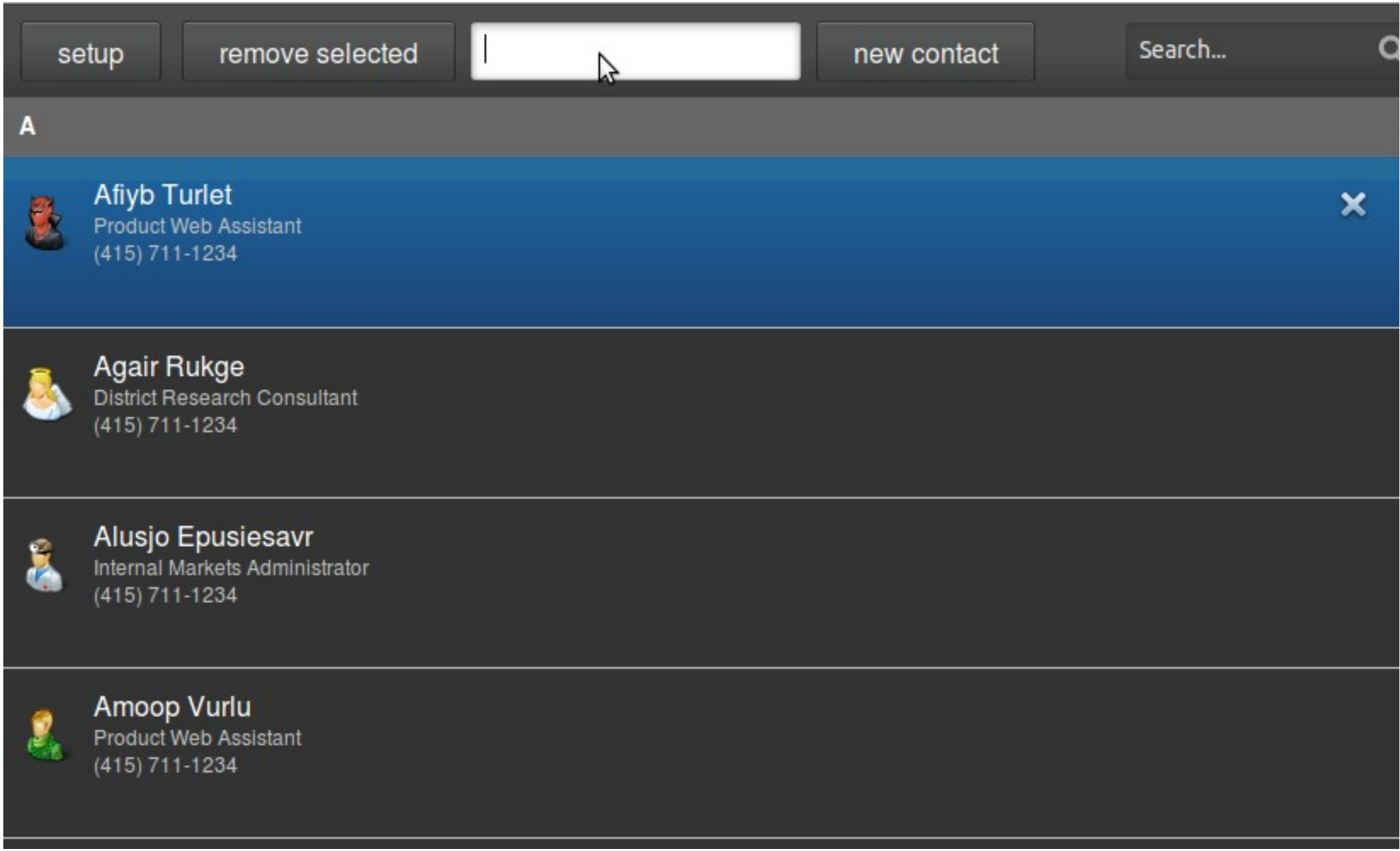
How to Develop Large Scalable JavaScript Applications

By – Narendra Sisodiya

Split your application into multiple **Modules**


setup
remove selected
new contact
Search...
A
Afiyb Turlet
Product Web Assistant
(415) 711-1234
Agair Rukge
District Research Consultant
(415) 711-1234
Alusjo Epusiesavr
Internal Markets Administrator
(415) 711-1234
Amoop Vurlu
Product Web Assistant
(415) 711-1234


Toolbar Module
Setting Module
AddNewContacts Module
Search Module
Contact Area Module
ContactList Module

Rules

Each Module developed separately.

Each Module can be loaded/unloaded from Page

Rules

You can load any module and test it without loading others.

If (at run time) one module is fails to load. Other modules should work. There should be minimum side effect in such case

What does a module do ?

It does its work perfectly. Think like a two IFRAMEs, we can load any type of web page, both work independently.

Each module will be given one DOM element where it will load/play its functionality.

Ofcourse, Module can talk to each other easily.

Rules

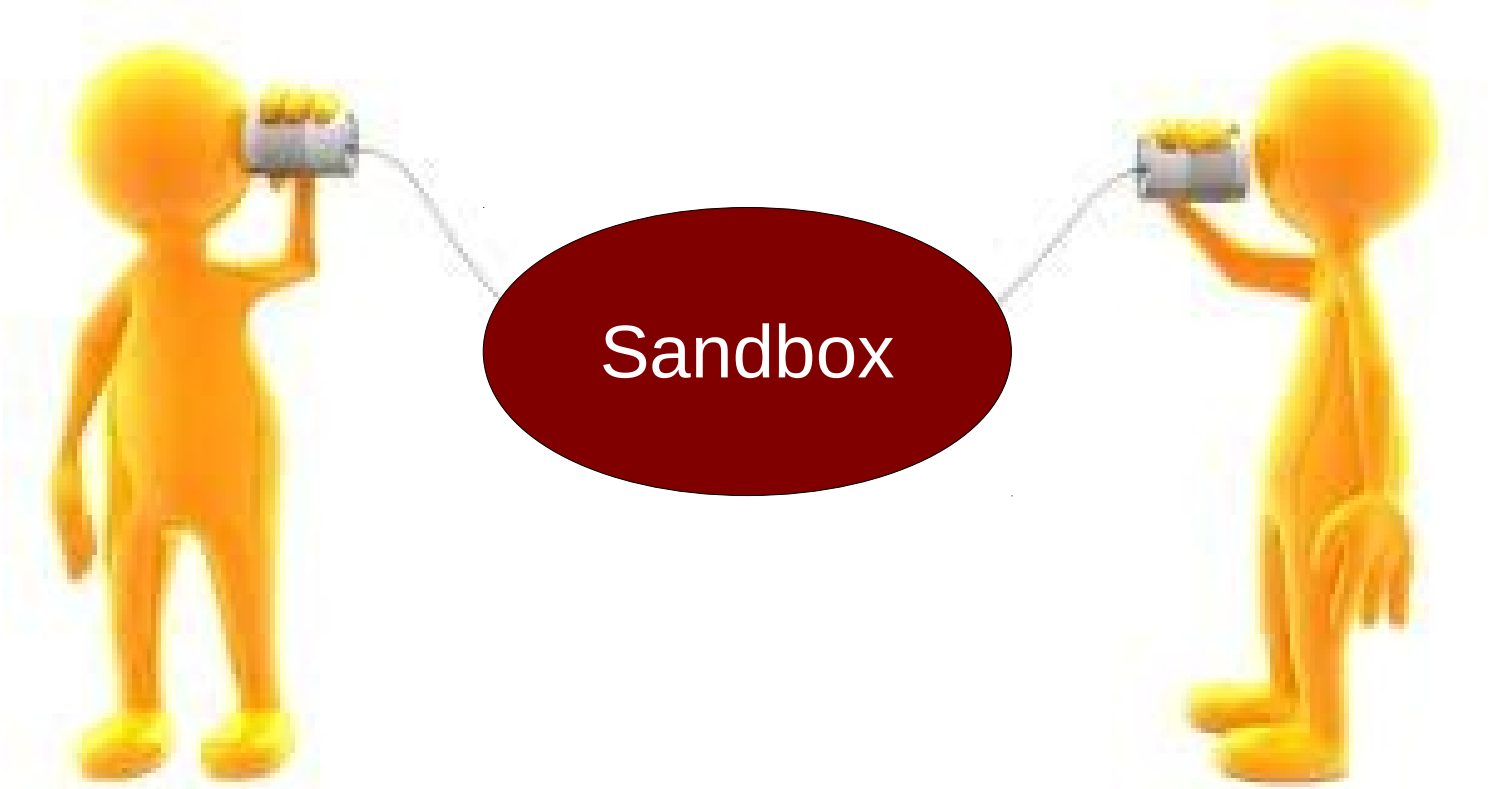
Module MUST not modify any DOM element outside its DOM container.

Lifecycle of Module

Module - start

- Create HTML
- Load Data from Server
- Assign Callback
- Pub/Sub Callback
- Load other Module if any

Module - end

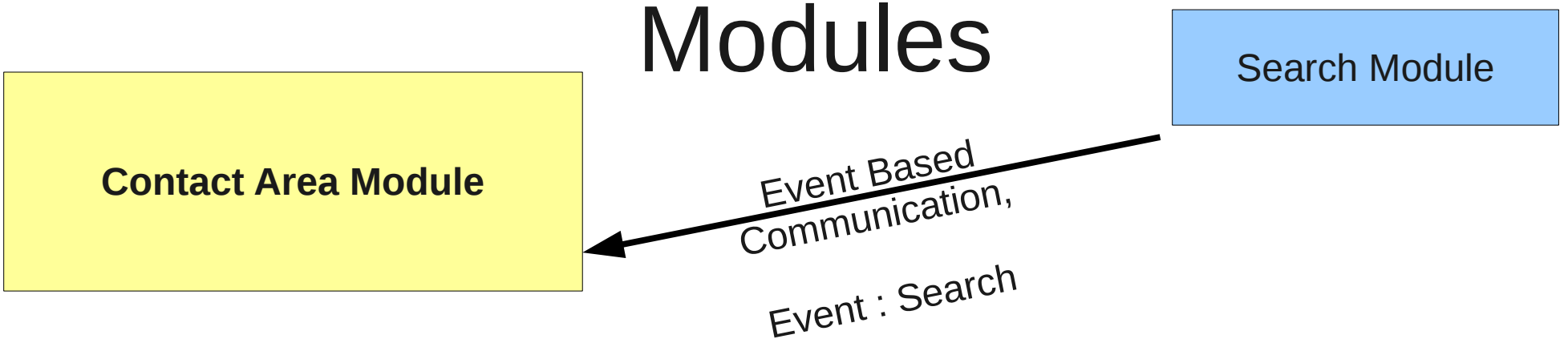


Module talk to each other using Pub/Sub Architecture,

Event based communication.

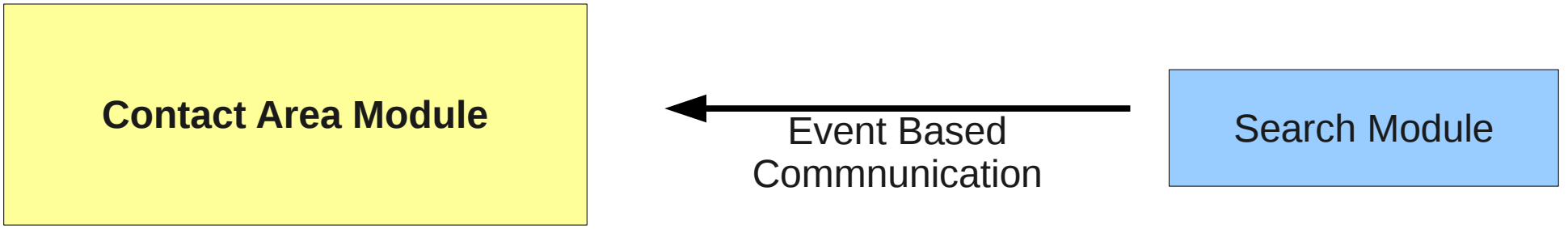
Via - sandbox

How a Module Talks to Other Modules



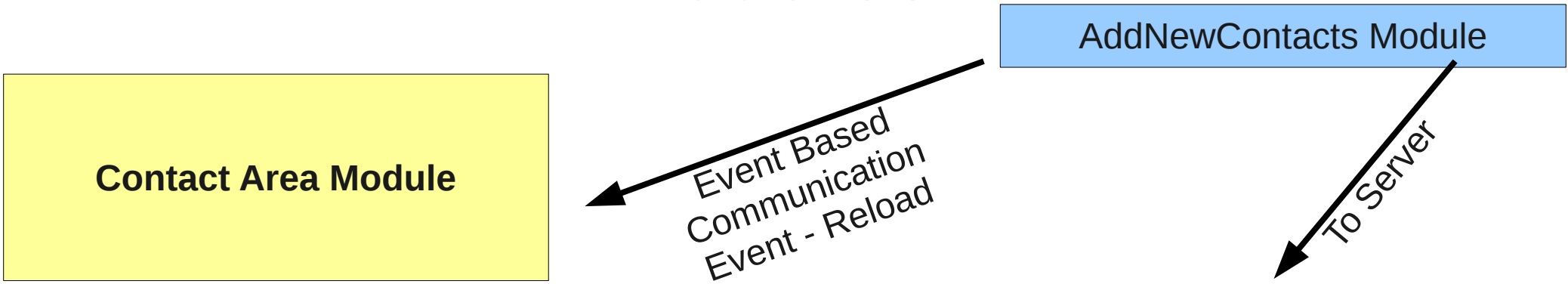
If user types something in search module, it will send 'search string' to Contact Area Module.

Example



If Search module fails to load, user will not be able to search.
But Contact Area module must be working perfectly. Both modules are loosely coupled.

How a Module Talks to Other Modules



If you add a “new Contact”

AddNewContastModule sends new contact information to server (in Ajax) and gets response.

If it gets proper response then it sends “Reload Event” to Contact Area Module

How a Module Talks to Other Modules

If Search module fails then user will not be able to search.

But Contact Area module must be working perfectly. Both modules are loosely coupled.

Application Start here

```
<html>
<head>
	<script type="text/javascript" src="./external-libs/jquery-1.7.1.js"></script>
	<script type="text/javascript" src="./external-libs/lb-min-2012-08-04-0752.js"></script>
	<script type="text/javascript" src="./elpaJsRepo/index.js"></script>
	<link rel="STYLESHEET" href="./elpaJsRepo/blogReaderApp/index.css" type="text/css">
	<script type="text/javascript" src="./elpaJsRepo/blogReaderApp/index.js"></script>
	<script type="text/javascript"
src="./elpaJsRepo/blogReaderApp/blogDisplayPanel/index.js"></script>
	<script type="text/javascript" src="./elpaJsRepo/blogReaderApp/navigator/index.js"></script>
	<script type="text/javascript" src="./elpaJsRepo/blogReaderApp/footer/index.js"></script>
	<script type="text/javascript" src="./elpaJsRepo/blogReaderApp/header/index.js"></script>

	<script type="text/javascript">
		$(function(){
			var application = new lb.core.Module("applicationContainer",
elpaJsRepo.blogReaderApp);
			application.start();

		});
	</script>

</head> <body> <div id="applicationContainer"></div> </body> </html>
```

Who will initialize this module?

```
elpaJsRepo.blogReaderApp = function(sandbox){
	var $_ = commonLbConstructor;

	$_.prototype = {
		start: function(){
			this.initHTML();
			this.loadModules();
		},
		initHTML: function(){
			this.$.append('\
				<div class="footer" id="'+ this.id +'_footer"></div>\
				');
		},
		loadModules: function(){
			this.footerModule = new lb.core.Module(this.id + "_footer",
elpaJsRepo.blogReaderApp.footer);
			this.footerModule.start();
		}
	};
	return new $_(sandbox);
}
```

Coding – How to create a module ?

```
elpaJsRepo.blogReaderApp.footer = function(sandbox){

    var $_ = commonLbConstructor ;

    $_.prototype = {
        start: function(){
            this.initHTML();

        },
        end: function(){

        },
        initHTML: function(){
            this.$.append("<p>THIS IS FOOTER PANEL</p>");
        }
    };
    return new $_(sandbox);
};
```

Summary

A Module loads in an EMPTY div element.

Ex

Now you can load a module in this container using:

```
var application =  new lb.core.Module( “applicationContainer",
        elpaJsRepo.blogReaderApp);
application.start();
```

Or simpler – (new lb.core.Module(<id>, <function>)).start();

Using this, start function will be executed

Inside the module -

this.$ 'is equal to' $(“#applicationContainer”);

So that you can perform DOM operations on the container element

Sending Events

Subscribe – Module 1

```
this.sandbox.events.subscribe(
        {event: 'onBlogLinkSelected'},
        function(args){
                self.loadBlog(args.value);
        }
);
```

Publish – Module 2

```
this.sandbox.events.publish({event: 'onBlogLinkSelected', value: $
(this).data("blogid") });
```

Links

(Nicholas Zakas: Scalable JavaScript Application Architecture)
http://www.youtube.com/watch?v=vXjVFPosQHw

https://github.com/eric-brechemier/lb_js_scalableApp

https://github.com/nsisodiya/Demo-Scalable-App