

# Beginner's "X3D JSON" X3D JSON Loader

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# JSON links

- The JSON standard: <https://www.json.org>
- The JSON schema draft: <https://json-schema.org>
- Examples of “X3D JSON” (zip):  
<https://www.web3d.org/x3d/content/examples/X3dExampleArchives/JsonScenes.zip>

# X3D JSON Browsers, X3D JSON authoring

- X3DOM
- <http://coderextreme.net/X3DJSONLD/src/main/html/ballx3dom.html>
- Bring JSON in through url:
  - `<Inline url='\"../data/ball.json\"'></Inline>`
- X\_ITE:
- [https://coderextreme.net/X3DJSONLD/src/main/html/ballx\\_ite.html](https://coderextreme.net/X3DJSONLD/src/main/html/ballx_ite.html)
- Bring JSON in through url:
  - `<X3DCanvas cache='false' url='\"../data/ball.json\"'>`
- Different because we need to apply gamma correction to X3DOM.

# Loading a JavaScript object into X\_ITE:

- Loading a JS Object into X\_ITE:
- ```
function load_X_ITE_JS(jsobj, selector) {  
  X3D(function() {  
    if (typeof X3D.getBrowser !== 'undefined') {  
      var browser = X3D.getBrowser(selector);  
      if (typeof browser !== 'undefined' && typeof browser.importJS !== 'undefined') {  
        var importedScene = browser.importJS(jsobj);  
        browser.replaceWorld(importedScene);  
      }  
    }  
  }, function() {  
    alert("Failed to render JS to X_ITE");  
  });  
}
```

# Validator:

- Warning! So far non-of the suggested method are secure. The first line of defeense is the schema validator, integrated here:
- <https://github.com/coderextreme/X3DJSONLD/blob/master/src/main/node/loadValidate.js>
- `<html xmlns="http://www.w3.org/1999/xhtml">`
- `<head>`
- `<title>X3D JSON Validator</title>`
- `<script src="https://code.jquery.com/jquery-3.3.1.min.js" integrity="sha256-FgpCb/KJQlLNfOu91ta32o/NMZxltwRo8QtmkMRdAu8=" crossorigin="anonymous"></script>`
- `<script type="text/javascript" src="https://cdnjs.cloudflare.com/ajax/libs/ajv/6.12.3/ajv.min.js"></script>`
- `<script type="text/javascript" src="../node/X3DJSONLD.js"></script>`
- `<script type="text/javascript" src="../node/loadValidate.js"></script>`
- `<script type="text/javascript" src="../node/loaderJQuery.js"></script>`
- `<script type="text/javascript" src="../node/ajv-i18n/localize/en/index.js"></script>`
- `</head>`

# More Validator p. 2

- `<body>`
- `<h1>X3D JSON schema validator</h1><br></br>`
- `If you paste nasties into this page, you will get nasties back. I am not responsible for your misuse of this page.<br></br>`
- `<a href="javascript:validator();">Click here to validate JSON in text area against X3D JSON Schema 3.3</a>`
- `Language:`
- `<select onchange="lang=this.value;loadLocalize(lang);">`
- `<option>en</option>`
- `<option>de</option>`
- `</select><br></br>`
- `<textarea id="json" name="json" rows="45" cols="80"></textarea><br></br>`
- `</body>`

# Validator p. 3

```
<script type="text/javascript">
function validator() {
    try {
        var data = $("#json").val();
        if (data.startsWith("http")) {
            $.getJSON(data, function(json) {
                loadSchema(json, "<unknown>", doValidate, X3DJSONLD, function() {
                    alert("Valid or user clicked OK");
                }, function(e) {
                    alert(e);
                });
            });
        } else {
            var json = JSON.parse(data);
            loadSchema(json, "<unknown>", doValidate, X3DJSONLD, function() {
                alert("Valid or user clicked OK");
            }, function(e) {
                alert(e);
            });
        }
    } catch (je) {
        alert(je);
    }
}
</script>
</html>
```

# Validator p. 4

- This currently validates and produces English and German error reports. Other languages are currently very possible, if there is interest. The validator makes use of Ajv and Ajv-i18n.
- Other options? See <https://json-schema.org/implementations.html>



# Goodbye!

More advanced combinations of various JSON files are possible and implemented here:

<https://github.com/coderextreme/X3DJSONLD/tree/master/src/main/html/>

In particular, index.html should provide a full example, except for X3DOM X3D Scripts which are a work in progress.

Do not forget to provide some X3D Script checking for vulnerabilities. There is no checking of Script nodes that I know of.

Source code: <https://github.com/coderextreme/X3DJSONLD/>

Thanks to Andreas Plesch for Browser API, Script, and Proto Implementation in X3DOM.

Beta C++ version at <https://github.com/coderextreme/X3DJSONLD/src/main/cplusplus/>