: Double-click this to bring up the `Project Settings` dialog.
- `icon_large.gif`: File containing the large icon image associated with your gadget. You should replace this file with one containing an appropriate large icon for your project.
- `icon_small.gif`: File containing the small icon image associated with your gadget. You should replace this file with one containing an appropriate small icon for your project.
- `main.js`: A default JavaScript file into which you can write functions that implement your gadget's behavior and event handling. Double-clicking this opens the file in the `Display Pane` for editing, and adds a tab for that display to the top of the `Display Pane` area. After editing the file, use either `File > Save` or `Ctrl+S` to save your edits.
- `main.xml`: The XML file that defines your gadget's UI layout/view. Double-clicking this entry effectively presses the `main.xml` tab on top of the `Display Pane`, and shows `main.xml`'s contents in the `Display Pane`. You cannot edit the source code for this file in the `Display Pane`.
- `stock_images` folder: Contains pre-loaded UI component image files, such as buttons and checkboxes.

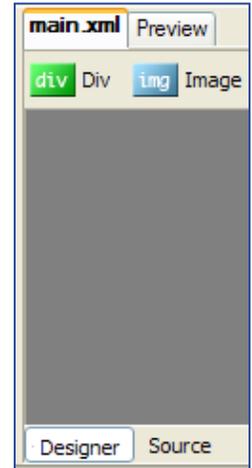


Remember that to add, delete, or copy over content in files shown in the Project Explorer, you have to use an external file browser, such as Windows Explorer. The Project Explorer should be thought of as a visual display of the contents of your gadget's folder, not a way of manipulating those contents.

## Tabs

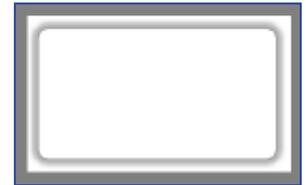
Initially, there are four tabs around the window's central Display Pane area, two at the top and two at the bottom. We've already seen how a `main.js` tab can be added to the top by opening the file from the [Project Explorer](#). Later on, we'll see other ways how tabs may be added to or removed from the top.

- Top tabs:
  - `main.xml`: When selected, Designer shows the contents of your gadget's `main.xml` file in the Display Pane area. Depending on which bottom tab is selected, it shows either the gadget's UI as defined by the XML contents or the actual (though non-editable) XML code.
  - `Preview`: Displays your gadget's UI *and* executes any scripts or functions associated with UI elements. Essentially, this lets you run and test your gadget outside of the Sidebar and Google Desktop. For example, if your gadget's script responds to `view.onopen` events by changing the gadget's background color, you can see that color when in `Preview` mode.
- Bottom tabs (visible only when an XML tab is selected):
  - `Designer`: Show the actual gadget UI.
  - `Source`: Show the XML code that defines the gadget's UI; you can't edit the XML code in this view.



## Display Pane

The central display area initially consists of a white rectangle containing a default background image, surrounded by a larger grey rectangle. The white rectangle shows the current appearance of your gadget and represents the overall `view` object. You can change the overall `view` object's properties, such as its size. You can also change or remove the background image.



## Drag and Drop UI Objects



This is how you initially define your gadget's UI. Just click your mouse over any one of these UI elements and drag it down to the position in the white display area where you want it to appear in your gadget. Release the mouse button, and that UI element is now both in the gadget and selected. The selected UI element's properties appear in the Properties Pane to the right. Just click a UI object in the display area to make it the currently selected UI object.

The UI objects have all the properties, methods, and events described in the [Gadget API Reference](#). Remember that the objects shown here all inherit from the `basicElement` object, so check there for descriptions of any properties or events that aren't specified for the individual objects. The UI elements are:

- `Div`: Used to set the background color of the gadget or one of its UI elements. Also provides a hook for programmatically inserting or removing UI elements from its containing element. (See [div](#))
- `Image`: An image to display in the view. (See [img](#))
- `Button`: A push button. (See [button](#)).
- `Edit`: An area where the gadget's user can edit the text content. (See [edit](#))

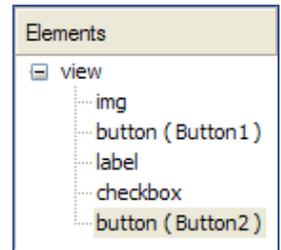
- **Checkbox:** A two-state button. (See [checkbox](#))
- **Link:** An HTML link. (See [a](#))
- **Label:** Uneditable text. (See [label](#))
- **Content:** A container of content items. (See [contentarea](#))
- **List Box:** An area containing list items. (See [listbox](#))
- **Progress Bar:** A representation of progress made. (See [progressbar](#))

## Elements Pane

Once you have one or more UI elements in the Display Pane, you can select an element either by:

- Single-clicking it in the Display Pane.
- Clicking its name in the Elements Pane.

When an object is first put in the Display Pane, it appears as a child of the `view` element in the Elements Pane with only its type as an identifier. For example, if you drag the `Button` element into the Display Pane twice, the Elements Pane shows two items, both designated by `button`. If you give an element a name, for example `Button1`, it appears in the Elements Pane in the form `button (Button1)`.



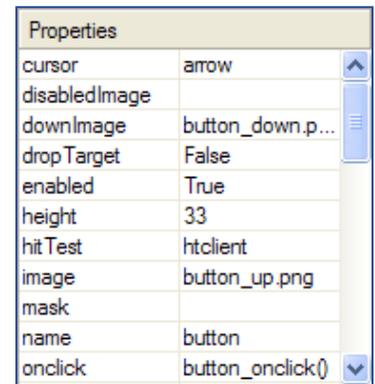
Note that the only way to get access to the `view` object's properties and events is to click the `view` entry in the Elements Pane.

## Properties Pane

The Properties Pane shows the property names and values for the currently selected UI object. This is also where you can edit an object's property values and what functions are associated with its events.

To edit a property value, just click its name or value. Your input options depend on the property type.

- If it's a boolean property, the value changes to have a small pulldown menu with `true` and `false` values. Click the value you want for the property.
- If it's a numeric or text valued property, just type the new value in the value field and press `Enter`.
- Some property values, such as `mask` or a `div`'s `background`, can be either a string or a file. For this property type, a small box with 3 dots appears. If you click the box, an `Open File` browser window appears so you can choose a file to be the property's value. If you want a string value instead, just type it into the value field and press `Enter`.



The display changes, if needed, to reflect the UI object's new property value.

Note that some properties, such as `cursor`, have a defined and limited set of allowed values. The Designer does not check for whether your entered value is part of the property's allowed value set. However, when you try to display your view, this will cause an error.

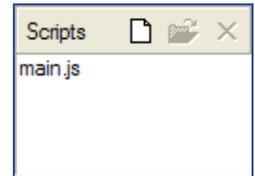
Also, note that the overall `view` object, accessible by selecting it in the Elements Pane, has its own set of properties and events. If, for example, you want to change the size of the view itself, click `view` in the Elements Pane and then change the `height` and `width` values in the Properties Pane.

For events, just enter the name of a function that's defined in a script file included in the gadget. For example, assume you define a function in `main.js` to handle clicks on a button. To associate the function with the event, set the button's `onclick` property to the function's name — for example, `button_onclick()`.

## Scripts Pane

This pane shows any script files used by the gadget in its currently displayed XML file. These will be zipped up

with the UI XML and image files when you finish designing your gadget. By default, it first contains only an `main.js` file, but you can add other script files and/or remove `main.js`



To add a script file to the Scripts Pane, click the sheet of paper icon at the left of the three icons. It opens a file browser set to show only script files, starting from your gadget's folder. Find the script file you want to add and click `Open`. Note that the script file must already exist before you can add it here. Unlike `File` commands, this copies the script file into the project folder and causes Designer to show it in the Project Explorer. It also adds a line `<script src="filename" />` to whatever XML file is currently active in the Display Pane. For example, if `main.xml` is active, the `<script src="filename" />` line is added *only* to `main.xml` and *not* to `options.xml`.

In the Scripts Pane, once you have selected one of its script files by clicking it, you can:

- Open the file for editing by clicking the middle open file icon. This adds a new top tab labeled with the filename. It also picks that new tab, changing the Display Pane to an edit pane for the file's contents.
- Remove the file from the Scripts Pane by clicking the right X icon. Note both that the script is removed immediately without a confirmation dialog and that the script's file is still present in the Project Explorer and will be zipped up as part of the gadget unless you delete it from the gadget's folder as well, via an external file browser tool.

An important point is that the Scripts Pane is not showing what script files are stored in the project folder, but rather what scripts are used in the view-defining XML file currently on display.

If you look at `main.xml` right after its creation via `File > New Project...`, it has a line `<script src="main.js" />` in its `<view>` element. `main.js` is also listed in the Scripts Pane, as well as the Project Explorer.

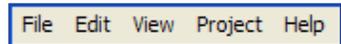
If you remove `main.js` from the Scripts Pane, what happens is that the `<script src="main.js" />` disappears from the `<view>` element, meaning your gadget's view no longer knows about any functions defined in the file. The file itself is still present in the project's folder, and must be removed from it via an external file browser program (if you want the file removed); otherwise it will be zipped up into the `.gg` file with the other project files.

Note that the order of script files is important. If code in a script file `A.js` refers to code in a script file `B.js`, then `B.js` must be before `A.js` in the list of script files. To change the order of script files, edit the appropriate `.xml` file using an external editor.

Finally, note that by default when creating a new project, `main.xml` automatically contains the `<script src="main.js" />` line and `main.js` contains a definition for the `view_onOpen()` function that `main.xml` uses. If you delete `main.js` from the Scripts Pane without providing a substitute function definition or rewriting `main.xml` so that it no longer uses `view_onOpen()`, you get an error.

## Menu Commands

The following menus are at the top of the Designer window: `File`, `Edit`, `View`, `Project`, and `Help`. We'll look at each of these in detail.



## File Menu Commands

`File` has the following menu commands:

- `New Project...`: Opens a dialog for you to specify the new project's location and name. When you click `Save`, the new project appears in the Designer window. `Ctrl+Shift+N` is the keyboard equivalent.
- `Open Project...`: Closes the current project (offering you a chance to save it, if necessary) and opens a file browser set to show `.gg` and `.gmanifest` files.

Usually, you select the `.gmanifest` file of the gadget you wish to modify. If you instead select a `.gg` file, you'll be prompted about whether to extract the gadget to a folder so it can be opened. Click `Yes` to bring up a dialog that lets you choose the folder that will contain the project folder. Then click `OK` to extract the gadget.

The gadget you select becomes the current project and appears in the Designer window. `Ctrl+Shift+O` is the keyboard equivalent for `Open Project...`

File	Edit	View	Project	Help
New Project...				Ctrl+Shift+N
Open Project...				Ctrl+Shift+O
Close Project				
Open...				Ctrl+O
Save				Ctrl+S
Close				Ctrl+F4
Exit				Alt+F4

- `Close Project`: Closes the current project, leaving the Designer window blank except for the top Menu Commands. You will be prompted to save any modified files.
- `Open...`: Opens a file browser set to show text files, including XML and script files. Selecting and opening a file creates a new top tab

labeled with the filename, as well as selecting the new tab and showing the file's contents in the Display Pane area. Note that the new file is not added to your gadget's folder as shown in the Project Explorer, as the file is not in the project folder. To add a file to the project folder, use an external file browser, such as Windows Explorer. `Ctrl+O` is the keyboard equivalent.

- **Save:** Saves any open gadget files. This needs to be done whenever you edit a file or change a UI object's properties. `Ctrl+S` is the keyboard equivalent.
- **Close:** Immediately closes whatever file is currently visible in the Display Pane and removes the file's top tab. The file itself is still present in the Project Explorer. `Ctrl+F4` is the keyboard equivalent.
- **Exit:** Puts up a popup asking if you want to save changes to your `main.xml` file. After you click `Yes` or `No`, it shuts down Gadget Designer. `Alt+F4` is the keyboard equivalent.

In addition, any recent projects appear in a menu section just above the `Exit` command. Clicking a recent project opens it in the Designer.

## Edit Menu Commands

Edit has the following menu commands:

- **Undo:** Reverts the action you took in the Designer, such as changing a property value, moving a UI object, creating a new object, etc.. You may do multiple consecutive undoes to backtrack over a series of operations. `Ctrl+Z` is the keyboard equivalent.
- **Redo:** Greyed out unless you've just done an undo operation, this redoes the last undone operation. If you've done multiple consecutive undoes, you can do multiple consecutive redoes to restore the Designer state. `Ctrl+Y` is the keyboard equivalent.
- **Cut:** Standard cut operation, which works on selected UI elements in the Display Pane. `Ctrl+X` is the keyboard equivalent.
- **Copy:** Standard copy operation, which works on selected UI elements in the Display Pane. Note that when you copy a UI object, it makes an exact copy including all property values. For example, if you copy a button named `Button2`, the copy will also have the value `Button2` for its name property. The two buttons will appear identical in the Elements Pane. `Ctrl+C` is the keyboard equivalent.
- **Paste:** Standard paste operation, which works on selected UI elements in the Display Pane. `Ctrl+V` is the keyboard equivalent.
- **Delete:** Standard delete operation, which works on selected UI elements in the Display Pane. `DEL` is the keyboard equivalent.
- **Find...:** Searches for the specified string in the source file you're currently viewing. `Ctrl+F` is the keyboard equivalent.
- **Replace...:** Searches for a string and replaces it with another string. `Ctrl+H` is the keyboard equivalent.
- **Go To Line...:** Moves the cursor to the specified line in the source file you're currently viewing. `Ctrl+G` is the keyboard equivalent.
- **Preferences...:** Lets you specify startup preferences.

Edit	View	Project	Help
Undo			Ctrl+Z
Redo			Ctrl+Y
Cut			Ctrl+X
Copy			Ctrl+C
Paste			Ctrl+V
Delete			Del
Find...			Ctrl+F
Replace...			Ctrl+H
Go To Line...			Ctrl+G
Preferences...			

## View Menu Commands

View has the following menu commands:

- **Refresh:** Refreshes the various objects and panes in the Designer window. Most importantly, it re-initializes all the gadget's global variables and property values and any global scope code is now executed from the beginning. Essentially, it resets the gadget to its original state, which is very useful when testing your gadget. `F5` is the keyboard equivalent.
- **Next Tab:** Effectively clicks the top tab to the right of the currently selected tab. If the last tab is currently selected, it cycles back to clicking the first tab. `Ctrl+Tab` is the keyboard alternative.
- **Previous Tab:** Effectively clicks the top tab to the left of the currently selected tab. If the first tab is currently selected, it cycles back to clicking the last tab. `Ctrl+Shift+Tab` is the keyboard alternative.
- **Debug Console:** Opens a debug console at the bottom of the Designer window (taking up space previously used by the usual window contents; you may want to resize the window to restore the other contents to their previous size). Depending on which checkboxes are selected, debug, info, warning, and/or error messages from previewing/running your gadget appear here. You can also choose whether or not the messages should include when they happened. To make the Debug Console invisible, click the `Debug Console` menu item again.
- **Preview Window:** Changes the Display Pane so that it displays your gadget in a running mode, allowing you to test the UI and see it work. Equivalent to clicking the `Preview` top tab.

View	Project	Help
Refresh		F5
Next Tab		Ctrl+Tab
Previous Tab		Ctrl+Shift+Tab
Debug Console		
Preview Window		
Home Page		Alt+Home

- Home Page: Shows the [Gadget Designer home page](#) in the Display Pane. Alt+Home is the keyboard equivalent.

## Project Menu Commands

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Project has the following menu commands:

- Settings...: Brings up the [Project Settings](#) dialog. F3 is the keyboard equivalent.
- Add Options View adds an options.xml file to the project, an options.xml tab at the top, and greys out Add Options View since you can define only one options.xml file per project. After clicking this, you'll need to create and test the options view and its UI by the same means you used for the main view.
- Build Package: Zips up the files for your gadget and puts them in a [Project\\_Name.gg file](#) for distribution. F7 is the keyboard equivalent.

Project	Help
Settings...	F3
Add Options View	
Build Package	F7

## Help Menu Commands

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Help has the following menu commands:

- User Guide: Opens this document in an external window.
- About: Displays a popup with limited information about the Designer.

Help
User Guide
About