```
grasppe = eval("(function (w) {'use strict'; if (typeof w.grasppe !== 'function') w.grasppe = class
    grasppe{constructor(){}};}(this)); grasppe");
(function (window, grasppe, undefined) {
    'use strict';
    grasppe.require(grasppe.load.status.initialize, function () {
        // !- [ColorSheetsApp]
        grasppe.ColorSheetsApp = grasppe.Libre.Module.define(class ColorSheetsApp extends
            grasppe.Libre.Module {
            // !- ColorSheetsApp [Constructor]
            constructor() {
                var args = [... arguments],
                     options = (args.length > 0 && typeof args.slice(-1)[0] === 'object') ? args.pop() :
                         undefined;
                if (!options.values) options.values = {};
                if (!options.values.model) options.values.model = grasppe.ColorSheetsApp.Model;
                else Object.assign(options.values.model, grasppe.ColorSheetsApp.Model,
                     options.values.model);
                super(options);
            initializeComponents() {
                INITIALIZE_SHEETS: {
                     if (!this.sheets) this.sheets = {};
                     for (var key in this.sheets) this.sheets[key].directives &&
                         this.initializeDirectives(this.sheets[key].directives),
                         this.sheets[key].controllers &&
                             this.initializeControllers(this.sheets[key].controllers);
                     this.values.model.sheets = this.sheets;
                }
            }
            set sheets(sheets) {
                this.hash.sheets = sheets;
            }
            get sheets() {
                return this.hash.sheets;
        }, {
            // !- ColorSheetsApp [Prototype]
            description: 'Graphic arts theory demos!', version: (1.0),
requirements: ['ngMaterial', 'ngAnimate'],
            controller: grasppe.Libre.Controller.define('ColorSheetsAppController', function ($scope,
                model, module) {
                // !- ColorSheetsApp [Controllers] ColorSheetsAppController
                $scope.model = model, $scope.module = module, $scope.parameters = {};
                $scope.layout = model.layout, $scope.panels = model.panels, $scope.sheets = module.sheets;
                function selectSheet(key) {
                     if (!key) key = Object.keys($scope.sheets)[0];
                     $scope.sheet = $scope.sheets[key], $scope.sheet.id = key;
for (var panelKey of ['stage', 'parameters', 'results', 'overview'])
                         $scope.panels[panelKey].template = $scope.sheet[panelKey].template,
                         $scope.panels[panelKey].directive = $scope.sheet[panelKey].directive;
                }
                selectSheet();
                 // console.log('ColorSheetsAppController', this, arguments);
                $providers: ['$libreModel'],
            }),
            controllers: {},
            template: '<div color-Sheets-Sheet-Panel layout="column"></div><color-sheets-styles></color-
                sheets-styles>', configuration: [function ($mdIconProvider) {
                $mdIconProvider.defaultFontSet('glyphicon') defaultIconSet('icon-set.svg', 20); // Register
                     a default set of SVG icons
            }],
            directives: {
                // !- ColorSheetsApp [Directives] CopyrightsDirective
                copyrightsDirective: grasppe.Libre.Directive.define('copyrights', {
                       link: function ($scope, element, attributes) {},
                     template: 'Copyrights © 2015, Saleh Abdel Motaal, Franz Sigg, and Grasppe, Inc.',
                }),
```

```
// !- ColorSheetsApp [Directives] colorSheetsStyles
colorSheetsStyles: grasppe.Libre.Directive.define('colorSheetsStyles', {
    link: function ($scope, element, attributes) {
        Object.assign($scope, {
   panelHeaderHeight: '36px', mainHeaderHeight: '48px',
        })
    },
    template: '<style>\
        @media all {\
            :not(input):not(.selectable) {user-select:none;cursor:default;}\
            * {outline-style:none;outline-width:0;}\
           md-toolbar.color-sheets-toolbar, md-toolbar.color-sheets-toolbar > * {max-
                           height: {{panelHeaderHeight}}; min-height:
                           {{panelHeaderHeight}};}\
            .color-sheets-sheet-panel-header md-toolbar.color-sheets-toolbar..color-
                           sheets-sheet-panel-header md-toolbar.color-sheets-toolbar > *
                           {max-height: {{mainHeaderHeight}}; min-height:
                           {{mainHeaderHeight}};}\
        @media screen {\
           body {margin:0;padding:0;min-width:100vw;min-height:100vh;}\
        @media print {\
            md-slider {display: none !important;}\
md-button * {opacity: 0.5 !important;}\
    </style>',
}),
  !- ColorSheetsApp [Directives] colorSheetsControl
colorSheetsControl: grasppe.Libre.Directive.define('colorSheetsControl', {
    link: function ($scope, element, attributes) {
        $scope.control = {
            id: 'control-id', label: 'control-label', description: 'control-description',
    template: '\
    <div layout>\
        <div flex="10" layout layout-align="center center"><span class="md-
            body-1">{{control.label}}</span></div>\
        <ng-transclude flex></ng-transclude>\
       </div>\
    </div>',
}),
  !- ColorSheetsApp [Directives] colorSheetsSliderControl
colorSheetsSliderControl: grasppe.Libre.Directive.define('colorSheetsSliderControl',
    function () {
    return {
        link: function ($scope, element, attributes) {
            // console.log('colorSheetsSliderControl :: preLink', $scope.parameters);
            $scope.control = {
                id: attributes.id, label: attributes.label, description:
                    attributes.description, minimum: Number(attributes.minimum),
                maximum: Number(attributes.maximum),
                step: Number(attributes.step),
                model: attributes.model, value: Number(localStorage.getItem($scope.sheet.id
                       - + attributes.model)) | Number(attributes.value),
                suffix: attributes.suffix,
            element.find('md-slider, input').attr('ng-model', 'parameters.' +
                $scope.control.model);
        controller: ['$scope', '$element', function ($scope, element) {
    $scope.$watch('control.value', function (current, last, $scope) {
                if (current !== $scope.parameters[$scope.control.model] && current !==
                    undefined) {
                    $scope.parameters[$scope.control.model] = current;
                    localStorage.setItem($scope.sheet.id + '-' + $scope.control.model,
                        current);
           });
        }],
```

```
template: '\
       <div layout>\
           <div flex="30" layout layout-align="center center"><span class="md-</pre>
               body-1">{{control.label}}</span></div>\
           <md-slider flex min="{{control.minimum}}" max="{{control.maximum}}" aria-
               label="{{control.description}}" id="{{control.id}}" class ng-
               model="control.value"></md-slider>\
           <div flex="15" layout layout-align="center center"><input flex type="number"</pre>
               min="{{control.minimum}}" max="{{control.maximum}}" step="{{control.step}}"
               aria-label="{{control.description}}" aria-controls="{{control.id}}" ng-
               model="control.value"></div>\
           <div flex="10" layout layout-align="center center"><span class="md-</pre>
               body-1">{{control.suffix}}</span></div>\
       </div>', scope: true,
   };
  !- ColorSheetsApp [Directives] colorSheetsImageControl
colorSheetsImageControl: grasppe.Libre.Directive.define('colorSheetsImageControl', function
    return {
       var toast = function (message) {
                   $mdToast.show($mdToast.simple().content(message))
               },
               error = function (message) {
                       $mdDialog.show($mdDialog.alert().openFrom(element).closeTo(element)
                       .clickOutsideToClose(true).title('Image not
                       saved...').content(message).ariaLabel('Image not
saved...').ok('OK'))
               };
           element.find('.image-preview').bind('drop', function (event) {
               if (event.originalEvent.dataTransfer.files.length == 1) {
                   Object.assign(new FileReader(), {
                       onload: function (event)
                           if (event.target.result.match(/^data:image\/(png|jpeg|gif|
                               svg)/)) $scope.control.value = event.target.result, $scope.
                               $apply();
                           else error('Only png, gif, jpeg, and svg images can be used!');
                       },
                   }).readAsDataURL(event.originalEvent.dataTransfer.files[0]);
               } else {
                   $scope.control.value = Object.assign(new Image, {
                       src: event.originalEvent.dataTransfer.getData('URL'),
                       crossOrigin: 'Anonymous',
                   }).src;
           }).bind('dragenter', function (event) {
               $(this).css('background-color', 'rgba(255, 0, 0, 0.5)');
           }).bind('dragleave drop', function (event) {
               $(this).css('background-color', 'transparent');
           });
           $scope.$watch('control.value', function (current, last, $scope) {
               if (current !== $scope.parameters[$scope.control.model] && current !==
                   undefined) $scope.parameters[$scope.control.model] = current;
               if (current !== undefined && localStorage.getItem($scope.sheet.id + '-' +
                   sscope.control.model) !== current) try {
sscope.control.model,
form(*scope.sheet.id + '-' + $scope.control.model,
                       current):
                   toast('Image saved!');
               } catch (err) {
                   error('The file will not be saved!');
               $scope.control.text = (current !== undefined) ? '' : 'Drop Image Here!';
           });
       link: function preLink($scope, element, attributes, controller) {
           $scope.control = {
               id: attributes.id, label: attributes.label, description:
                   attributes.description, suffix: attributes.suffix, value:
                   model: attributes.model, text: ''
```

```
element.find('md-slider, input').attr('ng-model', 'parameters.' +
               $scope.control.model);
        },
        template: '\
        <div layout>\
            <div flex="30" layout layout-align="center center"><span class="md-
               body-1">{{control.label}}</span></div>\
           <div flex class="image-preview md-button" style="height: 4em; background-</pre>
               position: center center; background-size: contain; background-repeat: no-
                repeat; " ng-style="{\'background-image\': \'url(\' + control.value + \')
                \'}", layout layout-align="center center">{{control.text}}</div>\
            <!--input flex type="image" aria-label="{{control.description}}" aria-controls="{{control.id}}" ng-model="control.value"-->\
            <!--div flex="10" layout layout-align="center center"><span class="md-
               body-1">{{control.suffix}}</span></div-->\
        </div>', scope: true,
   };
}),
  !- ColorSheetsApp [Directives] colorSheetsPanelTool
colorSheetsPanelTool: grasppe.Libre.Directive.define('colorSheetsPanelTool', {
    link: function ($scope, element, attributes) {
       if ($scope.tool.click) {
           element.attr('onclick', $scope.tool.click);
    },
    template: ('<md-button class="{{tool.classes}}" aria-label="{{tool.label}}"> \
               <md-icon md-font-icon="{{tool.icon}}" class="toolsIconClasses
                    {{tool.iconClasses}} glyphicon {{tool.icon}}" ng-style="{color:
                    {{tool.color || toolsColor}}, fontSize: toolsIconSize}"></md-icon> \
            </md-button>'),
    scope: true,
// !- ColorSheetsApp [Directives] colorSheetsPanelTools
colorSheetsPanelTools: grasppe.Libre.Directive.define('colorSheetsPanelTools', {
    link: function ($scope, element, attributes) {
        $scope.toolsColor = ($scope.panel.toolsColor || $scope.model.toolsColor);
        $scope.toolsIconSize = ($scope.panel.toolsIconSize || $scope.model.toolsIconSize);
    },
    template: ('\
    init="menuIcon = panel.icon"> \
                <md-icon md-font-icon="{{menuIcon}}" class="toolsIconClasses" ng-
                   style="{color: toolsColor, fontSize: toolsIconSize}"></md-icon> \
           </md-button> \
            <header class="{{headerClasses}}" color="{{headerColor}}"><span>{{header}}
               span></header> \
            <span flex></span> \
           <color-sheets-panel-tool ng-repeat="tool in tools"></color-sheets-panel-tool> \
        </div> \
    </md-toolbar>').
    scope: true,
// !- ColorSheetsApp [Directives] colorSheetsPanel
colorSheetsPanel: grasppe.Libre.Directive.define('colorSheetsPanel', function () {
    return {
        link: function ($scope, element, attributes, controller) {
            if ($scope.segment.attributes) $(element).attr($scope.segment.attributes);
            Object.assign($scope, $scope.panel);
       }.
        template: ('\
        panel" {{section.attributes}} layout="column" >\
            <div class="color-sheets-panel-header {{headerClasses}} {{prefix || \'sheet</pre>
                \'}}-panel-header" color-sheets-panel-tools>{{panel.header}}</div>\
            <div ng-switch="section.id">\
               <div ng-switch-when="stage" class="color-sheets-panel-contents"
                    {{contentClasses}} {{prefix || \'sheet\'}}-panel-contents" color-sheet-
                   stage></div>\
                <div ng-switch-when="parameters" class="color-sheets-panel-contents</pre>
                    {{contentClasses}} {{prefix || \'sheet\'}}-panel-contents" color-Sheet-
                   parameters></div>\
               <div ng-switch-when="results" class="color-sheets-panel-contents</pre>
```

```
{{contentClasses}} {{prefix || \'sheet\'}}-panel-contents" color-Sheet-
                              results></div>\
                          <div ng-switch-when="overview" class="color-sheets-panel-contents</pre>
                              {{contentClasses}} {{prefix || \'sheet\'}}-panel-contents" color-Sheet-
                              overview></div>\
                          <div ng-switch-default class="color-sheets-panel-contents"</pre>
                              {{contentClasses}} {{prefix || \'sheet\'}}-panel-contents"></div>\
                     </div>\
                     <div ng-if="footer" class="color-sheets-panel-footer {{footerClasses}} {{prefix</pre>
                          || \'sheet\'}}-panel-footer">{{footer}}</div>\
                 </div>').
            }
        }),
           !- ColorSheetsApp [Directives] colorSheetsSheetSegment
        colorSheetsSheetSegment: grasppe.Libre.Directive.define('colorSheetsSheetSegment', {
             link: function ($scope, element, attributes) {
                 if ($scope.segment.attributes) $(element).attr($scope.segment.attributes);
             template: ('<div ng-repeat="section in segment.contents" {{section.attributes}}</pre>
                 class="ng-class: section.classes;" ng-init="panel = panels[section.id]" ng-
                 style="section.style;" color-sheets-panel="{{panel}}">{{panel}}</div>'),
           !- ColorSheetsApp [Directives] colorSheetsSheetPanel
        colorSheetsSheetPanel: grasppe.Libre.Directive.define('colorSheetsSheetPanel', {
             link: function ($scope, element, attributes) {
                 Object.assign($scope, $scope.panel);
             template: ('\
             <div ng-init="panel = panels[\'sheet\']" class="color-sheets-panel {{panelClasses}}</pre>
                 color-sheets-panel-tools>{{panel.header}}</div>\
                 <div class="color-sheets-sheet-panel-contents {{prefix || \'sheet\'}}-panel-</pre>
                     contents" color-Sheets-Sheet>\
                 </div>
                 <div class="color-sheets-sheet-panel-footer" {{prefix || \'sheet\'}}-panel-footer"</pre>
                     copyrights></div>\
             </div>'),
        }),
           !- ColorSheetsApp [Directives] colorSheetsSheet
        colorSheetsSheet: grasppe.Libre.Directive.define('colorSheetsSheet', {
             link: function ($scope, element, attributes) {
                 if ($scope.layout.attributes) $(element).attr($scope.layout.attributes);
             template: ('<div class="color-sheets-sheet container-fluid
                 {{layout.classes}}" {{layout.attributes}} ng-style="layout.style;" layout-fill>\
                 <div ng-repeat="segment in layout.contents" {{segment.container}} class="ng-class:
    segment.classes;" ng-style="segment.style;" color-sheets-sheet-segment></div> \
             </div>'),
        }),
    },
}, {
     // !- ColorSheetsApp [Model]
    Model: {
        toolsIconSize: '20px', toolsColor: 'white', menuIcon: 'glyphicon-menu-hamburger',
     toolsIconClasses: 'tools-icon', layout: {
            id: 'default', attributes: {
    'layout': 'column', 'layout-gt-lg': 'row',
             },
             classes: 'container-fluid', style: {
   padding: 0, margin: 0, flex: 1
             },
             contents: {
                 simulation: {
                     id: 'simulation', attributes: {
                         'layout': 'row', 'layout-sm': 'column', 'layout-gt-lg': 'row',
                     classes: 'row col-xs-12', style: {
                         padding: 0, margin: 0, flex: 1
                     contents: {
                         stage: {
                                  'stage', classes: 'col-xs-12 col-sm-6 col-md-7 col-lg-8', style: {
                              id:
                                  padding: 0, margin: 0
                              },
```

```
},
                 parameters: {
                      id: 'parameters', classes: 'col-xs-12 col-sm-6 col-md-5 col-lg-4',
                          style: {
                          padding: 0, margin: 0
                      },
                 },
             },
         information: {
             id: 'information', attributes: {
    'layout-sm': 'column', 'layout-md': 'row',
             classes: 'row col-xs-12', style: {
                 padding: 0, margin: 0, flex: 1
             contents: {
                 results: {
    id: 'results', attributes: {
        'flex-order-sm': -1,
                      classes: 'col-xs-12 col-sm-5', style: {
                          padding: 0, margin: 0
                      },
                 },
                 overview: {
                      id: 'overview', attributes: {
                          'flex-order-sm': 1,
                      classes: 'col-xs-12 col-sm-7', style: {
                          padding: 0, margin: 0
                      },
                },
            },
        },
    }
},
panels: {
    sheet: {
         prefix: 'sheet', header: 'ColorSheet', icon: 'glyphicon-menu-hamburger',
             toolbarClasses: 'grey lighten-2 black-text', tools: {
             refresh: {
   icon: 'glyphicon-refresh', label: 'refresh', classes: 'md-button-flat red
                      black-text', click: 'location.reload()',
             },
             documentation: {
                 icon: 'glyphicon-book', label: 'documentation', classes: 'md-button-flat
                      orange black-text',
             },
        },
         contents: '', footer: '', // controller: 'SheetPanelController',
    },
    stage: {
        prefix: 'stage', header: 'Stage', icon: 'glyphicon-stats', toolbarClasses: 'grey
             darken-1', tools: {
             zoom: {
                 icon: 'glyphicon-search', label: 'zoom', classes: 'md-icon-button black-
                      text', color: 'black',
             style: {
                 icon: 'glyphicon-tint', label: 'style', classes: 'md-icon-button black-
                      text', color: 'black',
             },
        contents: '', footer: '', controller: 'StagePanelController',
    },
    parameters: {
        prefix: 'parameters', header: 'Parameters', icon: 'glyphicon-cog', toolbarClasses:
             'green lighten-1', contents: '', footer: '', tools: undefined, controller:
             'ParametersPanelController',
    },
    results: {
        prefix: 'results', header: 'Results', icon: 'glyphicon-th-list', toolbarClasses:
    'red lighten-1', contents: '', footer: '', tools: undefined, controller:
             'ResultsPanelController',
```