

Siftables Emulator

Deployment and Usage

Singularity Software

April 27, 2012

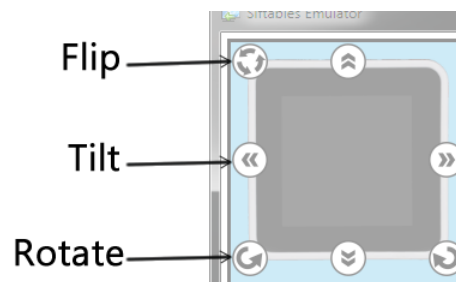
1 Install the emulator

Siftables Emulator is a cross-platform Silverlight application. To install it for the first time:

1. Build the project using the Release configuration in Visual Studio.
2. Open [project root]/Siftables/Bin/Release/SiftablesEmulator.html in a Silverlight-compatible web browser.
3. When the app loads, right click anywhere and choose "Install Siftables Emulator onto this computer..."
4. Follow the install wizard, choosing your preferred shortcut locations.
5. Siftables Emulator should launch automatically. If not, it can be launched from wherever you opted to install shortcuts in the previous step.

2 Walkthrough: Interact with the emulator

The following reference maps actions on the physical Sifteo Cubes to their digital equivalents.



If you want to...	
Flip the cube	Click the flip button
Tilt the cube	Click the tilt button for the direction to tilt [left, up, right, down]
Rotate the cube	Click the rotate button for the direction to rotate [counterclockwise, clockwise]
Shake the cube	Drag the cube horizontally back and forth rapidly
Press the cube	Click the virtual screen

If you click...	
Snap to Grid	The emulator rearranges the cubes into a 4-cube wide grid based on order of cube creation
Load a Program	The emulator opens the Load dialog for running a Siftables application DLL
Zoom	The emulator zooms the canvas in (right) or out (left) to a maximum of 2x zoom
# of Cubes	The emulator changes the number of cubes available on the emulator “screen” to a maximum of 9, minimum of 1 cubes

3 Program for the emulator

3.1 Application Programming Interface

Siftables Emulator can be programmed using the official Sifteo API available at <http://developer.sifteo.com/>. The team believes that our implementation of the API outlined there is complete and is functionally on par with the native Sifteo.dll provided for use with the physical Sifteo cubes. This implementation is a combination of work done by the team specifically for Silverlight and the Siftables project and work done by the Sifteo team. The latter part comes in the form of SifteoExtensions.dll, a partial version of Sifteo.dll decompiled and retargeted to Silverlight with Sifteo’s permission.

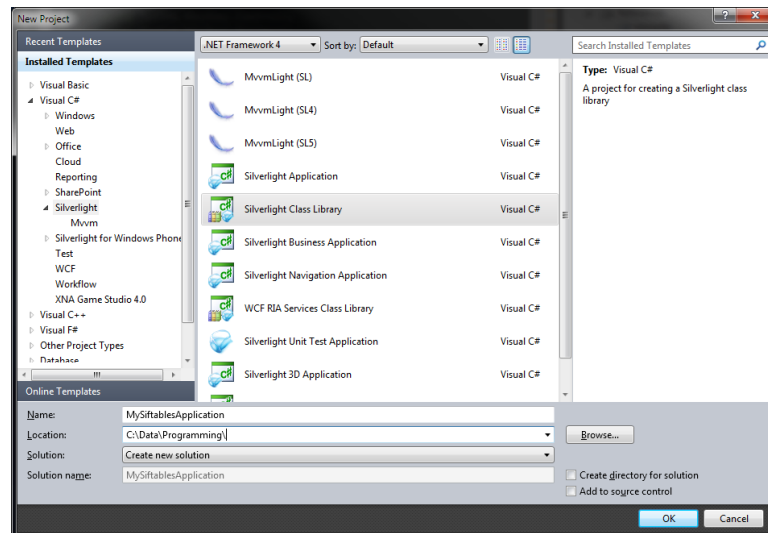
3.2 Target the emulator

To target an application targeted for Sifteo Cubes to run in Siftables Emulator, make the following 2 changes:

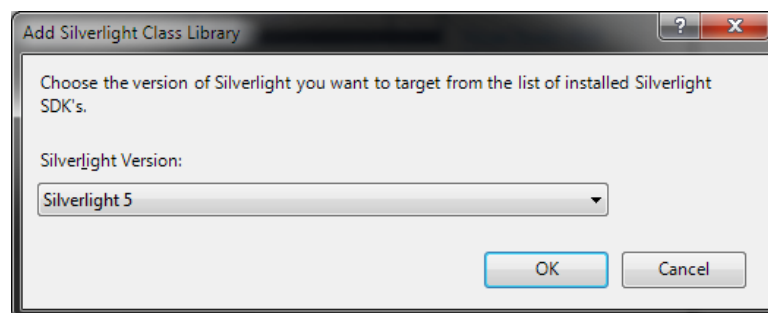
1. Create a new Silverlight Application Project and add your existing project files to it.
2. Add references in that project to [project root]/Siftables/Bin/Release/Sifteo.dll and /SifteoExtensions.dll. Note that those DLLs will only exist if you have already built the Release configuration of the emulator as specified in the Deployment/installation instructions.

4 Walkthrough: Prepare and run an application

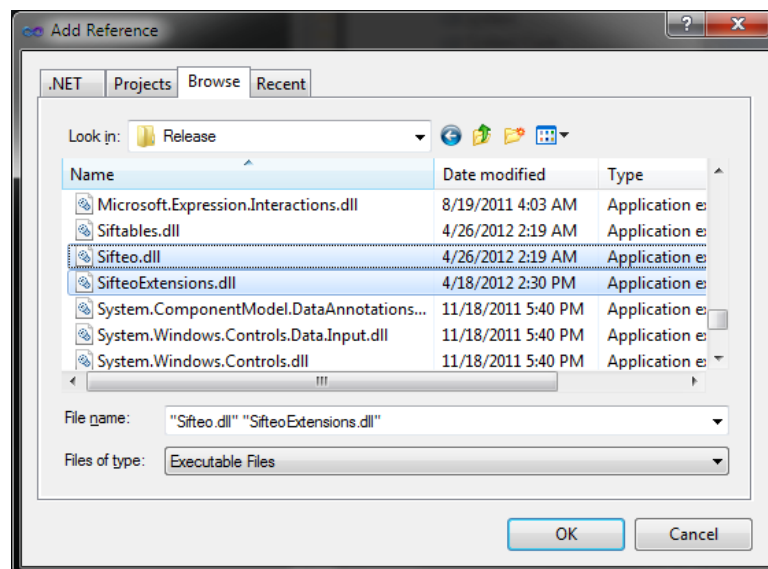
1. Create a new project for the application.
 - (a) Select the Silverlight template group in the left pane, then select Silverlight Application in the center.
 - (b) Give the application a name and a location. We recommend not creating a directory for the solution.



(c) Ensure that you use Silverlight version 5.



(d) Add Sifteo.dll and SifteoExtensions.dll to the project references.



2. Build a blank runnable application.

- (a) Create a new class.
- (b) Have it use the Sifteo namespace.
- (c) Have it extend BaseApp.

```

13 namespace MySiftablesApplication
14 {
15     public class MySiftablesApplication : BaseApp
16     {
17
18     }
19 }

```

(d) Build the solution. Note the location of the DLL in Output.

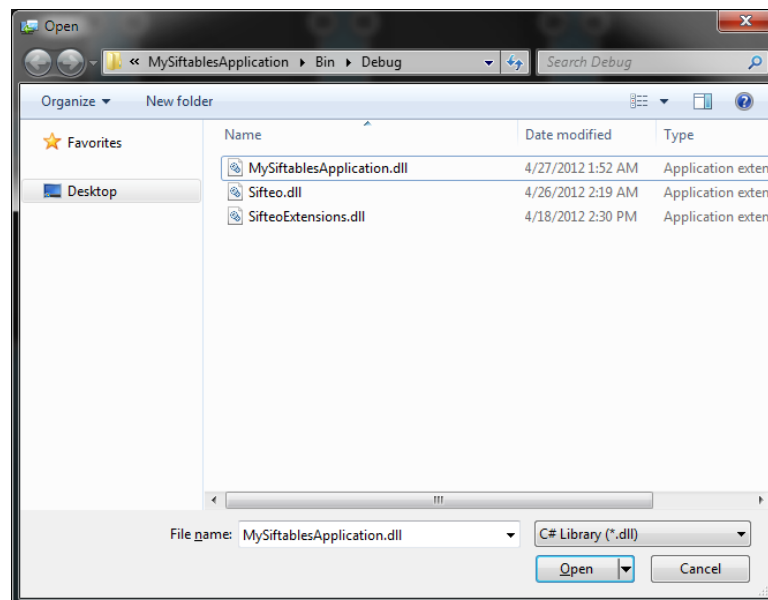
```

Output
Show output from: Build
----- Build started: Project: MySiftablesApplication, Configuration: Debug Any CPU -----
MySiftablesApplication -> C:\Data\Programming\MySiftablesApplication\Bin\Debug\MySiftablesApplication.dll
***** Build: 1 succeeded or up-to-date, 0 failed, 0 skipped *****

```

3. Run the blank application in the emulator.

- (a) Launch the emulator.
- (b) Click "Load A Program".
- (c) Select the DLL built in the previous step.
- (d) Click Open.



At this point, you have a fully runnable Siftables application. It doesn't do anything... but that part is up to you!

5 Walkthrough: Respond to cube events