UI5 Spreadsheet Importer V1

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Initial Situation

- **Challenge**: Need for an Excel upload function in a UI5 application for a client
- It should be integrated into several apps
- From the very beginning, it was planned as an open-source project

Development Goals

- Easy integration into UI5 applications (like "out-of-the-box" solutions).
- Compatibility with various UI5/Fiori scenarios, SAP platforms, and OData versions.
- Flexibility and extensive customization options.
- Comprehensive documentation and testing.

Motivation: Increase efficiency for developers through reusability and easy integration.

UI5 Spreadsheet Importer

Apache-2.0 license

Landing Page: https://spreadsheet-importer.com/

Live Demo: https://livedemo.spreadsheet-importer.com/

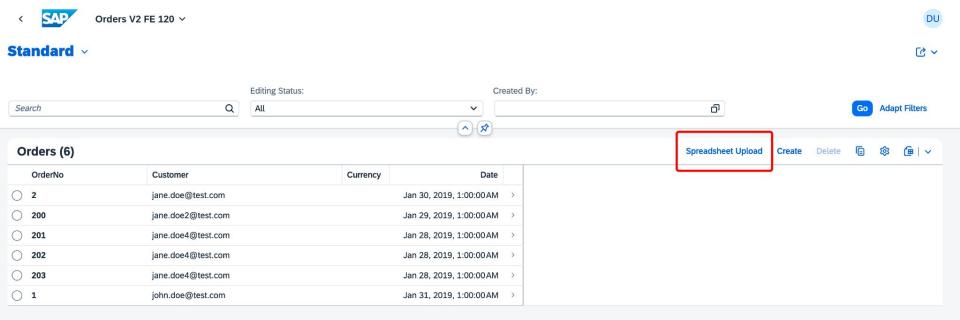Dokumentation: https://docs.spreadsheet-importer.com/

GitHub:
https://github.com/spreadsheetimporter/ui5-cc-spreadsheetimporter

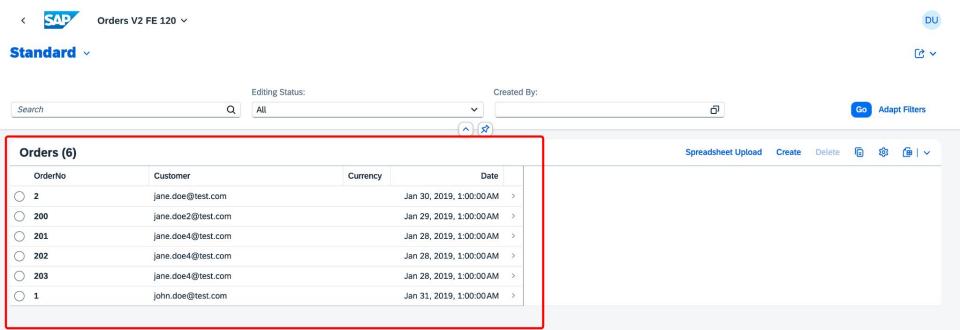npm: https://www.npmjs.com/package/ui5-cc-spreadsheetimporter

Use Cases

- Fiori elements (V2/V4)
- Freestyle (V2/V4)
- [SAP Standard UI5 Apps](#)
- OpenUI5
- ECC
- S/4HANA On-Premise/Private/Public
- BTP

How Does It Work?

< ![SAP] Orders V2 FE 120 ⌄   DU

Standard ⌄   🔗⌄

	Editing Status:	Created By:	
🔍 Search	All ⌄	🗗	**Go** **Adapt Filters**

⌃ 📌

Orders (6)				**Spreadsheet Upload** Create Delete 🗗 ⚙ 🗐	⌄

	OrderNo	Customer	Currency	Date	
○	**2**	jane.doe@test.com		Jan 30, 2019, 1:00:00 AM	>
○	**200**	jane.doe2@test.com		Jan 29, 2019, 1:00:00 AM	>
○	**201**	jane.doe4@test.com		Jan 28, 2019, 1:00:00 AM	>
○	**202**	jane.doe4@test.com		Jan 28, 2019, 1:00:00 AM	>
○	**203**	jane.doe4@test.com		Jan 28, 2019, 1:00:00 AM	>
○	**1**	john.doe@test.com		Jan 31, 2019, 1:00:00 AM	>

How Does It Work?

How Does It Work?

```xml
        <End Role="currencies_texts" EntitySet="currencies_texts"/>
    </AssociationSet>
</EntityContainer>
<EntityType Name="Orders">
  <Key>
      <PropertyRef Name="ID"/>
      <PropertyRef Name="IsActiveEntity"/>
  </Key>
  <Property Name="ID" Type="Edm.Guid" Nullable="false"/>
  <Property Name="createdAt" Type="Edm.DateTimeOffset" Precision="7"/>
  <Property Name="createdBy" Type="Edm.String" MaxLength="255"/>
  <Property Name="modifiedAt" Type="Edm.DateTimeOffset" Precision="7"/>
  <Property Name="modifiedBy" Type="Edm.String" MaxLength="255"/>
  <Property Name="OrderNo" Type="Edm.String" MaxLength="22"/>
  <NavigationProperty Name="Items" Relationship="OrdersService.OrderItems_order" FromRole="Orders" ToRole="OrderItems"/>
  <NavigationProperty Name="Shipping" Relationship="OrdersService.ShippingDetails_order" FromRole="Orders" ToRole="ShippingDetails"/>
  <Property Name="buyer" Type="Edm.String" MaxLength="255"/>
  <NavigationProperty Name="currency" Relationship="OrdersService.Orders_currency" FromRole="Orders" ToRole="Currencies"/>
  <Property Name="currency_code" Type="Edm.String" MaxLength="3"/>
  <Property Name="spreadsheetRow" Type="Edm.Int32"/>
  <Property Name="IsActiveEntity" Type="Edm.Boolean" Nullable="false"/>
  <Property Name="HasActiveEntity" Type="Edm.Boolean" Nullable="false"/>
  <Property Name="HasDraftEntity" Type="Edm.Boolean" Nullable="false"/>
  <NavigationProperty Name="DraftAdministrativeData" Relationship="OrdersService.Orders_DraftAdministrativeData" FromRole="Orders" ToRole="DraftAdministrativeData"/>
  <Property Name="DraftAdministrativeData_DraftUUID" Type="Edm.Guid"/>
  <NavigationProperty Name="SiblingEntity" Relationship="OrdersService.Orders_SiblingEntity" FromRole="Orders" ToRole="Orders1"/>
</EntityType>
<EntityType Name="OrderItems">
  <Key>
      <PropertyRef Name="ID"/>
      <PropertyRef Name="IsActiveEntity"/>
  </Key>
  <Property Name="ID" Type="Edm.Guid" Nullable="false"/>
  <NavigationProperty Name="order" Relationship="OrdersService.OrderItems_order" F
```
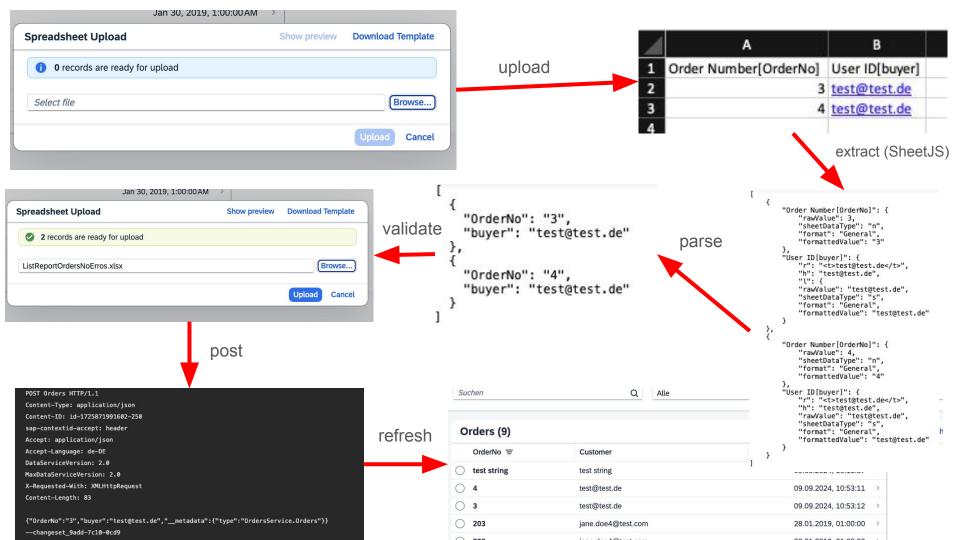
	A	B	C	D	E
1	Order Number[OrderNo]	User ID[buyer]			
2	3	test@test.de			
3	4	test@test.de			
4					

Jan 30, 2019, 1:00:00AM

Spreadsheet Upload Show preview   Download Template

ℹ️ **0** records are ready for upload

Select file   Browse...

Upload   Cancel

upload

	A	B
1	Order Number[OrderNo]	User ID[buyer]
2	3	test@test.de
3	4	test@test.de
4		

extract (SheetJS)

Jan 30, 2019, 1:00:00AM

Spreadsheet Upload   Show preview   Download Template

✅ **2** records are ready for upload

ListReportOrdersNoErros.xlsx   Browse...

Upload   Cancel

validate

```
[
    {
        "OrderNo": "3",
        "buyer": "test@test.de"
    },
    {
        "OrderNo": "4",
        "buyer": "test@test.de"
    }
]
```

parse

```
[
    {
        "Order Number[OrderNo]": {
            "rawValue": 3,
            "sheetDataType": "n",
            "format": "General",
            "formattedValue": "3"
        },
        "User ID[buyer]": {
            "r": "<t>test@test.de</t>",
            "h": "test@test.de",
            "l": {
                "rawValue": "test@test.de",
                "sheetDataType": "s",
                "format": "General",
                "formattedValue": "test@test.de"
            }
        },
    },
    {
        "Order Number[OrderNo]": {
            "rawValue": 4,
            "sheetDataType": "n",
            "format": "General",
            "formattedValue": "4"
        },
        "User ID[buyer]": {
            "r": "<t>test@test.de</t>",
            "h": "test@test.de",
            "rawValue": "test@test.de",
            "sheetDataType": "s",
            "format": "General",
            "formattedValue": "test@test.de"
        }
    }
]
```

post

```
POST Orders HTTP/1.1
Content-Type: application/json
Content-ID: id-1725871991602-250
sap-contextid-accept: header
Accept: application/json
Accept-Language: de-DE
DataServiceVersion: 2.0
MaxDataServiceVersion: 2.0
X-Requested-With: XMLHttpRequest
Content-Length: 83

{"OrderNo":"3","buyer":"test@test.de","__metadata":{"type":"OrdersService.Orders"}}
--changeset_9add-7c10-0cd9
```

refresh

Suchen 🔍   Alle

Orders (9)

OrderNo ≡	Customer	
○ **test string**	test string	
○ 4	test@test.de	09.09.2024, 10:53:11 >
○ 3	test@test.de	09.09.2024, 10:53:12 >
○ 203	jane.doe4@test.com	28.01.2019, 01:00:00 >

Use Cases

- Fiori elements (V2/V4)
- Freestyle (V2/V4)
- [SAP Standard UI5 Apps](#)
- OpenUI5
- ECC
- S/4HANA On-Premise/Private/Public
- BTP
- **[Upload to any OData API](#)**

Features

- Backend Agnostic
- All LTS UI5 Versions supported (from 1.71)
- Multi Language (DE, EN, ES, FR, HI, IT, JA, NL, PT, ZH)
- Template generation (include sample data)
- Preview upload data
- Validation for mandatory fields and plausible data
- Choose table of excel file
- Standalone Usage (without OData Service)

Goals Achieved?

All goals were achieved:

- Easy Integration ([negative Example](#))
  a. Positive Example in VS Code
- Integration possible everywhere
- Even more than originally anticipated

Goals Achieved?

Deployment possible everywhere

- Here, it was more difficult than expected
- The concept had to be revised
- Changes and bugs on SAP's side made it more challenging

Goals Achieved?

Comprehensive documentation and examples
End-to-end (E2E) tests implemented

- Due to complexity, fewer tests than desired

Between 300-500 weekly downloads on npmjs

Security

- Files are not sent to the backend.
- The file can be scanned before processing (e.g., with the SAP Malware Scanning Service).
- All parts are open source and visible.
- The only dependency is "SheetJS," which is always kept up to date.

Why Open Source?

Quick error detection and improvement due to broad usage.

Over 50 issues have led to improvements.

Collaboration and feedback from the developer community.

- Including help from SAP employees.

Flexibility to try out new ideas and benefit from community contributions.
Personal growth through managing the open-source project

Experiences and Lessons from Open-Source Work

Extensive usage across all SAP platforms and UI5 scenarios by external developers.

- However, this requires:
    - Actively requesting feedback.
    - Low entry barriers (easy installation, good documentation, easy debugging).
- This also results in many users without providing feedback.

Support is necessary and time-consuming.

Issue creation with a template:

Issue Template

Experiences and Lessons from Open-Source Work

Prototyping new features: Using the project as a "playground" for innovative ideas in collaboration with SAP

- This, in turn, supports open source.

Presentations (e.g., UI5con 2024):

- *Seamless Integration: Crafting the Perfect UI5 Development Environment*

Experiences and Lessons from Open-Source Work

Marketing is necessary:

- Landing page instead of just a README
- Blog articles
- Social media (Twitter, LinkedIn)
- [Best of UI5](#)
- [Best of CAP](#)
- [dotabap](#)

Insights

- A good open-source project requires time.
- Experience can be gained over time.
- Finding contributors is challenging.
- **A strong community is crucial!**

Thanks!

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Presentation: