openSAP Evolved Web Apps with SAPUI5

Week 1 Unit 5: Making Use of Smart Little Helpers

Exercises

PUBLIC

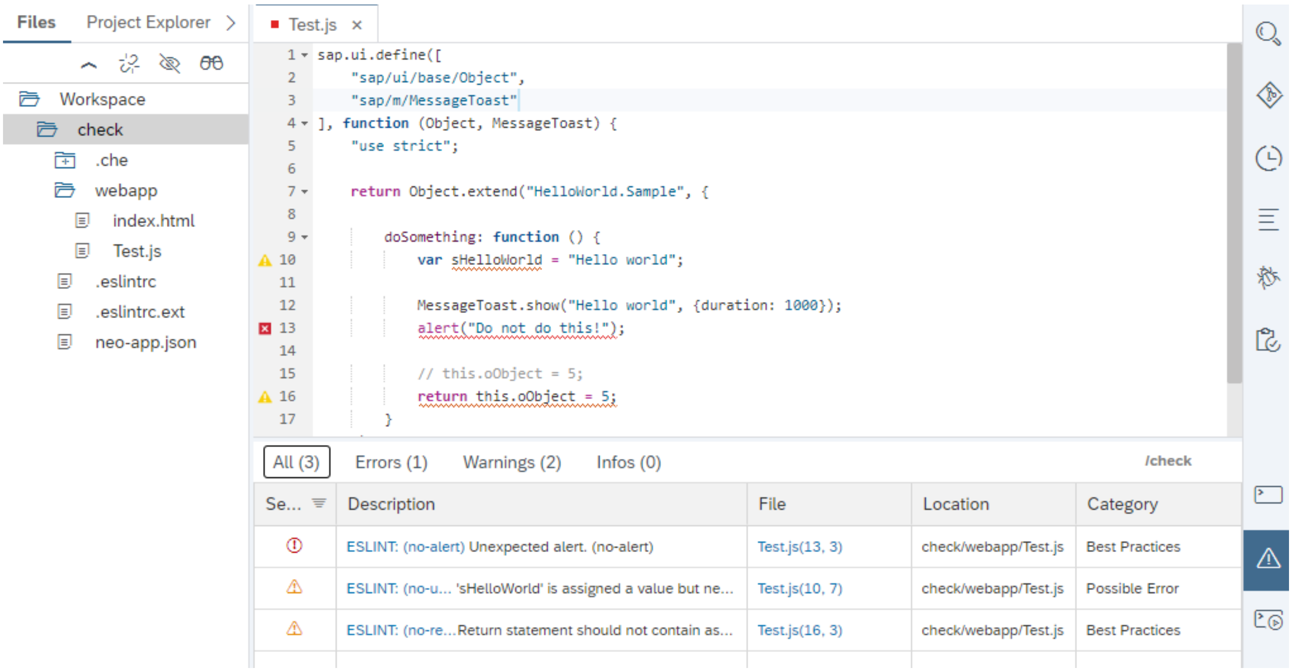
TABLE OF CONTENTS

MAKING USE OF SMART LITTLE HELPERS

Summary

In this unit, you will get a brief overview about basic debugging with the Google Chrome DevTools as well as some troubleshooting tips and tricks in case you get stuck with your app development. On completion of this unit, you will know how to debug and troubleshoot your UI5 application with the tools offered by SAPUI5 and the Chrome DevTools. You also know how ESLint can aid in ensuring code quality throughout the app development cycle.

Preview



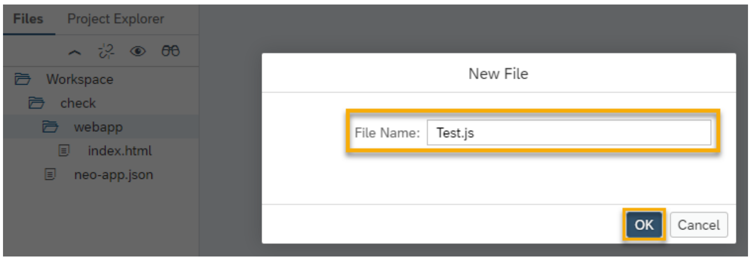
```
sap.ui.define([
    "sap/ui/base/Object",
    "sap/m/MessageToast"
], function (Object, MessageToast) {
    "use strict";

    return Object.extend("HelloWorld.Sample", {

        doSomething: function () {
            var sHelloWorld = "Hello world";

            MessageToast.show("Hello world", {duration: 1000});
            alert("Do not do this!");

            // this.oObject = 5;
            return this.oObject = 5;
        }
```

Se...	Description	File	Location	Category
!	ESLINT: (no-alert) Unexpected alert. (no-alert)	Test.js(13, 3)	check/webapp/Test.js	Best Practices
⚠	ESLINT: (no-u... 'sHelloWorld' is assigned a value but ne...	Test.js(10, 7)	check/webapp/Test.js	Possible Error
⚠	ESLINT: (no-re...Return statement should not contain as...	Test.js(16, 3)	check/webapp/Test.js	Best Practices

Figure 1 – ESLint Demo

Checking a JavaScript File with ESLint

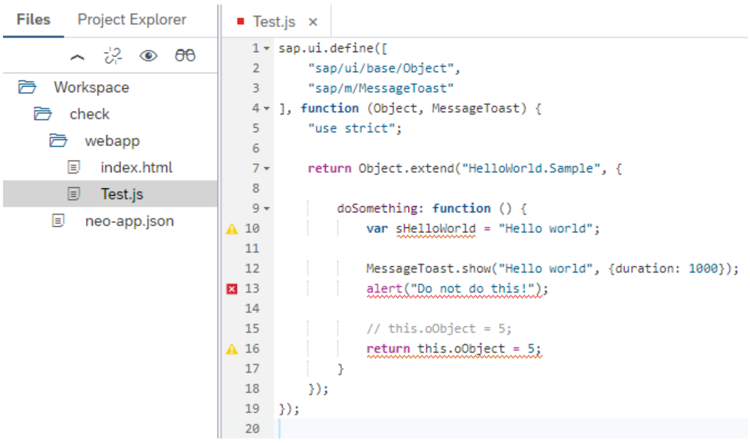
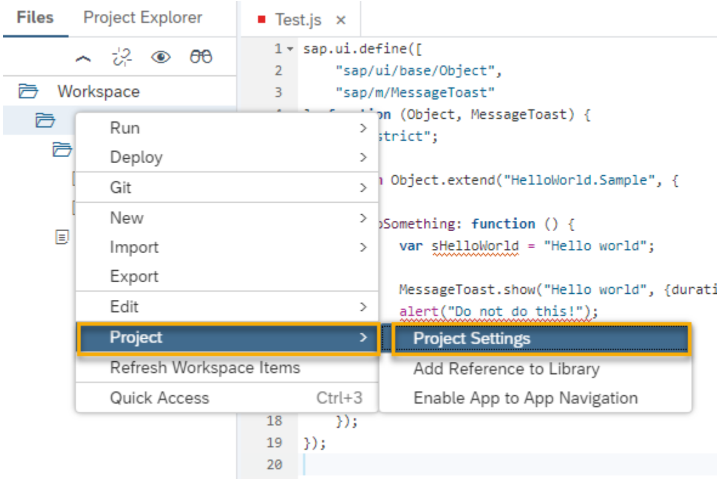
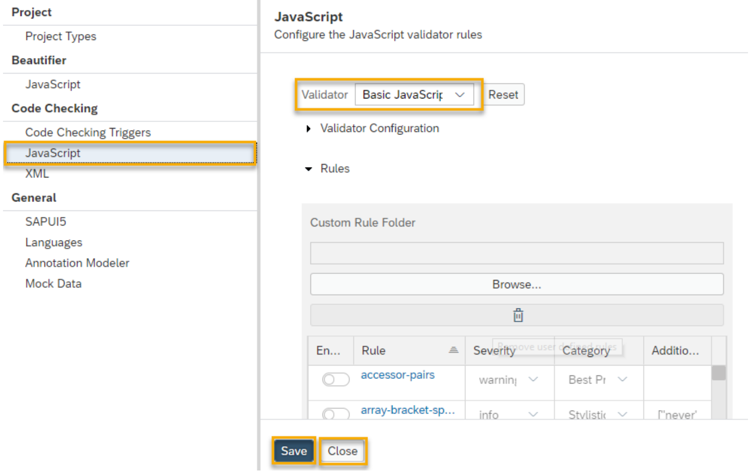
In this step you see how ESlint can help us avoid typos, typical issues and syntactical errors.

Explanation	Screenshot
1. Open the project folder, and right-click on the `webapp` folder. Then choose *New* → *File*. 2. Name the file `Test.js`, and Choose *OK*.	 Files Project Explorer Workspace check webapp index.html neo-app.json OK Cancel New File File Name: Test.js

webapp/Test.js

```
sap.ui.define([
   "sap/ui/base/Object",
   "sap/m/MessageToast"
], function (Object, MessageToast) {
   "use strict";

   return Object.extend("HelloWorld.Sample", {

      doSomething: function () {
         var sHelloWorld = "Hello world";

         MessageToast.show("Hello world", {duration: 1000});
         alert("Do not do this!");

         // this.oObject = 5;
         return this.oObject = 5;
      }
   });
});
```

Paste the above code snippet to the newly created `Test.js` file.

Explanation	Screenshot
3. Save the file	
4. Right-click on your project folder, and choose *Project* → *Project Settings.*	
5. Under *Code Checking*, choose *JavaScript.* 6. Choose the *Basic JavaScript* validator. Choose *Save* and then *Close*.	

```
sap.ui.define([
    "sap/ui/base/Object",
    "sap/m/MessageToast"
], function (Object, MessageToast) {
    "use strict";

    return Object.extend("HelloWorld.Sample", {

        doSomething: function () {
            var sHelloWorld = "Hello world";

            MessageToast.show("Hello world", {duration: 1000});
            alert("Do not do this!");

            // this.oObject = 5;
            return this.oObject = 5;
        }
    });
});
```

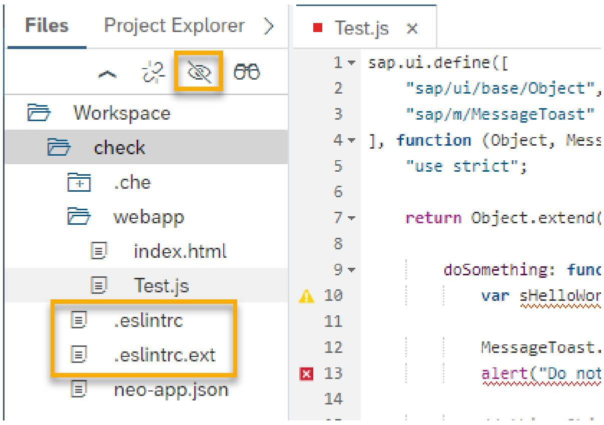
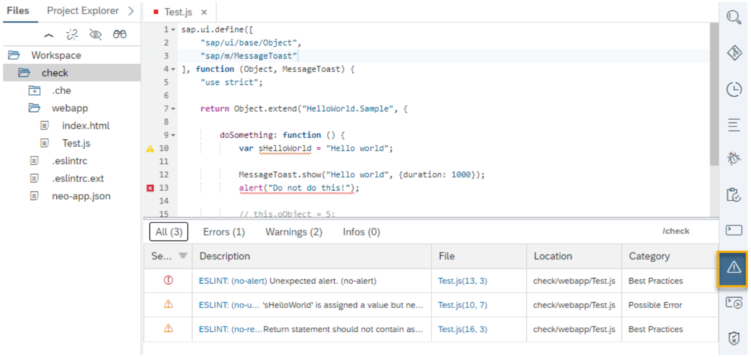
```
sap.ui.define([
    "sap/ui/base/Object",
    "sap/m/MessageToast"
...on (Object, MessageToast) {
strict";
 Object.extend("HelloWorld.Sample", {
Something: function () {
    var sHelloWorld = "Hello world";
    MessageToast.show("Hello world", {durati
    alert("Do not do this!");
    });
});
```

JavaScript
Configure the JavaScript validator rules

Validator: Basic JavaScrip

Custom Rule Folder

En...	Rule	Severity	Category	Additio...
○	accessor-pairs	warnin	Best Pr	
○	array-bracket-sp...	info	Stylistic	["never'

Explanation	Screenshot
7. Choose *Show Hidden Files* 8. You should now see two new files `.eslintrc` and `.eslint.ext` in your project.	
9. Choose *Problems* to see all issues at once.	

```
sap.ui.define([
    "sap/ui/base/Object",
    "sap/m/MessageToast"
], function (Object, Mess
    "use strict";

    return Object.extend(

        doSomething: func
            var sHelloWor

            MessageToast.
            alert("Do not

```

```
sap.ui.define([
    "sap/ui/base/Object",
    "sap/m/MessageToast"
], function (Object, MessageToast) {
    "use strict";

    return Object.extend("HelloWorld.Sample", {

        doSomething: function () {
            var sHelloWorld = "Hello world";

            MessageToast.show("Hello world", {duration: 1000});
            alert("Do not do this!");

            // this.oObject = 5;
```

All (3)   Errors (1)   Warnings (2)   Infos (0)   /check

Se...	Description	File	Location	Category
ⓘ	ESLINT: (no-alert) Unexpected alert. (no-alert)	Test.js(13, 3)	check/webapp/Test.js	Best Practices
⚠	ESLINT: (no-u... 'sHelloWorld' is assigned a value but ne...	Test.js(10, 7)	check/webapp/Test.js	Possible Error
⚠	ESLINT: (no-re... Return statement should not contain as...	Test.js(16, 3)	check/webapp/Test.js	Best Practices

You have now successfully enabled the ESLint configuration for your project in the SAP Web IDE.

Fixing ESLint Errors

Let’s fix the reported issues step by step.

webapp/Test.js

```
…
      doSomething: function () {
         var sHelloWorld = "Hello world";

         MessageToast.show(sHelloWorld, {duration: 1000});
         alert("Do not do this!");
…
```

You can replace the string `Hello World` with your variable `sHelloWorld`. Now it is used.

webapp/Test.js

```
…
      doSomething: function () {
         var sHelloWorld = "Hello world";

         MessageToast.show("sHelloWorld", {duration: 1000});
         alert("Do not do this!");

         // this.oObject = 5;
         return this.oObject = 5;
…
```

You can remove the alert function.

webapp/Test.js

```
…
      doSomething: function () {
         …
         alert("Do not do this!");

         // this.oObject = 5;
         return this.oObject = 5;
      }
   });
});
```

You can remove the assignment on the return statement for `this.oObject`. By uncommenting the line above, you do the assignment in a separate line.

Fixing a Typical Issue

Let’s investigate a typical error with an app similar to your existing Pre-Flight Check.

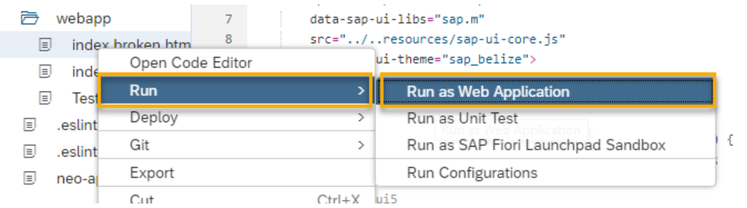
webapp/index.broken.html (NEW)

```
<!DOCTYPE HTML>
<head>
   <meta charset="UTF-8">
   <title>openSAP - Evolved Web Apps with SAPUI5</title>
   <link rel="stylesheet" type="text/css"
href="../../resources/sap/ui/core/themes/sap_belize/library.css">
   <script id="sap-ui-bootstrap"
      data-sap-ui-libs="sap.m"
      src="../..resources/sap-ui-core.js"
      data-sap-ui-theme="sap_belize">
   </script>
   <script>
      // check javascript
      document.addEventListener("DOMContentLoaded", function() {
         document.getElementById("web").innerHTML = "Ready!";
      });
      // check ui5
      sap.ui.getCore().attachInit(function() {
         new sap.m.Title({
            text: "Ready!"
         }).placeAt("ui5");
         document.getElementById("go").style.display = "block";
      });
   </script>
</head>
<body class="sapUiBody sapUiSmallMargin sapUiForceWidthAuto">
   <h1>Evolved Web Apps With SAPUI5</h1>
   <hr/>
   <h2>Pre-flight Check</h2>
   <ul>
      <li><p><strong>Web Page:</strong></p>
         <p id="web"></p></li>
      <li><p><strong>SAPUI5:</strong></p>
         <p id="ui5"></p></li>
   </ul>
   <h2><span id="go" style="display: none; color: forestgreen">&rarr; All systems go - ready for take-off!</span></h2>
</body>
</html>
```

Explanation	Screenshot

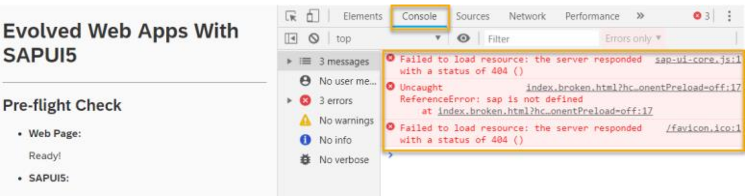
10. Right-click on the `webapp` folder and choose *New* → *File* to create a new file called `index.broken.html`.

11. Right-click on the `index.broken.html` file, and choose *Run* → *Run as Web Application*.



```
data-sap-ui-libs="sap.m"
src="../..resources/sap-ui-core.js"
ui-theme="sap_belize">
```

12. Open the Chrome DevTools on the newly opened page by pressing **F12**.
13. Go to the *Console* panel and have a look at the error messages.



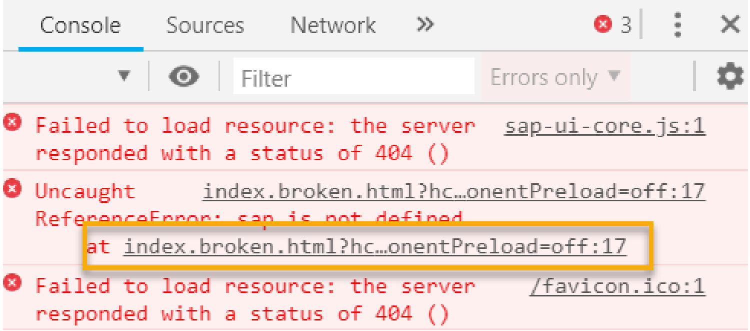
Evolved Web Apps With SAPUI5

Pre-flight Check

- **Web Page:**
  Ready!
- **SAPUI5:**

```
Failed to load resource: the server responded with a status of 404 ()   sap-ui-core.js:1
Uncaught   index.broken.html?hc…onentPreload=off:17
ReferenceError: sap is not defined
    at index.broken.html?hc…onentPreload=off:17
Failed to load resource: the server responded with a status of 404 ()   /favicon.ico:1
```

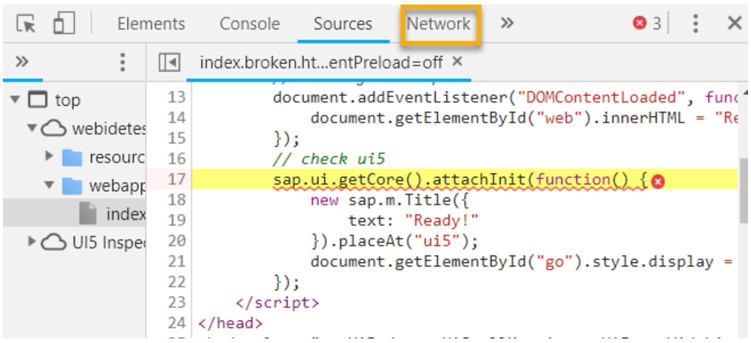
14. Navigate to the source code of the error message by clicking on the source code link.



```
Failed to load resource: the server   sap-ui-core.js:1
responded with a status of 404 ()
Uncaught      index.broken.html?hc…onentPreload=off:17
ReferenceError: sap is not defined
    at index.broken.html?hc…onentPreload=off:17
Failed to load resource: the server    /favicon.ico:1
responded with a status of 404 ()
```

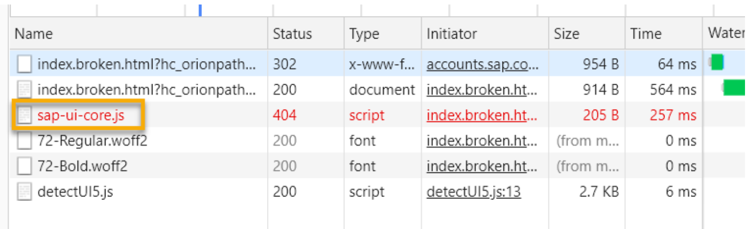
15. Go to the *Network* panel.

16. Reload the page by pressing **F5**.

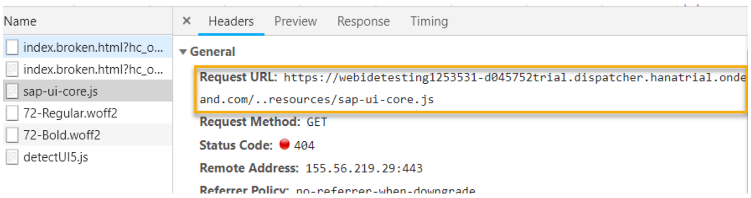


```
        document.addEventListener("DOMContentLoaded", func
            document.getElementById("web").innerHTML = "Re
        });
        // check ui5
        sap.ui.getCore().attachInit(function() {
            new sap.m.Title({
                text: "Ready!"
            }).placeAt("ui5");
            document.getElementById("go").style.display =
        });
    </script>
</head>
```

17. Click on the `sap-ui-core.js` request.



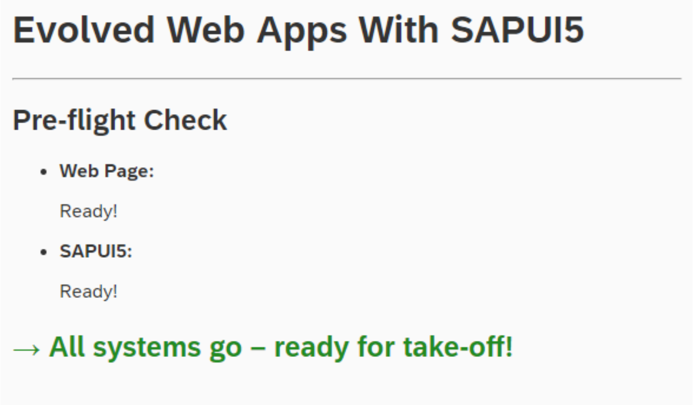
Name	Status	Type	Initiator	Size	Time	Water
index.broken.html?hc_orionpath...	302	x-www-f...	accounts.sap.co...	954 B	64 ms	
index.broken.html?hc_orionpath...	200	document	index.broken.ht...	914 B	564 ms	
sap-ui-core.js	404	script	index.broken.ht...	205 B	257 ms	
72-Regular.woff2	200	font	index.broken.ht...	(from m...	0 ms	
72-Bold.woff2	200	font	index.broken.ht...	(from m...	0 ms	
detectUI5.js	200	script	detectUI5.js:13	2.7 KB	6 ms	

Explanation	Screenshot
18. Have a look at the URL	 Name index.broken.html?hc_o... index.broken.html?hc_o... sap-ui-core.js 72-Regular.woff2 72-Bold.woff2 detectUI5.js × Headers Preview Response Timing ▾ General **Request URL:** https://webidetesting1253531-d045752trial.dispatcher.hanatrial.ondemand.com/..resources/sap-ui-core.js **Request Method:** GET **Status Code:** ● 404 **Remote Address:** 155.56.219.29:443 **Referrer Policy:** no-referrer-when-downgrade

webapp/index.broken.html

```
<!DOCTYPE HTML>
<head>
   <meta charset="UTF-8">
   <title>openSAP - Evolved Web Apps with SAPUI5</title>
   <link rel="stylesheet" type="text/css"
href="../../resources/sap/ui/core/themes/sap_belize/library.css">
   <script id="sap-ui-bootstrap"
      data-sap-ui-libs="sap.m"
      src="../../resources/sap-ui-core.js"
      data-sap-ui-theme="sap_belize">
   </script>
…
```

Fix the missing “/” in the UI5 bootstrap path. After a reload, you get the *Ready!* signal on your page.



Evolved Web Apps With SAPUI5

Pre-flight Check

- **Web Page:**

  Ready!

- **SAPUI5:**

  Ready!

→ All systems go – ready for take-off!

RELATED MATERIAL

- Chrome DevTools Documentation
- ESLint Homepage
- Demo Kit: Troubleshooting Tutorial
- Demo Kit: Troubleshooting Essentials Guide
- Demo Kit: Development Conventions and Guidelines

Coding Samples

Any software coding or code lines/strings (“Code”) provided in this documentation are only examples and are not intended for use in a production system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules for certain SAP coding. SAP does not warrant the correctness or completeness of the Code provided herein and SAP shall not be liable for errors or damages cause by use of the Code, except where such damages were caused by SAP with intent or with gross negligence.

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