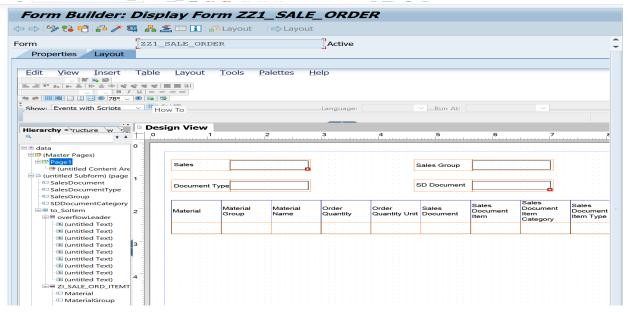
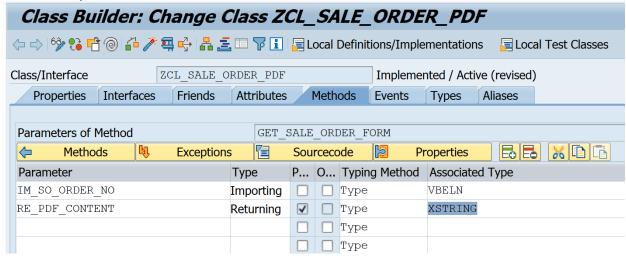
Steps to be followed.

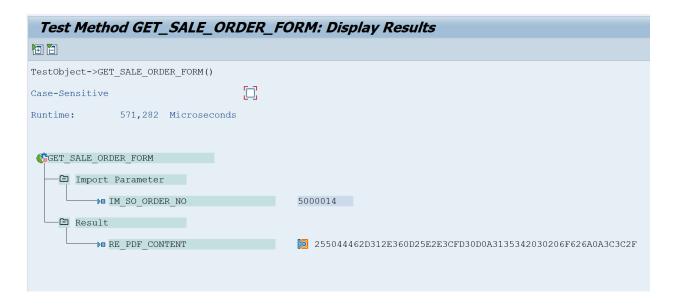
1.Develop an Adobe form and common method to give the form content output as Base64 In this example I am using XML Based form interface but it is possible to use the ABAP Dictionary based interface as well.

Form Name: ZZ1 SALE ORDER



Here I am creating a new class and build the driver Method to call the form using and return back the output form content





2.Now Let us build a RAP Application using Web UI -> Since we do not have Create, update and other functionalities, I am not creating behavior definitions.

```
Create a new base View entity: ZI RAP SALE ORD
@AbapCatalog.viewEnhancementCategory: [#NONE]
@AccessControl.authorizationCheck: #NOT REQUIRED
@EndUserText.label: 'Interface View for Sales Order'
@Metadata.ignorePropagatedAnnotations: true
@ObjectModel.usageType:{
  serviceQuality: #X,
  sizeCategory: #S,
  dataClass: #MIXED
define root view entity ZI RAP SALE ORD
as select from I SalesDocumentBasic
key SalesDocument,
   SDDocumentCategory,
   SalesDocumentType,
   CreatedByUser,
   CreationDate
}
Create a Consumption View for the Above View Entity: ZC RAP SALE ORD
@AccessControl.authorizationCheck: #NOT_REQUIRED
@EndUserText.label: 'Consumption View for Sales Order'
@Metadata.allowExtensions: true
define root view entity ZC_RAP_SALE_ORD
provider contract transactional query
as projection on ZI_RAP_SALE_ORD
  key SalesDocument,
  SDDocumentCategory,
  SalesDocumentType,
  CreatedByUser,
```

```
CreationDate
```

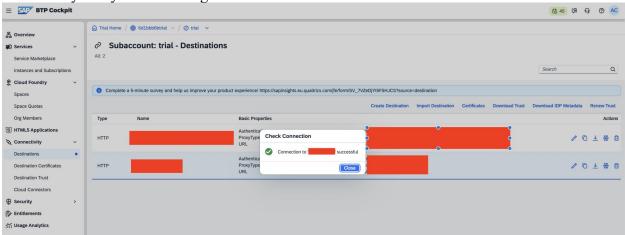
Create a Metadata Extension file for the Consumption view: ZMDE_RAP_SALE_ORD We can also directly give annotations in consumption view itself, but as best practice I am creating a new file to have these Annotation properties.

```
@Metadata.layer: #CORE
@Search.searchable: true
@UI.headerInfo:{
typeName: 'Sales Order',
 typeNamePlural: 'Sale Orders',
 title:{ type:#STANDARD,
  label:'Document',
  value: 'SalesDocument'}
annotate view ZC RAP SALE ORD with
 @UI:{ lineItem: [{ position : 10}] }
 @Search: { defaultSearchElement: true,
      fuzzinessThreshold: 0.7 }
 SalesDocument;
 @UI:{ lineItem: [{ position : 20}],
    selectionField: [{ position : 20 }] }
 @Search: { defaultSearchElement: true,
       fuzzinessThreshold: 0.7 }
 SDDocumentCategory;
 @UI:{ lineItem: [{ position : 30}] }
 @Search: { defaultSearchElement: true,
       fuzzinessThreshold: 0.7 }
 SalesDocumentType;
 @UI:{ lineItem: [{ position : 40}],
  selectionField: [{ position : 40 }] }
 CreatedByUser;
 @UI:{ lineItem: [{ position : 50}],
  selectionField: [{ position : 50 }] }
 CreationDate:
}
Create a new service definition for the Consumption View: ZSDEF ZC RAP SALE ORD
@EndUserText.label: 'Service Definition for Sale Order'
define service ZSDEF_ZC_RAP_SALE_ORD {
 expose ZC_RAP_SALE_ORD;
```

Create a new Service Bindings for the Service Definition: ZBIND_ZC_RAP_SALE_ORD of binding type ODATA V2 - UI and publish it. We can get the Metadata using Service URL



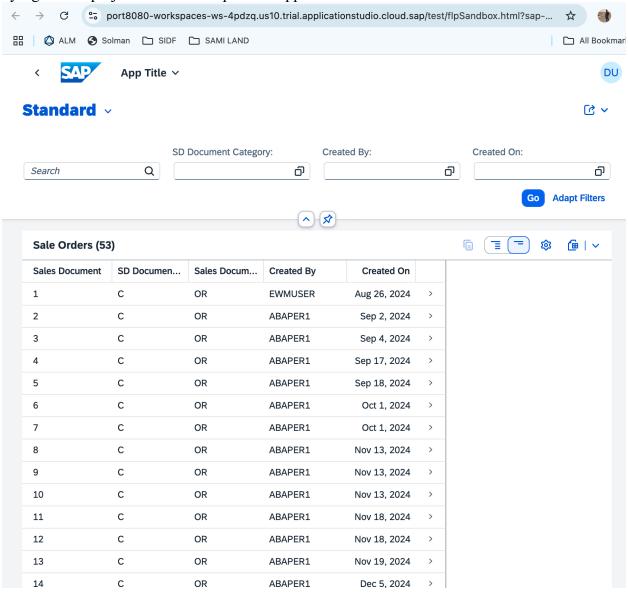
Create a new Fiori Application in Business Application Studio, Open BTP in Trail account and make sure your system is configured in Destinations



3.Create a new Fiori Application using the template and use our above ODATA V2-UI service in BAS

NO		
	← → Search	
□ Project From Template ×		
SAP Fiori generator ①		
Select Template and Target Location SAP First generator Template Selection Template List Report Page Data Source and Service Selection Data Source Connect to a System System.	Project Attributes Configure the main project attributes. Module name ① * project1 Application stite ② App Title Application namespace ③	
Service: ZBIND_ZC_RAP_SALE_ORD (1) - OData V2		
Entity Selection Main Entity: ZC_RAP_SALE_ORD	Description ② An SAP Fiori application.	
Table Type: Responsive	Project folder path *	
O Project Attributes	/home/user/projects	
Module Name: project1 Application Title: App Title	Minimum SAPUI5 version	~
Application Namespace: Description: An SAP Fiori application.	Enable TypeScript ○ Yes	
More	Add deployment configuration Yes No	
	Add FLP configuration	
	Sack Finish (i) The generated project will not open in a stand-alone folder.	

Once the Project is created and all the dependencies is installed. You can preview the application by right click project1 and choose preview application -> start Fiori-run



Now our RAP Application is ready and separate form driver program is also ready. Let us see on how to integrate it. This Integration can be Done by the following two ways

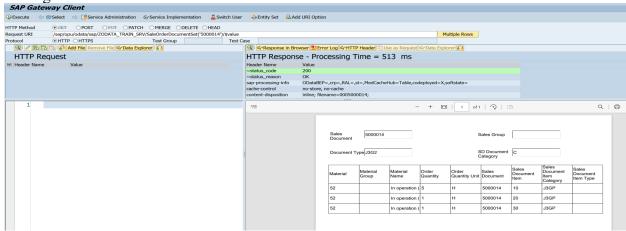
- → Using SEGW ODATA -> GET STREAM
- → Using Custom View Entity that is implemented by ABAP class using Object model query

4.Create a New SEGW ODATA Project and Implement GET Stream method That consumes the common driver program and send back the content

Entity properties **Properties** Max L... Unit Pr... Creat... Updat.. Is Key Edm T... Prec. Scale ■ Name docId Edm.St... 0 0 **V** value Edm.St... 0 0 0 0 mimeType Edm.St... 0 0 fileName Edm.St... 0 0 0

GET Stream Code:

Testing the SEGW ODATA Service



```
Add the Following line in the Interface View:ZI RAP SALE ORD
  We are adding two fields
 ShowPDF -> Has the text Preview(SEGW) in the table
 LinkToPDF -> Get Stream Link to be used to navigate as link to open PDF File
Lines:
'Preview(SEGW)' as ShowPDF,
concat('/sap/opu/odata/sap/ZODATA_TRAIN_SRV/SaleOrderDocumentSet("',
   concat(SalesDocument, "")/$value")) as LinkToPDF
  define root view entity ZI_RAP_SALE_ORD
   as select from I_SalesDocumentBasic
1
2
    key SalesDocument,
3
4
         SDDocumentCategory,
5
         SalesDocumentType,
         CreatedByUser,
6
         CreationDate,
8
         'Preview(SEGW)' as ShowPDF,
         concat('/sap/opu/odata/sap/ZODATA_TRAIN_SRV/SaleOrderDocumentSet(''',
9
0
         concat(SalesDocument, ''')/$value')) as LinkToPDF
1
   }
```

Add the Following highlighted Line in the Consumption view ZC_RAP_SALE_ORD to expose the fields

```
@AccessControl.authorizationCheck: #NOT_REQUIRED
@EndUserText.label: 'Consumption View for Sales Order'
@Metadata.allowExtensions: true
define root view entity ZC_RAP_SALE_ORD
provider contract transactional_query
as projection on ZI_RAP_SALE_ORD
{
    key SalesDocument,
    SDDocumentCategory,
    SalesDocumentType,
    CreatedByUser,
    CreationDate,
    ShowPDF,
    LinkToPDF
}
```

Add the Following Lines in the Metadata extension file to establish the link to:

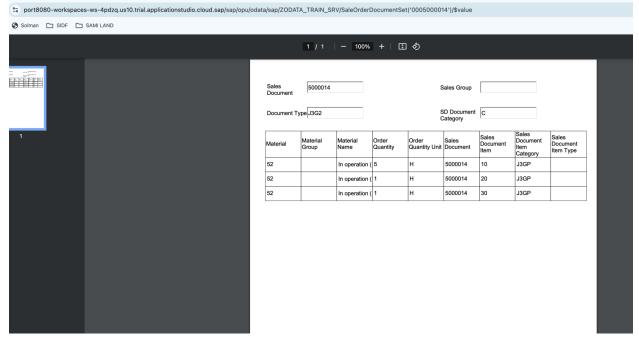
```
@UI:{
lineItem: [{ position : 60, label : 'PDF'}, { type : #WITH_URL, url:'LinkToPDF' }]
}
ShowPDF;
```

```
@Metadata.layer: #CORE
@Search.searchable: true
@UI.headerInfo:{
   typeName: 'Sales Order',
typeNamePlural: 'Sale Orders',
title:{ type:#STANDARD,
   label:'Document',
   value:'SalesDocument'}
annotate view ZC_RAP_SALE_ORD with
   @UI:{ lineItem: [{ position : 10}] }
@Search:{ defaultSearchElement: true,
fuzzinessThreshold: 0.7 }
   SalesDocument;
   SDDocumentCategory;
   @UI:{ lineItem: [{ position : 30}] }
@Search:{ defaultSearchElement: true,
fuzzinessThreshold: 0.7 }
   SalesDocumentType;
   @UI:{ lineItem: [{ position : 40}],
    selectionField: [{ position : 40 }] }
   CreatedByUser;
   @UI:{ lineItem: [{ position : 50}],
   selectionField: [{ position : 50 }] }
   CreationDate;
     lineItem: [{ position : 60, label : 'PDF'}, { type : #WITH_URL, url:'LinkToPDF' }]
   ShowPDF;
```

Testing the RAP Application- Now we can see the New Field as clickable link andard •

	SD Document Category:					
arch		Q			ට	
ale Orders (53)						
Sales Document	SD Documen	Sales Docum	Created By	Created On	PDF	
1	С	OR	EWMUSER	Aug 26, 2024	Preview(SEGW)	>
2	С	OR	ABAPER1	Sep 2, 2024	Preview(SEGW)	>
3	С	OR	ABAPER1	Sep 4, 2024	Preview(SEGW)	>
4	С	OR	ABAPER1	Sep 17, 2024	Preview(SEGW)	>
5	С	OR	ABAPER1	Sep 18, 2024	Preview(SEGW)	>
6	С	OR	ABAPER1	Oct 1, 2024	Preview(SEGW)	>
7	С	OR	ABAPER1	Oct 1, 2024	Preview(SEGW)	>
8	С	OR	ABAPER1	Nov 13, 2024	Preview(SEGW)	>
9	С	OR	ABAPER1	Nov 13, 2024	Preview(SEGW)	>
10	С	OR	ABAPER1	Nov 13, 2024	Preview(SEGW)	>
11	С	OR	ABAPER1	Nov 18, 2024	Preview(SEGW)	>
12	С	OR	ABAPER1	Nov 18, 2024	Preview(SEGW)	>
13	С	OR	ABAPER1	Nov 19, 2024	Preview(SEGW)	>
14	С	OR	ABAPER1	Dec 5, 2024	Preview(SEGW)	>
15	С	OR	ABAPER1	Dec 11, 2024	Preview(SEGW)	>
16	С	OR	ABAPER1	Dec 11, 2024	Preview(SEGW)	>

On clicking the Link, the SEGW Service is called and PDF is shown



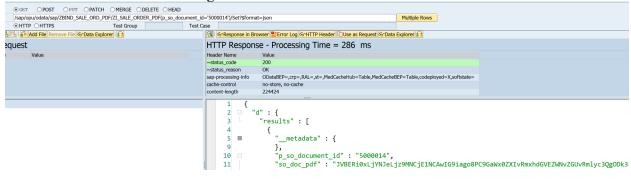
5. Using Custom View Entity that is implemented by ABAP class using Object model query

```
Create a new Custom View Entity: ZI SALE ORDER PDF
@EndUserText.label: 'Sale Order PDF'
@ObjectModel.query.implementedBy: 'ABAP:ZCL SALE ORDER PDF'
define custom entity ZI_SALE_ORDER_PDF
with parameters
p_so_document_id : vbeln
 key so_doc_pdf : abap.string(0);
Create a new Class: ZCL SALE ORDER PDF and use interface
IF RAP QUERY PROVIDER and redefine the Select method
class ZCL_SALE_ORDER_PDF definition
 public
 final
create public.
public section.
 interfaces IF_RAP_QUERY_PROVIDER.
 PROTECTED SECTION.
 PRIVATE SECTION.
ENDCLASS.
CLASS ZCL_SALE_ORDER_PDF IMPLEMENTATION.
```

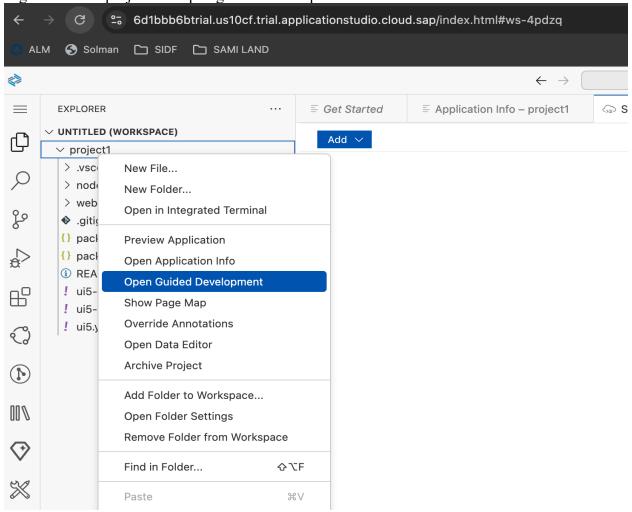
METHOD if_rap_query_provider~select.
""->Internal Table Declaration

```
DATA: lt_pdf TYPE TABLE OF zi_sale_order_pdf.
  ""->Object Declaration
  DATA: lo somu form services TYPE REF TO cl somu form services.
  DATA: lv_form_out TYPE string.
  TRY.
    IF io_request->is_data_requested( ).
      DATA(lv_offset) = io_request->get_paging()->get_offset().
      DATA(lv_page_size) = io_request->get_paging()->get_page_size().
      DATA(lv_max_rows) = COND #( WHEN lv_page_size = if_rap_query_paging=>page_size_unlimited
                        THEN 0 ELSE ly page size).
        DATA(lt_params) = io_request->get_parameters().
        ""->Take the Input Parameter Name from Custom Entity which is using this ABAP Class
        DATA(lv so doc id) = VALUE numc10(
              lt_params[ parameter_name = 'P_SO_DOCUMENT_ID' ]-value OPTIONAL ).
        ""->Call the PDF Content Common Driver Method
        data(lv_so_form) = get_sale_order_form( im_so_order_no = conv #( lv_so_doc_id ) ).
        IF lv_so_form IS NOT INITIAL.
         ""->Convert Xstring to Base64
         CALL FUNCTION 'SCMS_BASE64_ENCODE_STR'
           EXPORTING
            input = lv so form
           IMPORTING
            output = lv form out.
        ENDIF.
        lt_pdf = VALUE #( ( so_doc_pdf = lv_form_out ) ).
        io response->set total number of records(1).
        io response->set data(lt pdf).
    ENDIF.
   CATCH cx_rap_query_provider.
  ENDTRY.
 ENDMETHOD.
ENDCLASS.
Create a new Service Definition for the Custom Entity: ZSDEF SALE ORD PDF
@EndUserText.label: 'Service Definition for Sale Order PDF'
define service ZSDEF SALE ORD PDF {
 expose ZI_SALE_ORDER_PDF;
Create a new Service binding for the Custom Entity of type ODATA V2 Web API and publish it
Service Binding: ZBIND_SALE_ORD_PDF
                                                                                                        General Information
 This section describes general information about this service binding
 Binding Type: OData V2 - Web API
 Service Versions
                                                          Service Version Details
 Define service versions associated with the service binding
                                                          View information on selected service version
                                                                                                         Unpublish
 type filter tex
                                                          Local Service Endpoint: Published
                                                           Service Information
                                                 Add..
             API State
                         Service Definition
                                                           Service URL: /sap/opu/odata/sap/ZBIND_SALE_ORD_PDF
                                                 Remove
                                                           Entity Set and Association
                                                             ZI_SALE_ORDER_PDFSet
```

Test the Service Definition using Service URL:

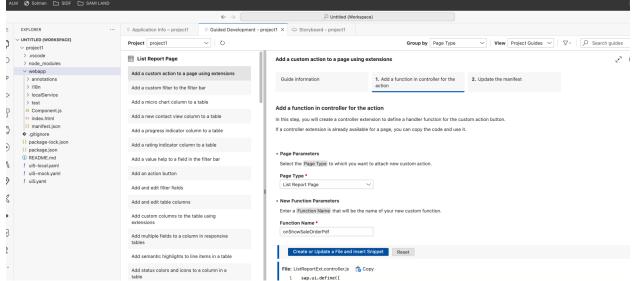


Since we get the Data in Base64 format we need to create a extension in the UI application. Right Click the project and open guided Development



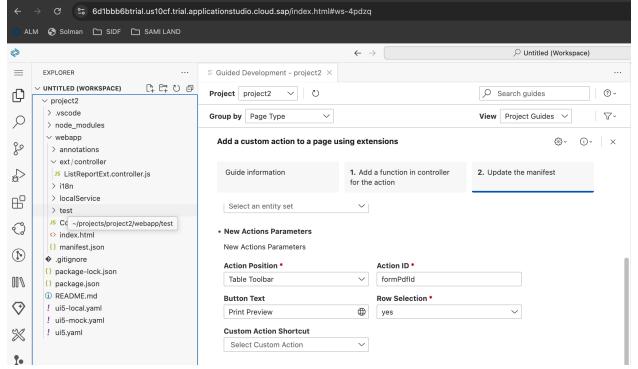
Choose the "1. Add Custom Action to page Using Extensions", then give the Function Name and

click on create. This will add a new Controller file in the project



Now Choose the "2. Update the manifest", then give the Entity Set as the root entity set, Action

Id, Row selection and Button text. Then click insert snippet



Extensions will be added by guided development in manifest file

Need to add the following lines in the Manifest.json file

->In the dataSources property:

```
"dataSources": {
    "mainService": {
       "uri": "/sap/opu/odata/sap/ZBIND_ZC_RAP_SALE_ORD/",
       "type": "OData",
       "settings": {
            "annotations": [
               "ZBIND_ZC_RAP_SALE_ORD_VAN",
                "annotation"
           "localUri": "localService/metadata.xml",
           "odataVersion": "2.0"
    "ZBIND_ZC_RAP_SALE_ORD_VAN": {
        "uri": "/sap/opu/odata/IWFND/CATALOGSERVICE;v=2/Annotations(TechnicalName='ZBIND_ZC_RAP_SALE_ORD_VAN',Version='0001')/$value/",
        "type": "ODataAnnotation",
       "settings": {
           "localUri": "localService/ZBIND_ZC_RAP_SALE_ORD_VAN.xml"
     ZBIND_SALE_ORD_PDF":{
     "uri": "/sap/opu/odata/sap/ZBIND_SALE_ORD_PDF",
     "type": "OData",
     "settings": {
        "localUri": "localService/ZBIND_SALE_ORD_PDF/metadata.xml"
    'annotation": {
        "type": "ODataAnnotation",
       "uri": "annotations/annotation.xml",
       "settings": {
           "localUri": "annotations/annotation.xml"
```

->In the models property:

{} manifest.json ×

```
bapp > {} manifest.json > {} sap.ui5 > {} models
'sap.ui5": {
   },
   "models": {
       "i18n": {
           "type": "sap.ui.model.resource.ResourceModel",
           "settings": {
               "bundleName": "project4.i18n.i18n"
       },
       "": {
           "dataSource": "mainService",
           "preload": true,
           "settings": {
               "defaultBindingMode": "TwoWay",
               "defaultCountMode": "Inline",
               "refreshAfterChange": false,
               "metadataUrlParams": {
                   "sap-value-list": "none"
           }
       "oPdfModel":{
           "dataSource": "ZBIND_SALE_ORD_PDF",
           "preload": true,
           "type": "sap.ui.model.odata.v2.0DataModel",
          "settings": {
           "defaultBindingMode": "TwoWay",
           "defaultOperationModel": "Server",
           "defaultCountMode": "Request",
```

```
}
},
"@i18n": {
   "type": "sap.ui.model.resource.ResourceModel",
   "uri": "i18n/i18n.properties"
}
```

"useBatch":"false"

We can write out custom code in the added Controller file to open PDF Preview To get the PDF data from RAP ODATA Web API

```
> .vscode
                                                  ], function (MessageToast,PDFViewer) {
> node modules
                                                      'use strict';
                                                      return {

√ webapp

                                                          getPdffromOdata: function () {
                                            8
 > annotations
                                                              var oModel = this.getView().getModel("oPdfModel");
                                            9

√ ext/controller

                                            10
                                                              var oGrid = this.getView().byId("project4::sap.suite.ui.generic.template.ListReport
 JS ListReportExt.controller.is
                                            11
                                                              // get Sales Order from selected index
                                            12
                                                              var saleDocument = oGrid.getSelectedItem().getBindingContext().getObject().SalesDocument
 > i18n
                                                               return new Promise((resolve, reject) => {
                                            13
 > localService
                                                                   // Perform Read operation and pass billingdoc as parameter to URL
 > test
                                           15
                                                                  oModel.read("/ZI_SALE_ORDER_PDF(p_so_document_id="" + saleDocument + "")/Set",
 JS Component.js
                                            16
 index.html
                                            17
                                                                           success: function (oData, Response) {
                                            18
                                                                               resolve(oData);
{} manifest.json
                                            19
.gitignore
                                            20
                                                                           error: function (oError) {
{} package-lock.json
                                            21
                                                                               reject(oError);
{} package.json
                                            22
                                            23

 README.md

                                            24
! ui5-local.yaml
                                            25
! ui5-mock.yaml
                                                          onShowSaleOrderPdf: async function (oEvent) {
```

ListReportExt.controller.js

```
sap.ui.define([
  "sap/m/MessageToast",
  "sap/m/PDFViewer"
], function (MessageToast,PDFViewer) {
  'use strict';
  return {
    getPdffromOdata: function () {
       var oModel = this.getView().getModel("oPdfModel");
       var oGrid =
this.getView().byId("project4::sap.suite.ui.generic.template.ListReport.view.ListReport::ZC_RAP_SALE_ORD--
responsiveTable");
       // get Sales Order from selected index
       var saleDocument = oGrid.getSelectedItem().getBindingContext().getObject().SalesDocument;
       return new Promise((resolve, reject) => {
         // Perform Read operation and document number as parameter to URL
         oModel.read ("/ZI\_SALE\_ORDER\_PDF (p\_so\_document\_id=""+saleDocument+"")/Set",
              success: function (oData, Response) {
                resolve(oData);
              error: function (oError) {
                reject(oError);
            });
       })
    },
    onShowSaleOrderPdf: async function (oEvent) {
       var opdfViewer = new PDFViewer();
```

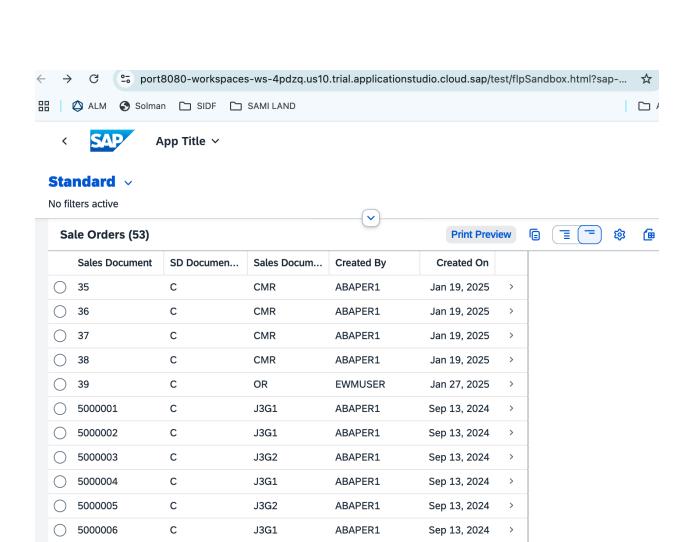
```
this.getView().addDependent(opdfViewer);
       var oBusyDialog = new sap.m.BusyDialog({
         title: 'Generating Form...'
       });
       oBusyDialog.open();
      // Get the PDF data
       var vPDF = await this.getPdffromOdata();
       let base64EncodedPDF = vPDF.results[0].so_doc_pdf;
       let decodedPdfContent = atob(base64EncodedPDF);
       let byteArray = new Uint8Array(decodedPdfContent.length);
       for (var i = 0; i < decodedPdfContent.length; <math>i++) {
         byteArray[i] = decodedPdfContent.charCodeAt(i);
       var blob = new Blob([byteArray.buffer], {
         type: 'application/pdf'
       });
       var pdfurl = URL.createObjectURL(blob);
       jQuery.sap.addUrlWhitelist("blob"); // register blob url as whitelist
       opdfViewer.setSource(pdfurl);
       opdfViewer.setVisible(true);
       opdfViewer.setTitle("Billing Document ");
       opdfViewer.open();
       oBusyDialog.close();
  };
});
Now test the Application: Print Preview Button is added
                     Created By:
                                                                         Creat
ry:
           Ų
                                                               Ų
```

You can select any Sale order to enable the Print Preview button and click it to open the PDF file

Created On

Created Ry

Print Preview



ABAPER1

ABAPER1

ABAPER1

ABAPER1

ABAPER1

SEDDE

SEDDE

SEDDE

Sep 13, 2024

Sep 26, 2024

Sep 30, 2024

Sep 30, 2024

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J3G1

J3G2

J3G1

J3G2

J3G1

J3G1

J3G2

