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software architecture and development

AI-Powered ModernAIzation of OpenEdge Applications with the SmartComponent Library

Mike Fechner
Consultingwerk

The full stack modernization framework
SmartComponent Library
by Consultingwerk

Mike Fechner



- 36 years of experience in Progress (from Version 5 to OpenEdge 13)
- Active member of the OpenEdge community and speaker at international conferences
- Expert in software architecture, object-oriented design, and web technologies

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Our Focus: Modernizing OpenEdge Applications



Modernization of Legacy OpenEdge Applications



Deep Technical Expertise



Global IT Partner with Local Presence



More than Consulting – We Deliver Tools & Solutions

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SmartComponent Library

Accelerated OpenEdge Modernization with a Full-Stack Framework

Full-stack modernization framework with a robust architectural foundation

Future-proof backend architecture as the central home for business logic and architectural base

Support for relational and object-relational (ORM) data models

Comprehensive **application framework** including: Authentication, localization, dynamic menus, workflow management, etc.

Integrated RESTful functionality – ready for modern interfaces

Versatile **user interfaces**: desktop, web, and mobile

Seamless **integration** into existing OpenEdge applications and frameworks

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SmartComponent Library Architecture

Frontends

- **OpenEdge GUI for .NET**
- **Angular Web Application (Kendo UI)**
- **RESTful Consumers**
- **MCP Server**

Backend – PASOE (OpenEdge 13.0, 12.8, 12.2 – single code base, utilizing latest language concepts)

- **ABL Foundation Classes**
  Business Entities
  Business Tasks
  Data Access, etc.
- **WebHandler / Service Interfaces**
  REST/RESTful · APSV
  SOAP · Messaging ·
  MCP
- **Supporting APIs**
  Helpers
  DI Infrastructure
  Factories, etc.
- **Framework Services**
  Authentication,
  Authorization, UI
  Repository, RI Metadata,
  Scheduler, Workflows
- **Batch / Scheduler Client**

Tooling

- Developer Tools, e.g. Business Entity Designer
- Templates and code generators, code parser & analyzer
- Unit Testing Framework, Telemetry & profiling
- DevOps scripts (Build, Test, Meta-Data versioning)

AI Support

- Framework Developer MCP Server, Application MCP Server
- Agent Skills and Rules
- Coding Agents (Claude, Copilot, Codex, …)

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The Customer Path, Accelerated by AI

Experience

- OpenEdge development and modernization since Version 5
- ADM, ADM2, Progress Dynamics, OERA
- Customer frameworks and template systems
- Legacy in the wild: include-file madness, shared variables

Modernization Strategies

- Embedded in the customer's existing ABL application
- Or side by side with the legacy system
- Incremental instead of big-bang
- Screen by screen or module by module
- Aligned with the customer's MVP definition and user journeys
- AppServer-enable the GUI application as an intermediate step towards Web

AI-Assisted Modernization

- MCP servers for deterministic legacy code modernization
- Code generators and Connectivity Framework repository for UI generation
- Provide deterministic application meta-data, e.g. Business Entity catalog
- Agent skills, instructions and rules keep code on pattern
- 6,500 class files as a modern AI reference

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Application Backend

OpenEdge-Centric Architecture



Progress Application Server

- Designed for and deployed on PASOE
- Modern, supported OpenEdge runtime



Deployment Options

- Physical or virtual servers
- Cloud-hosted environments
- Docker and Kubernetes



Multi-Tenancy

- OpenEdge Multi-Tenancy
- Multiple instances per tenant
- Company key in the database tables



Client Options

- Fat client GUI application
- Web and browser clients
- Mobile devices

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Frontend Options: SmartComponent Library

OpenEdge GUI for .NET

SmartComponent Library full-stack desktop client

Angular Web UI

SmartComponent Library for Angular with Telerik Kendo UI, full-stack



Both options share:

- Static UI definition in code, or **shared definition from the UI Repository database**
- **Similar component model** in both UI environments
- Easy to extend with **custom components**
- Shared frontend logic through **server-side event handlers**

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Frontend Options: Headless, Partner UIs and Agents



Headless Applications

Batch, scheduled and integration scenarios without a user interface



Agentic AI

AI agents as a first-class consumer through RESTful APIs and MCP, MCP Apps

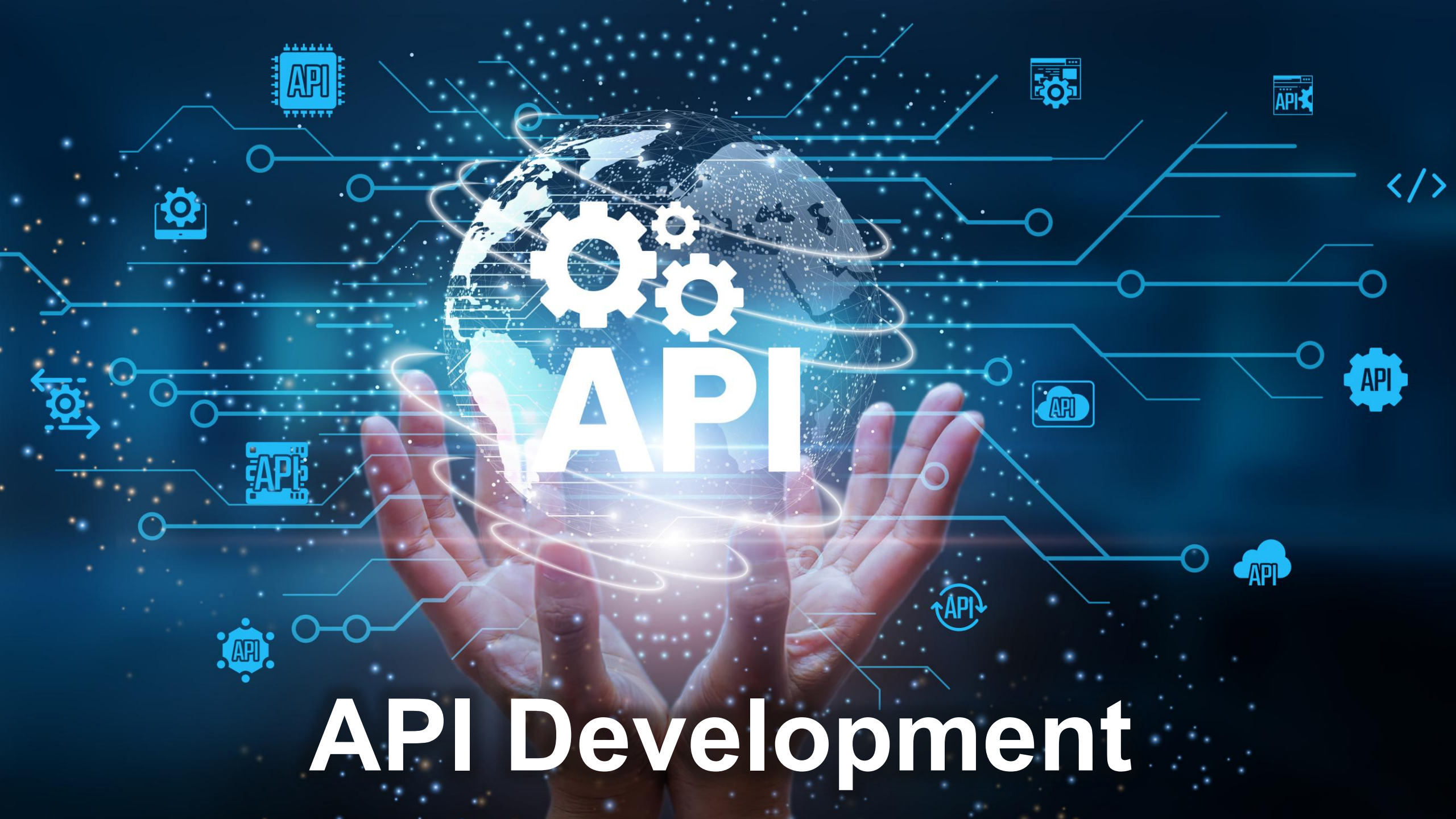
Partner User Interfaces

Third-party or customer-built frontends on top of the same business logic

BUILD.ONE

RAPID CLOUD DEVELOPMENT

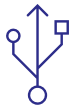
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API Development

REST/RESTful

SmartComponent Library provides the **simplest and most flexible** way of implementing **RESTful services with OpenEdge**



Typical Use Cases

- New functionality as RESTful services
- Legacy functionality exposed as REST
- Consumption of RESTful services



Out of the Box

- Open API / Swagger documentation and test suite generated automatically
- No deployment step: the code declares the API



API-First Design

- Implement services from an Open API specification
- Standard protocol for integration and UI flexibility

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AI Assisted Modernization of OpenEdge Applications (TTY, GUI, WebSpeed, …)

AI Enablement



AI First at Consultingwerk

- We have turned into a true AI-first organization
- Developers need a good excuse to code something “by hand”
- AI leads specification, planning, scheduling, development and testing
- From idea to production-ready code in minutes



Supporting the Customer's AI Enablement

- Tool strategy and MCP connectivity
- OpenEdge AI Assistant
- Definition of rules and agent instructions
- Prompting workshops
- A solid DevOps strategy as the backbone of reliable AI enablement
- Finding the best fit for AI-supported specification, analysis and design (JIRA, Confluence, Obsidian, …)

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Customer Sample – Modernization of GUI ERP

- Legacy Application mix of V8 ADM, V9 ADM2, some GUI for .NET
- German DB model, German identifiers in code
- Demand was migration of application into web browser
  - Angular Web UI of the SmartComponent Library
- Deduplication of Business Logic also huge concern
- Some changes to the DB required during modernization
  - Customer address moved from Customer master into separate table

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Demo: Sample specification prompt

/adm1-window-analyze on **Demo/Adm1Sample/w-kunde.w**

Please propose all Business Entities in a package **Demo.Adm1Sample.CustomerMaster** with a sub-package per Business Entity (the package Name does not carry the "BusinessEntity" Suffix).

The filters on MAN-ID from GetTabelleMandant can be ignored for all queries. That is the tenant filter handled by the framework. MAN-ID filters remain in query strings, when they are applied to a secondary table in the query string (left side of =) and the value (Right side of =) is that from a higher buffer in the query.

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Datei Drucken Kunden zusammenführen Extras

Update | Reset | Add | Copy | Delete | Cancel | Suchen

Kurzbezeichnung: ASB Soziale Dienste gGmbH GP, Wilkau-Haßlau | MVZ Ärztehaus Planitz II | Gelöscht | Mitglied Einkaufsgemeinschaft

Anschrift | Kont. / Kon | Abrechnun | Hinweise | RG-Empfär | Kommentar | Vertreter | Parameter | Personal | Kostenstelle | Kundenber | KD-Numme

KD-ID: 7525 Geändert von: s.duengel Geändert am: 15.10.2012 Datenursprung:

Anrede 1:
Anrede 2:
Name: ASB Soziale Dienste gGmbH
Name erster Arzt: Dr. med. Andrea Pufe
Postzusatz 1: MVZ Ärztehaus Planitz II
Postzusatz 2:
Postzusatz 3:
Staat: D
Strasse: Gewerbering 4
PLZ / Ort: 08112 Wilkau-Haßlau
Bundesland: Sachsen

Kundennummer: 940328300 GLN: 0

Kundenstatus: 2 Kunde
KV-Zuordnung: KV Sachsen,

Praxisart
- [ ] Einzelpraxis
- [x] Gemeinschaftspraxis
- [ ] Praxisgemeinschaft
- [ ] Krankenhaus
- [ ] Uniklinik
- [ ] Kunde ist Einkaufsgemeinschaft

Gueltig Von:
Gueltig Bis:

Praxistyp
- [ ] Privatpraxis
- [x] Medizinisches Versorgungszentrum

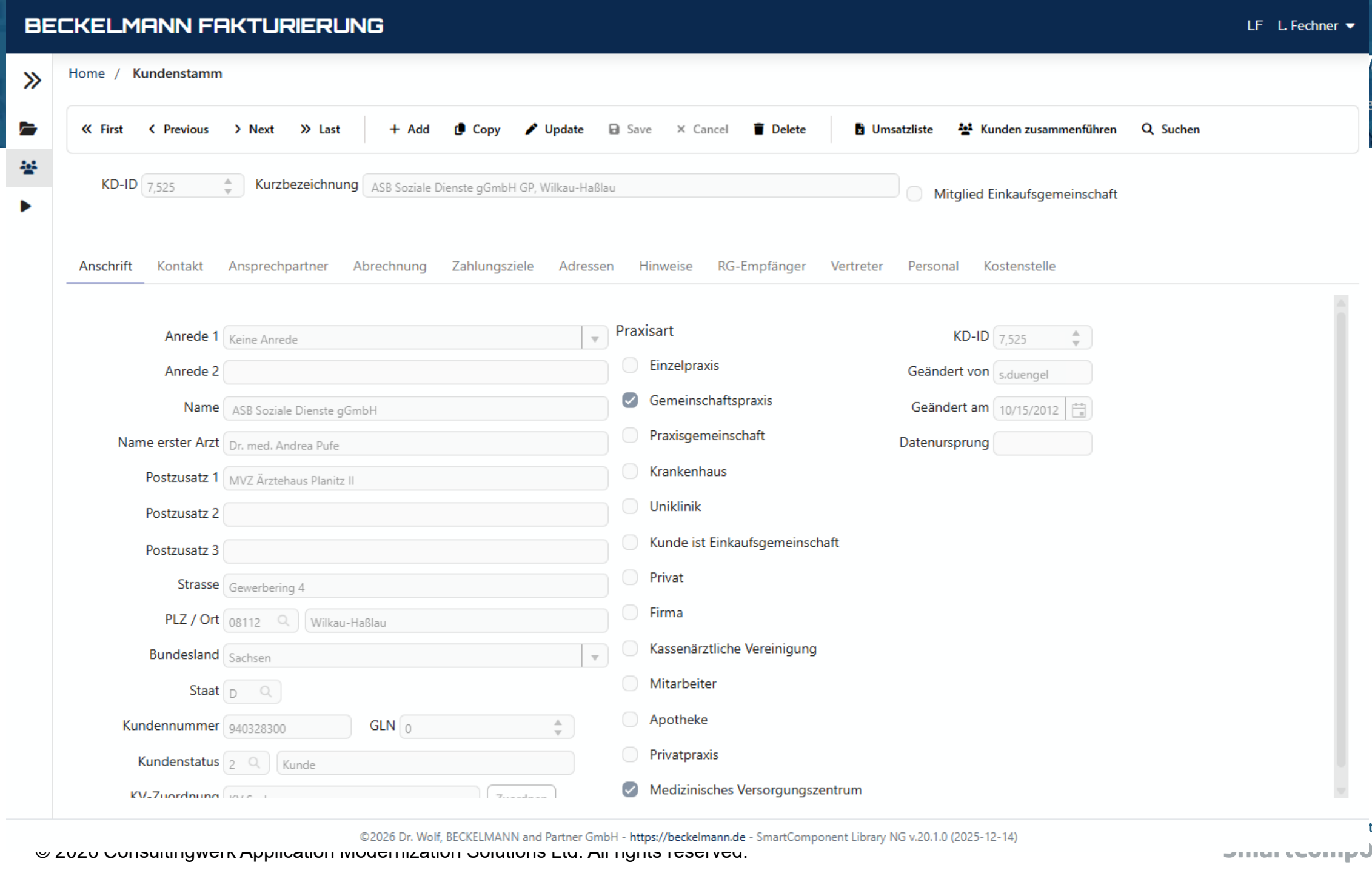
- [ ] Privatperson [ ] Firma
- [ ] Kassenärztliche Vereinigung
- [ ] Mitarbeiter [ ] Apotheke

Genehmigung gem. §52a AMG

	erforderlich	vorhanden
ja	○	○
nein	●	●

Ausgestellt am:

Bitte Daten eingeben oder mit ESC beenden.



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tion framework
SmartComponent Library

« First ‹ Previous › Next » Last | + Add | Copy | Update | Save | × Cancel | Delete | Umsatzliste | Kunden zusammenführen | Suchen

KD-ID 7,525 Kurzbezeichnung ASB Soziale Dienste gGmbH GP, Wilkau-Haßlau ☐ Mitglied Einkaufsgemeinschaft

Anschrift | Kontakt | Ansprechpartner | **Abrechnung** | Zahlungsziele | Adressen | Hinweise | RG-Empfänger | Vertreter | Personal | Kostenstelle

Betriebsstättennummer 940328300 [Verwalten]

Vertragskennzeichen

Kassen-IK/alte Arzt-Nr. [Kasse-Info]

Kostenstellennummer/-name

Abrechnungsstelle

Kassentyp Keine Kasse

Rabatt 0.00 %

Skonto 1.50 %

Zahlungsziel 30 Tage

Skonto innerhalb Tage 10 Tagen

☐ Nutze als Kostenstelle die BSNR der Praxis
☐ Abbuchung
☐ Arztnamen drucken
☑ Rechnung weitere Daten
☑ Skonto Als Rabatt
☑ Nullmehrwertsteuerkunde
☐ Anzeige alte ANR in Rechn-Pos-Auswahldialog
☐ Rechnung per Mail

IBAN:

BIC: Bank

Währungssymbol EUR

Rechnungsformular Rechnung ohne alles

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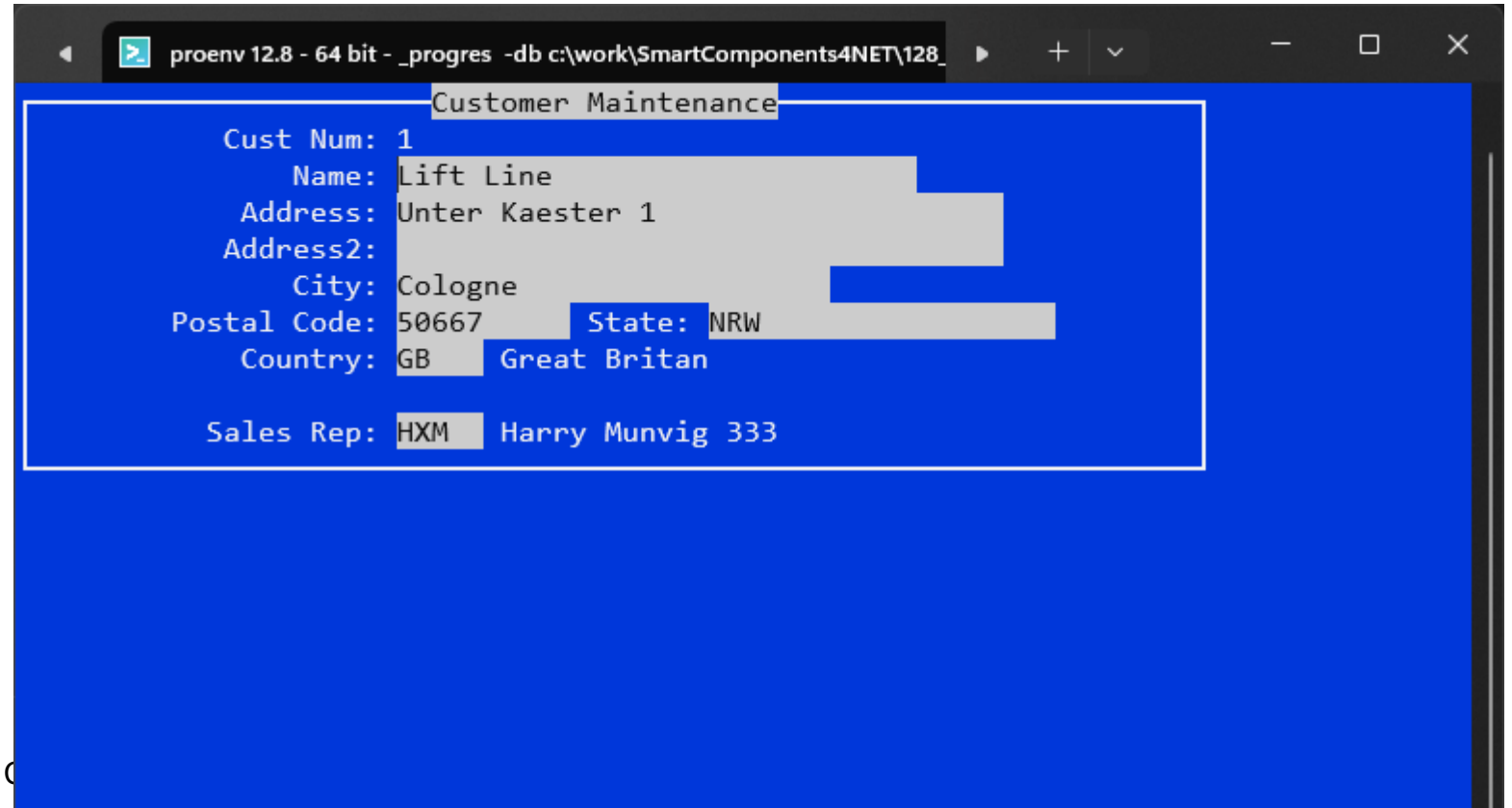
MCP Servers to improve AI experience

- AI is *not always deterministic* – that means not consistent
- You give AI two times the same task – and it may provide a different solution each time
- Solutions may (should) all be correct
- But inconsistency makes code validation and maintenance harder (for human and AI)
- MCP Servers can query and update framework database (repository)

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Refactoring Demo

- Migration of TTY style application with UPDATE EDITING Block



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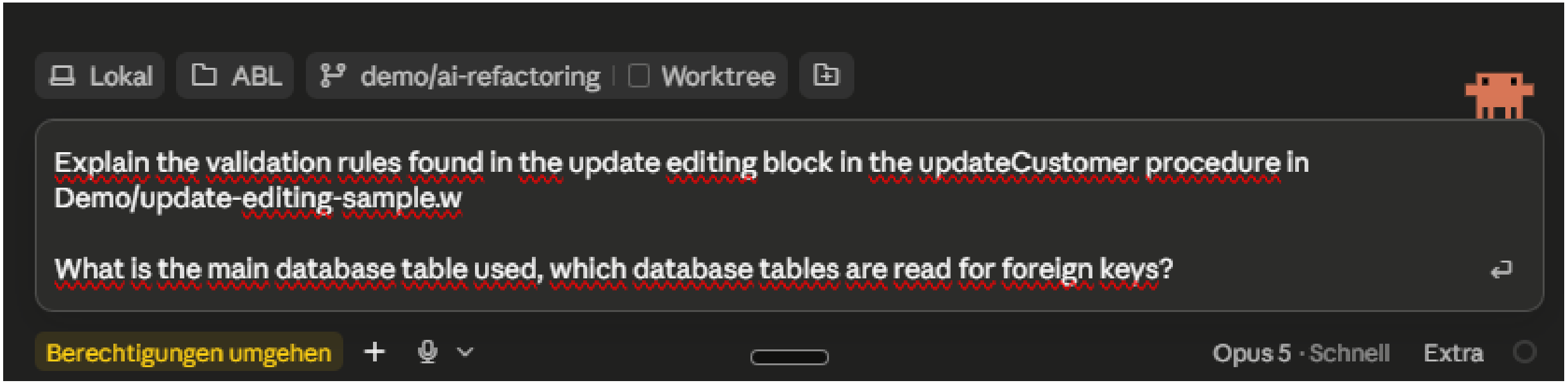
update-editing-sample.w | CustomerDemoBusinessEntity.cls

SmartComponentLibrary > Demo > update-editing-sample.w

```
374  ------------------------------------------------------------------------*/
378      DO TRANSACTION:
381          UPDATE {&ENABLED-FIELDS-IN-QUERY-DEFAULT-FRAME}
382              WITH FRAME {&FRAME-NAME}
383          blo-edit1:
384          EDITING:
385
386              READKEY.
387
388              IF FRAME-FIELD <> "" THEN w-oldf = FRAME-FIELD.
389              APPLY LASTKEY.
390
391              IF FRAME-FIELD <> w-oldf OR GO-PENDING THEN
392              DO:
393                  HIDE MESSAGE.
394
395              /* ********** begin validation code ********** */
396
397                  IF w-oldf = "Name" OR GO-PENDING THEN DO:
398
399                      IF INPUT Customer.Name = "" THEN DO:
400                          MESSAGE "Please enter customer name.".
401                          NEXT-PROMPT Customer.Name WITH FRAME {&frame-name}.
402                          NEXT blo-edit1.
403                      END.
404                  END.
405
406                  IF w-oldf = "Salesrep" OR GO-PENDING THEN DO:
407
408                      FIND Salesrep WHERE Salesrep.SalesRep = INPUT Customer.SalesRep
409                          NO-LOCK NO-ERROR .
410
411                      IF NOT AVAILABLE Salesrep THEN DO:
412                          MESSAGE SUBSTITUTE ("Please enter a valid salesrep code. &1 is not a valid salesrep code.",
413                                              INPUT Customer.Salesrep) .
414                          NEXT-PROMPT Customer.Salesrep WITH FRAME {&frame-name}.
415                          NEXT blo-edit1.
416                      END.
417                      ELSE DO:
418                          DISPLAY UPPER (Salesrep.SalesRep) @ Customer.SalesRep
419                                  Salesrep.RepName WITH FRAME {&frame-name} .
420                      END.
421                  END.
```

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The three rules

1. Name — mandatory (397)
`INPUT Customer.Name = ""` → *"Please enter customer name."* Pure non-empty check, no database access.

2. SalesRep — foreign key existence + normalization (406)
`FIND Salesrep WHERE Salesrep.SalesRep = INPUT Customer.SalesRep NO-LOCK NO-ERROR`. Not found → *"Please enter a valid salesrep code. &1 is not a valid salesrep code."* On success it does more than validate — line 418 writes the canonical value back into the screen field (`DISPLAY UPPER (Salesrep.SalesRep) @ Customer.SalesRep`) and fills in the read-only `Salesrep.RepName` next to it, so the user sees who they just picked.

3. Country — foreign key existence + normalization (423)
`FIND Country WHERE Country.Country = INPUT Customer.Country NO-LOCK NO-ERROR`. Not found → *"Please enter a valid country name"*. On success, lines 434–435 write back `Country.Country @ Customer.Country` (fixing the user's casing, since the ABL comparison is case-insensitive) and display `CountryName`.

Note the four other enabled fields — `Address`, `Address2`, `City`, `PostalCode` (65–67) — have no validation at all.

Database tables

Main table: `sports2000.Customer` — the only table updated. It is found by `CustNum` in the main block's `PROMPT-FOR … EDITING` (286), then re-found `EXCLUSIVE-LOCK` via `FIND CURRENT` for the update (379) and downgraded back to `NO-LOCK` at the end (446). The record therefore stays locked for the entire editing session.

Foreign-key lookups (both read-only, `NO-LOCK NO-ERROR`):

Table	Join	Purpose
`sports2000.Salesrep`	`Salesrep.SalesRep = Customer.SalesRep`	validate rep code, display `RepName`
`sports2000.Country`	`Country.Country = Customer.Country`	validate country, display `CountryName`

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Using the SmartframeworkMCP server, create a Business Entity called CustomerDemoBusinessEntity in the Demo.AiRefactored.Customer package for the Customer table with additional fields as required to display the foreign key tables

Create a DataSource AiDemoCustomerDataSource in the Demo product module for the Demo.AiRefactored.Customer.CustomerDemoBusinessEntity

Refactor the validation logic found in the update editing block in the updateCustomer procedure in Demo/update-editing-sample.w into the ValidateData method of the new Business Entity following the Business Entity Validation rules. Refactor database access in the validation routine to ORM wrapper

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canonical value back into the screen field (DISPLAY OFFER (Salesrep.SalesRep) @ Customer.SalesRep) and fills
in the read-only Salesrep.RepName next to it, so the user sees who they just picked.

3. Country — foreign key existence + normalization (423)
FIND Country WHERE Country.Country = INPUT Customer.Country NO-LOCK NO-ERROR. Not found → "Please enter a valid country name". On success, lines 434–435 write back Country.Country @ Customer.Country (fixing the user's casing, since the ABL comparison is case-insensitive) and display CountryName.

Note the four other enabled fields — Address, Address2, City, PostalCode (65–67) — have no validation at all.

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Foreign-key lookups (both read-only, NO-LOCK NO-ERROR):

Table	Join	Purpose
sports2000.Salesrep	Salesrep.SalesRep = Customer.SalesRep	validate rep code, display RepName
sports2000.Country	Country.Country = Customer.Country	validate country, display CountryName

Both are also read once up front with FIND … OF Customer (301–302) to populate the initial display. Country.Country is the table's primary unique index (CountryName is a separate, non-unique field), so despite the message text "valid country name" the rule actually validates against the country code/key, not CountryName.

One side effect worth knowing: these FIND statements re-position the shared Salesrep / Country record buffers that the frame's display fields are bound to. That is precisely how Salesrep.RepName and Country.CountryName refresh in the frame — but it also means a failed lookup leaves those buffers unavailable, so the descriptive fields go blank when the code is invalid.

Using the SmartframeworkMCP server, create a Business Entity called CustomerDemoBusinessEntity in the Demo.AIRefactored.Customer package for the Customer table with additional fields as required to display the foreign key tables

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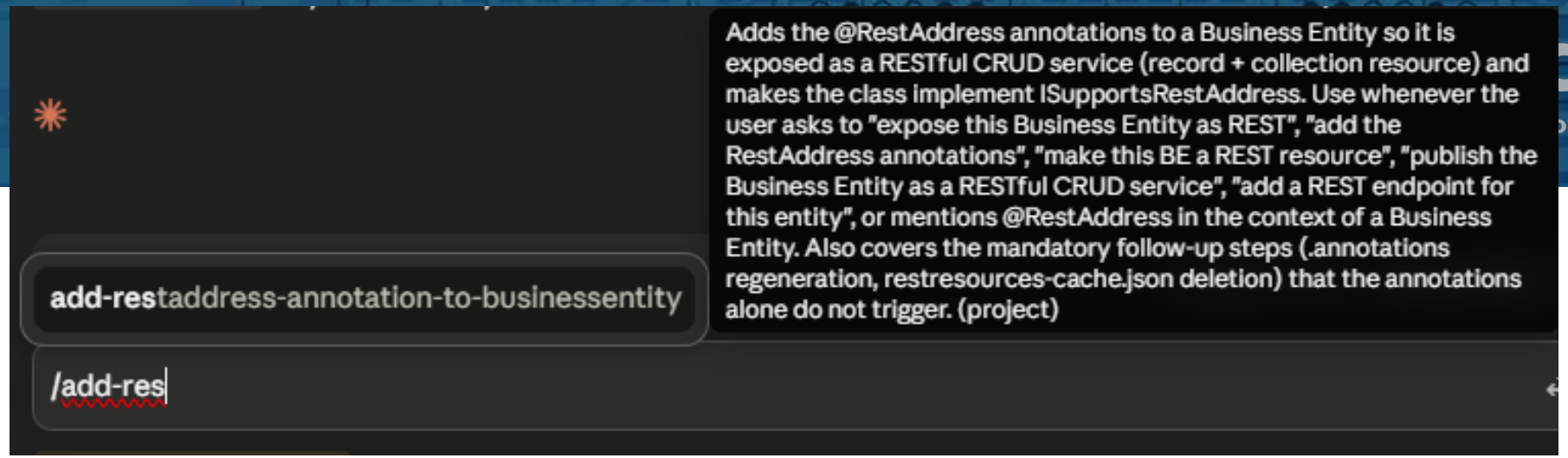
```
118     */
119    method override protected void ValidateData ():
120
121        for each eCustomer
122            where row-state (eCustomer) = row-created
123               or row-state (eCustomer) = row-modified:
124            /* The customer name is mandatory */
125            ValidationHelper:IsNotNullOrEmpty (phDatasetBuffer: buffer eCustomer:handle,
126                                               pcFieldName: "Name":u,
127                                               pcErrorMessage: "Please enter customer name."{&TRAN}) .
128
129            /* The Sales Rep has to reference an existing Salesrep record. When it
130               does, the code is normalized to upper case and the Rep Name of that
131               Salesrep is stored in the record - the UPDATE EDITING block used to
132               display those values into the frame. */
133            if oSalesrep:NewFilter (eCustomer.SalesRep) then
134                assign eCustomer.SalesRep = upper (oSalesrep:Salesrep:SalesRep)
135                       eCustomer.RepName  = oSalesrep:Salesrep:RepName .
136            else
137                DatasetHelper:AddErrorString (phBuffer: buffer eCustomer:handle,
138                                              pcErrorString: substitute (base-string: "Please enter a valid salesrep code. ~"&1~" is not a valid salesrep co
139                                                                         arg1: eCustomer.SalesRep),
140                                              pcErrorFieldName: "SalesRep":u) .
141
142            /* The Country has to reference an existing Country record. When it does,
143               the stored spelling of the Country and the Country Name of that
144               Country are stored in the record. */
145            if oCountry:NewFilter (eCustomer.Country) then
146                assign eCustomer.Country     = oCountry:Country:Country
147                       eCustomer.CountryName = oCountry:Country:CountryName .
148            else
149                DatasetHelper:AddErrorString (phBuffer: buffer eCustomer:handle,
150                                              pcErrorString: "Please enter a valid country name."{&TRAN},
151                                              pcErrorFieldName: "Country":u) .
152        end.
153
154    end method.
```

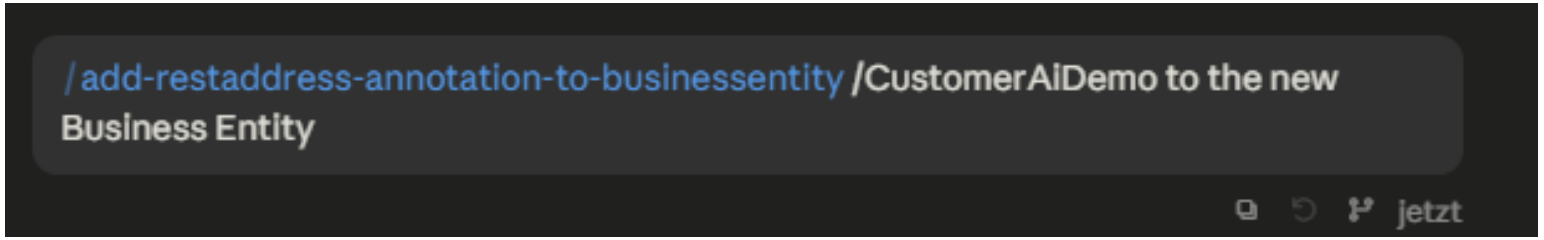
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Five minutes that feel like an eternity

- **Don’t sit and watch the agent**
  - Use the five minutes for something else: code reviews, planning the next task, a meeting, answering mail
  - The interruption costs less than staring at a progress log, and the agent keeps running unattended
- **Turn recurring AI tasks into skills**
  - Let the assistant write the skill once, from a task you have already done with it
  - Clearer instructions up front mean fewer clarifying questions and fewer wrong turns mid-run
  - Recurring decision branches are analysed in advance, so the agent does not stop to ask
- **Split large refactorings into analysis and implementation**
  - First run produces the analysis and the plan; you review it before any code is touched
  - Hand the plan over through tickets or documents, then let larger implementation tasks run against it

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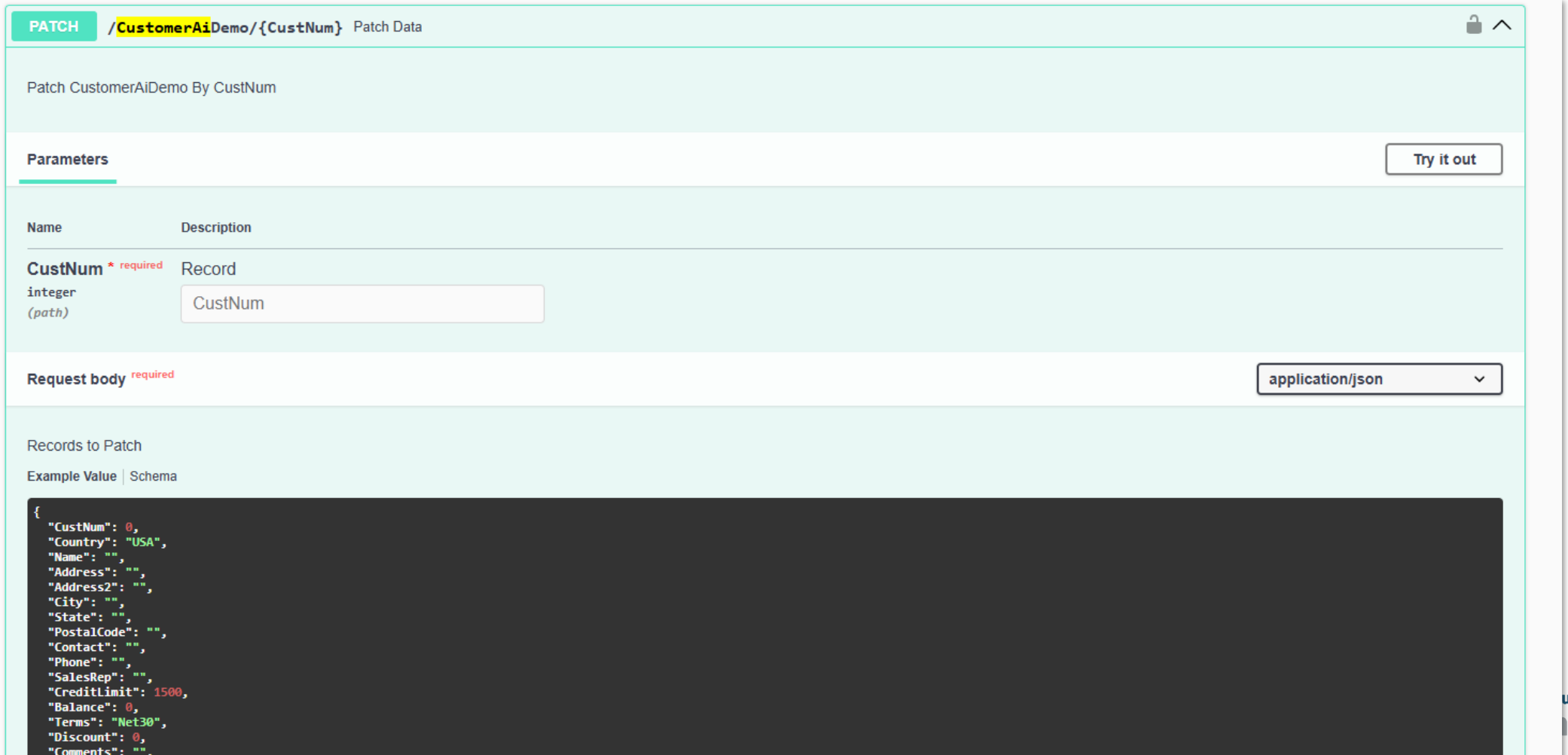



```
@RestAddress (type="record", address="/CustomerAiDemo/~{CustNum}", tables="eCustomer", id="CustNum",
              fields="eCustomer.*", canRead="true", canUpdate="true", canDelete="true",
              links="").

@RestAddress (type="collection", address="/CustomerAiDemo", tables="eCustomer", id="CustNum",
              fields="CustNum,Country,Name,Address,Address2", canCreate="true", canDelete="true",
              links="").
```

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https://sfrbo.consultingwerkcloud.com:8821/web/SwaggerEntities/html#/Demo.AiRefactored.Customer.CustomerDemoBusinessEntity/PatchCustomerAiDemoByCustNum



Curl

```
curl -X 'PATCH' \
  'https://sfrbo.consultingwerkcloud.com:8821/web/Entities/CustomerAiDemo/4' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "SalesRep": "xyz"
}'
```

Request URL

```
https://sfrbo.consultingwerkcloud.com:8821/web/Entities/CustomerAiDemo/4
```

Server response

Code	Details
400	Error: response status is 400

Response body


```
{
  "title": "An application error has occurred (Consultingwerk.Exceptions.DatasetException)",
  "error": "Consultingwerk.Exceptions.DatasetException",
  "message": "Please enter a valid salesrep code. xyz is not a valid salesrep code.",
  "messageNum": 0,
  "errorField": "SalesRep",
```


```
FIND Salesrep WHERE Salesrep.SalesRep = INPUT Customer.SalesRep
    NO-LOCK NO-ERROR .

IF NOT AVAILABLE Salesrep THEN DO:
    MESSAGE SUBSTITUTE ("Please enter a valid salesrep code. &1 is not a valid salesrep code.",
                        INPUT Customer.Salesrep) .
    NEXT-PROMPT Customer.Salesrep WITH FRAME {&frame-name}.
    NEXT blo-edit1.
END.
ELSE DO:
    DISPLAY UPPER (Salesrep.SalesRep) @ Customer.SalesRep
            Salesrep.RepName WITH FRAME {&frame-name} .
```

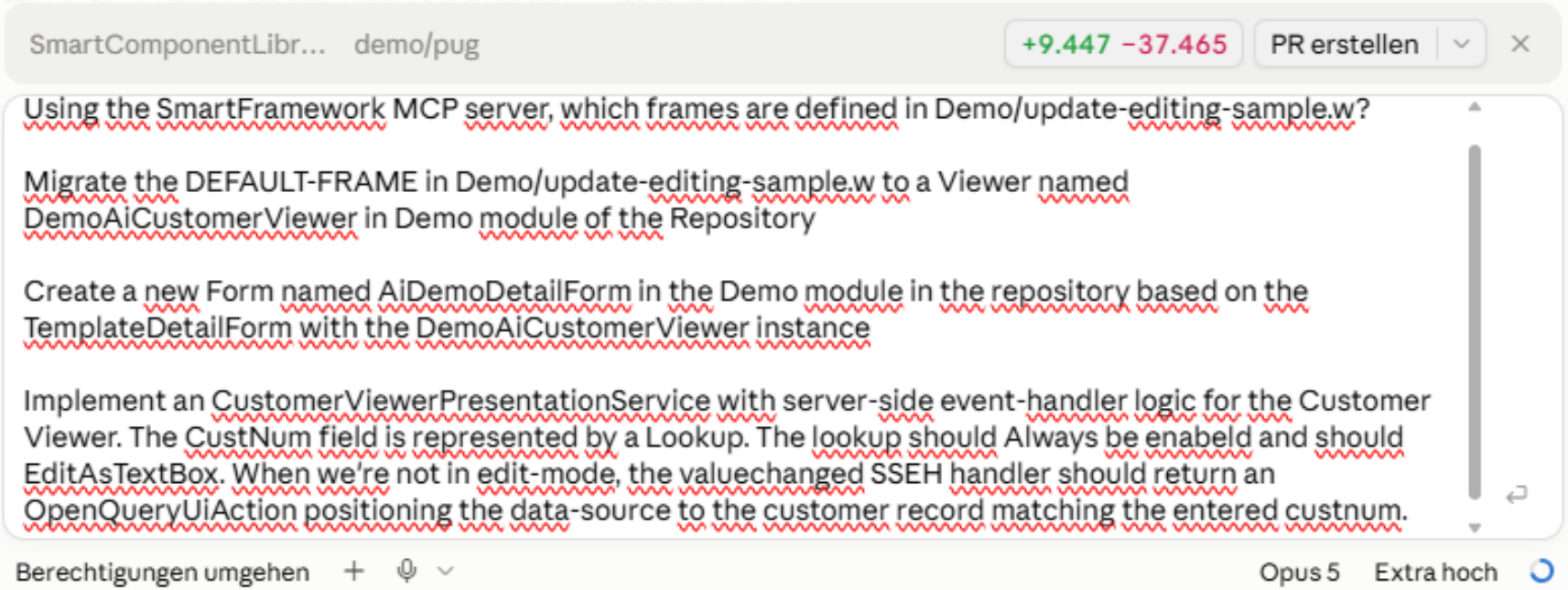
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`UseDedicatedBusinessEntity` guarded by `UseInterface <> UseInterfaceEnum:ServiceAdapter` — the framework rule for lookups from *inside* a Business Entity, which overrides the skill's "local variable per method" shape. Both models have a `SalesRep` / `Country` search constructor, so `NewFilter(key)` is the direct equivalent of the original key `FIND`.

4. `@RestAddress` — `/CustomerAiDemo`

Record `/CustomerAiDemo/~{CustNum}` (read/update/delete, `eCustomer.*`) and collection `/CustomerAiDemo` (create/delete, first five fields); class now `implements IFetchDataByReference, ISupportsRestAddress`. All three follow-ups done: build, `.annotations` regenerated (`@RestAddress` verified present), `restresources-cache.json` deleted.

Not done: trimming the `smartpas_stream` agents. The running agents still hold the old Swagger document in memory, but trimming would also drop your other PASOE sessions (including the one behind the SmartFramework MCP server), so I left that to you.



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Validation rules in updateCustomer procedure SmartComponentLibraryDev

Ausgeführt ein Befehl, verwendet ein Tool >

All four parts are done, verified, and written back to version control.

1. Frames in Demo/update-editing-sample.w

Exactly one: `DEFAULT-FRAME`.

2. Viewer — DemoAiCustomerViewer

Migrated into the **Demo** module against the `AiDemoCustomerDataSource` we built earlier. The pre-check reported *"This frame can be migrated"*, and the converter resolved the two lookup fields on its own — `Customer.Country` → `CountryLookup`, `Customer.SalesRep` → `SalesrepLookup` — each instance correctly named after its bound column. `Country.CountryName` and `Salesrep.RepName` land on the `CountryName` / `RepName` columns of our temp-table, which is exactly why that Business Entity carries those two additional fields.

CustNum is now a `CustomerLookup` instance (the MetaDataField instance was replaced), with `EnabledAlways = true`, `EditAsTextbox = true`, `LookupKeyField = CustNum`, positioned as before (X 50 / Y 0, widened to 150 for the editor button). Its `ValueChanged` is registered as `server:Demo.AiRefactored.Customer.CustomerViewerPresentationService:CustNumValueChanged`, and the master's `ServerSideEventHandler` attribute points at the same class.

3. Form — AiDemoDetailForm

Created from `TemplateDetailForm` in the **Demo** module with `DemoAiCustomerViewer` filling the `TemplateDetailViewer` placeholder. Toolbar (add/copy/update/save/cancel/delete), TableIO and FormActionTarget links came from the template.

One thing I had to fix beyond the ask: the template carries its own `CustomerDataSource` instance, which is *not* a placeholder, so it was not substituted — and it points at the demo `CustomerBusinessEntity`, whose `eCustomer` has no `CountryName` / `RepName`. The form would have failed to bind those two fields. I replaced that instance with an `AiDemoCustomerDataSource` instance and re-created the `Data` link to the viewer. I also set `DatasetControllerType` on the data source master to the generated `CustomerDemoDatasetController`.

SmartComponentLibr... demo/pug +9.763 −37.465 PR erstellen

Fix the tab order for CustNum

Berechtigungen umgehen Opus 5 Extra hoch

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Validation rules in updateCustomer procedure SmartComponentLibraryDev

3. Form — AiDemoDetailForm

Created from `TemplateDetailForm` in the **Demo** module with `DemoAiCustomerViewer` filling the `TemplateDetailViewer` placeholder. Toolbar (add/copy/update/save/cancel/delete), TableIO and FormActionTarget links came from the template.

One thing I had to fix beyond the ask: the template carries its own `CustomerDataSource` instance, which is *not* a placeholder, so it was not substituted — and it points at the demo `CustomerBusinessEntity`, whose `eCustomer` has no `CountryName` / `RepName`. The form would have failed to bind those two fields. I replaced that instance with an `AiDemoCustomerDataSource` instance and re-created the `Data` link to the viewer. I also set `DatasetControllerType` on the data source master to the generated `CustomerDemoDatasetController`.

4. CustomerViewerPresentationService.cls

`Demo.AiRefactored.Customer.CustomerViewerPresentationService` inherits `BusinessTask`, includes `dsCustomerDemo` and exposes the mandatory `GetDataset`. `CustNumValueChanged` returns early when `EventContext` is anything other than `View` (i.e. during Add / Copy / Update the lookup is just a text box), otherwise it emits:

```
oUiControl:UiActions:Add (new OpenQueryUiAction ("":u,
                                                  substitute ("for each eCustomer where
eCustomer.CustNum = &1":u,
                                                              quoter (eCustomer.CustNum)))) .
```

This is the same shape as the existing `CustomerLookupFilterEventService` (SCL-5734), which is the framework's reference implementation of exactly this always-enabled/EditAsTextbox lookup-as-filter pattern — I followed it rather than inventing one. Build clean (`build-modified`, 1 file compiled).

Repository data written back both ways: three new `.smartrepo` exports (`DemoAiCustomerViewer`, `AiDemoDetailForm`, `AiDemoCustomerDataSource`) plus the `DB/SmartDB/dump/*.d` files for CI. No dump churn beyond what your working tree already had.

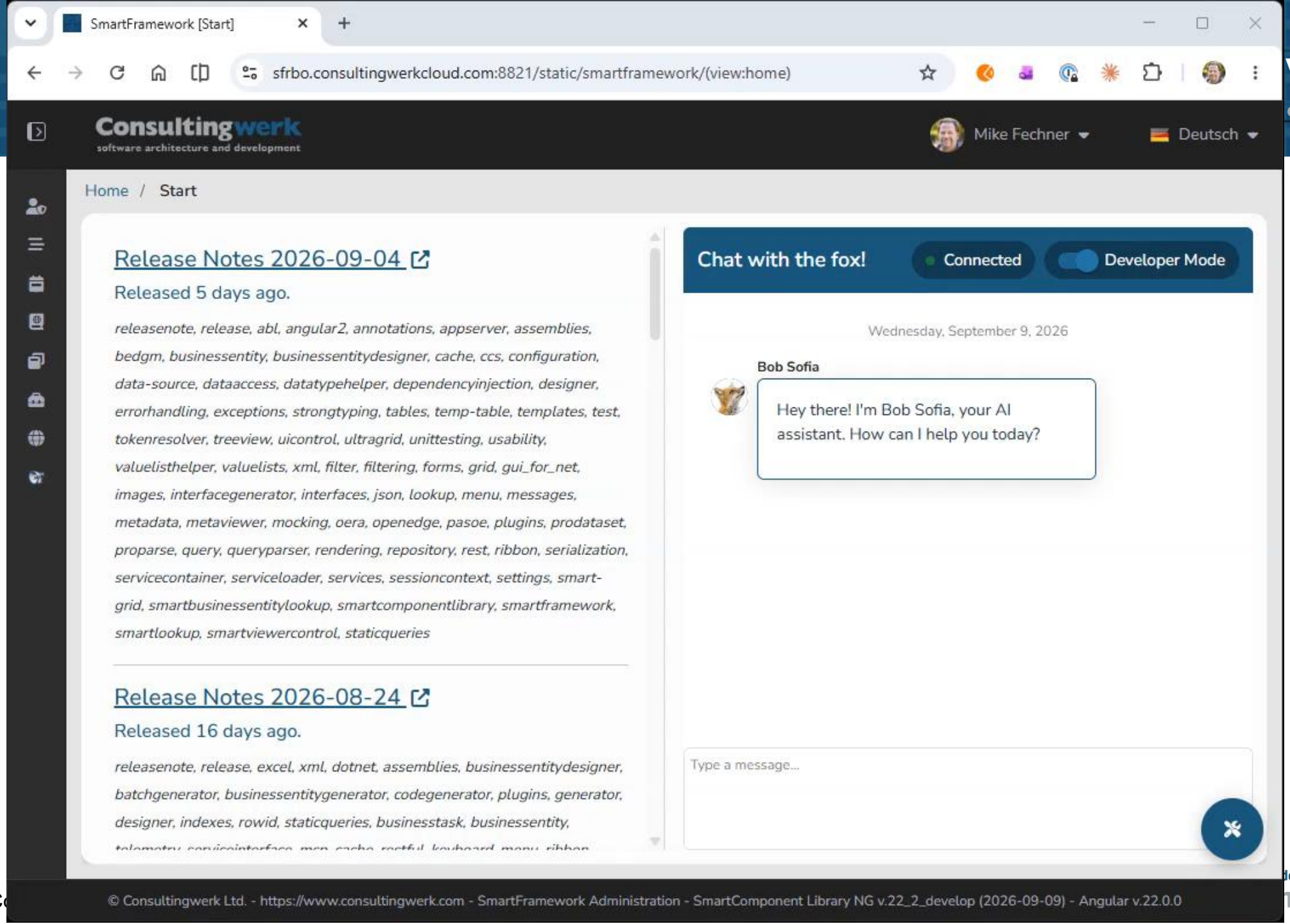
Two things left for you

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Fix the tab order for CustNum

Berechtigungen umgehen Opus 5 Extra hoch

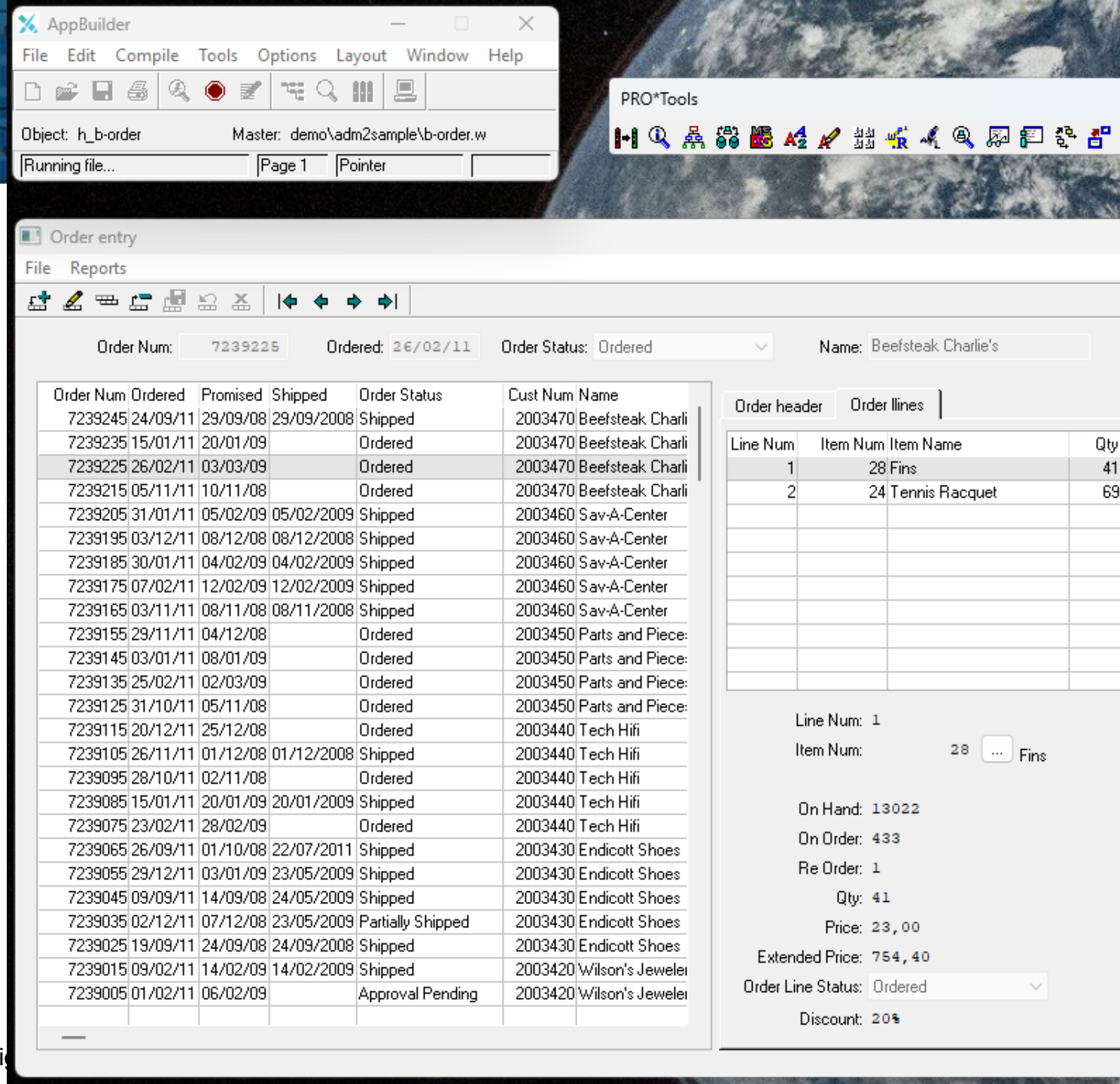
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software architecture and development
Mike Fechner
Deutsch
Home / Start
Release Notes 2026-09-04
Released 5 days ago.
releasenote, release, abl, angular2, annotations, appserver, assemblies, bedgm, businessentity, businessentitydesigner, cache, ccs, configuration, data-source, dataaccess, datatypehelper, dependencyinjection, designer, errorhandling, exceptions, strongtyping, tables, temp-table, templates, test, tokenresolver, treeview, uicontrol, ultragrid, unittesting, usability, valuelisthelper, valuelists, xml, filter, filtering, forms, grid, gui_for_net, images, interfacegenerator, interfaces, json, lookup, menu, messages, metadata, metaviewer, mocking, oera, openedge, pasoe, plugins, prodataset, proparse, query, queryparser, rendering, repository, rest, ribbon, serialization, servicecontainer, serviceloader, services, sessioncontext, settings, smart-grid, smartbusinessentitylookup, smartcomponentlibrary, smartframework, smartlookup, smartviewercontrol, staticqueries
Release Notes 2026-08-24
Released 16 days ago.
releasenote, release, excel, xml, dotnet, assemblies, businessentitydesigner, batchgenerator, businessentitygenerator, codegenerator, plugins, generator, designer, indexes, rowid, staticqueries, businesstask, businessentity,
Chat with the fox!
Connected
Developer Mode
Wednesday, September 9, 2026
Bob Sofia
Hey there! I'm Bob Sofia, your AI assistant. How can I help you today?
Type a message...
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GUI Refactoring Demo

- Migration of GUI application
  - AppBuilder
  - ADM2 SmartObjects
  - Mix of SDO and direct DB access



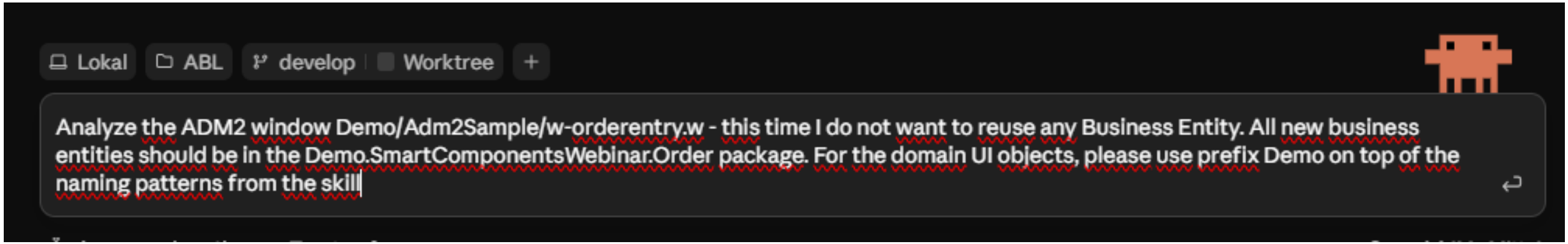
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GUI Refactoring Demo

- Migration of UI components from existing ABL GUI
- Migration of Lookups based on multiple ABL widgets and parsing of trigger code
- Review in Repository Designer

- Human in the loop!

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“Analyze the ADM2 window Demo/Adm2Sample/w-orderentry.w - this time I do not want to reuse any Business Entity. All new business entities should be in the Demo.SmartComponentsWebinar.Order package. For the domain UI objects, please use prefix Demo on top of the naming patterns from the skill”

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Analyze the ADM2 window Demo/Adm2Sample/w-orderentry.w - this time I do not want to reuse any Business Entity. All new business entities should be in the Demo.SmartComponentsWebinar.Order package. For the domain UI objects, please use prefix Demo on top of the naming patterns from the skill

Skill verwendet ›

ADM2 Window Analysis

Lesen `w-orderentry.w` ›

Now let me read all the referenced SmartObject files to extract database tables and understand their structure.

Gelesen 7 Dateien ›

Now let me query the SmartFramework MCP for database table details, repository object existence, and templates.

Verwendet get database table details ⌄

ToolSearch verwendet ›
Verwendet get database table details ›
Verwendet get database table details ›
Verwendet get database table details ›
Verwendet get database table details ›
Verwendet get businessentity for dbtable ›
Verwendet get businessentity for dbtable ›
Verwendet get businessentity for dbtable ›
Verwendet get templates ›
Verwendet get repository object details ›
Verwendet get repository object details ›
Verwendet get repository object details ›
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Verwendet get repository object details ›
Verwendet get repository object details ›
Verwendet get repository object details ›
Verwendet get repository object details ›

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The analysis is complete. Here's a summary:

JIRA Ticket: MISC-135 - Migration of w-orderentry.w

Key Findings

- 9 SmartObjects across 3 pages (page 0 = shared, page 1 = Order header, page 2 = Order lines)
- 2 SmartDataObjects: `d-order.w` (Order + Customer) and `d-order-line.w` (OrderLine + Item, ForeignFields: Ordernum)
- 1 Header Viewer (`v-order-header.w`) always visible on page 0
- 1 Master Grid (`b-order`) on the left, TabFolder on the right --> horizontal layout
- 1 Typo detected: "Order llines" --> "Order lines" (double "l")
- Direct FIND on Item table in `v-order-line.w` (price lookup) -- needs refactoring
- Custom code: Menu trigger runs `order-confirmation.p` , viewer triggers calculate ExtendedPrice

Proposed Repository Objects (all new, Demo prefix)

ADM2	Proposed Name
d-order.w	DemoOrderDataSource
d-order-line.w	DemoOrderLineDataSource
v-order-header.w	DemoOrderHeaderViewer
v-order.w	DemoOrderViewer
v-order-line.w	DemoOrderLineViewer
b-order.w	DemoOrderGrid
b-order-line.w	DemoOrderLineGrid
w-orderentry.w	DemoOrderEntryForm

New Business Entities (Demo.SmartComponentsWebinar.Order)

- OrderBusinessEntity (Order + Customer)
- OrderLineBusinessEntity (OrderLine + Item)
- ItemBusinessEntity (Item -- for direct FIND refactoring)

Recommended Template

Template Master/Detail Form with TabFolder and Header Viewer - Horizontal -- an exact structural match with header viewer, master grid on the left, TabFolder on the right, master viewer on page 1, and detail grid + viewer on page 2.

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Suche

+ Erstellen

Bereiche / Miscellaneous / Übergeordnete Breadc... / MISC-135

Migration of w-orderentry.w

Beschreibung

Beschreibung verbessern

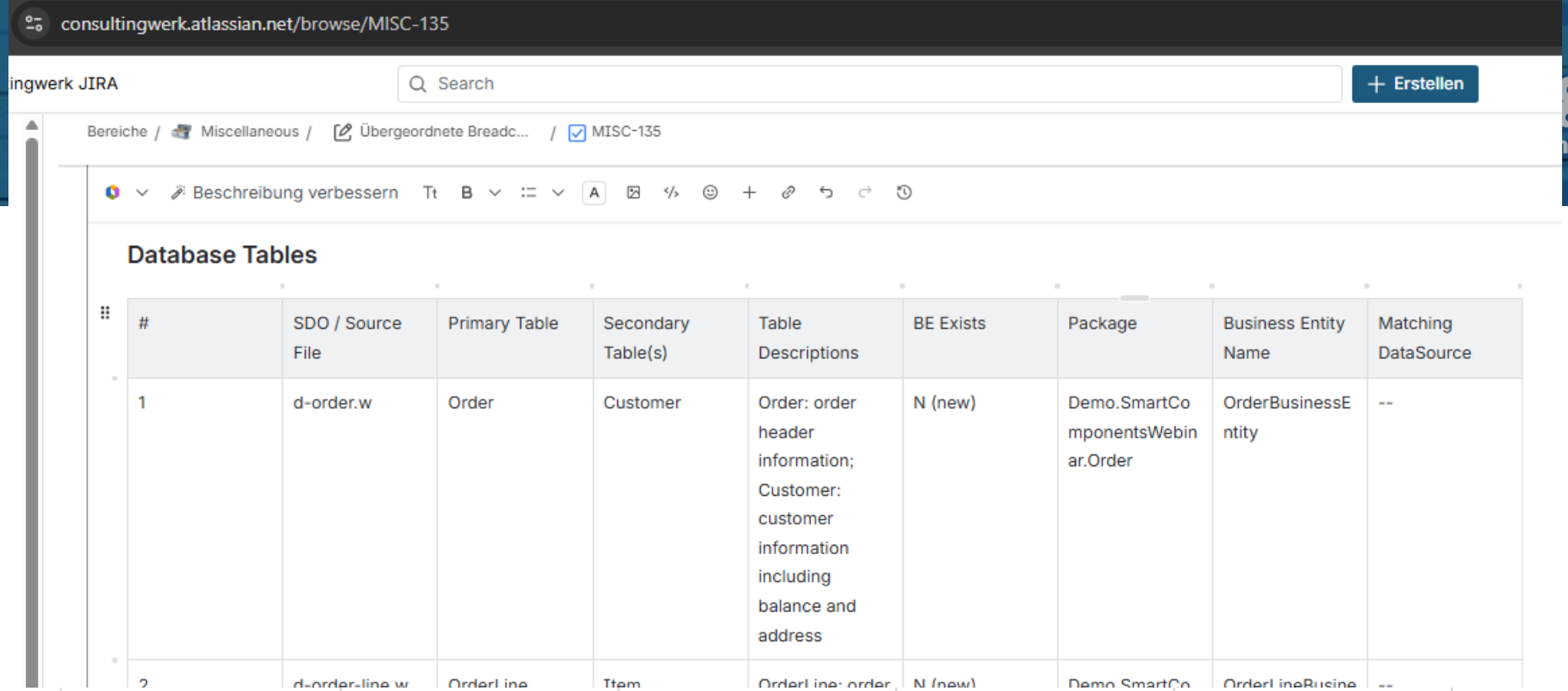
Proposed MetaForm Name

SmartWindow File	Proposed MetaForm Name
w-orderentry.w	DemoOrderEntryForm

Window Attributes

Attribute	Value
Title	Order entry
Width	220.2
Height	26.86

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v-order-line.w (direct FIND)	Item	--	Item: quick reference for items in stock and quantity on-hand	N (new)	Demo.SmartCo mponentsWebinar.Items	ItemBusinessEntity	--

Stay in control of names:
- Describe rule / naming patterns
- Provide lookup document / MCP server
- Edit on a case by case basis in JIRA

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Template Matching

Rank	Template Name	Fit	Justification
1	Template Master/Detail Form with TabFolder and Header Viewer - Horizontal	Excellent	Master/detail with 2 data sources, header viewer on page 0, master grid on left, TabFolder on right with 2 pages, master viewer on page 1, detail grid + detail viewer on page 2. Exact structural match.
2	Template Master/Detail Form with TabFolder - Horizontal	Good	Master/detail with TabFolder, but lacks the header viewer on page 0. Would require adding a header viewer manually.
3	Template Master/Detail Form with TabFolder - Vertical	Fair	Correct structure but vertical orientation does not match the horizontal layout of the ADM2 window.

Visual Layout (Best Match: Template Master/Detail Form with TabFolder and Header Viewer - Horizontal)

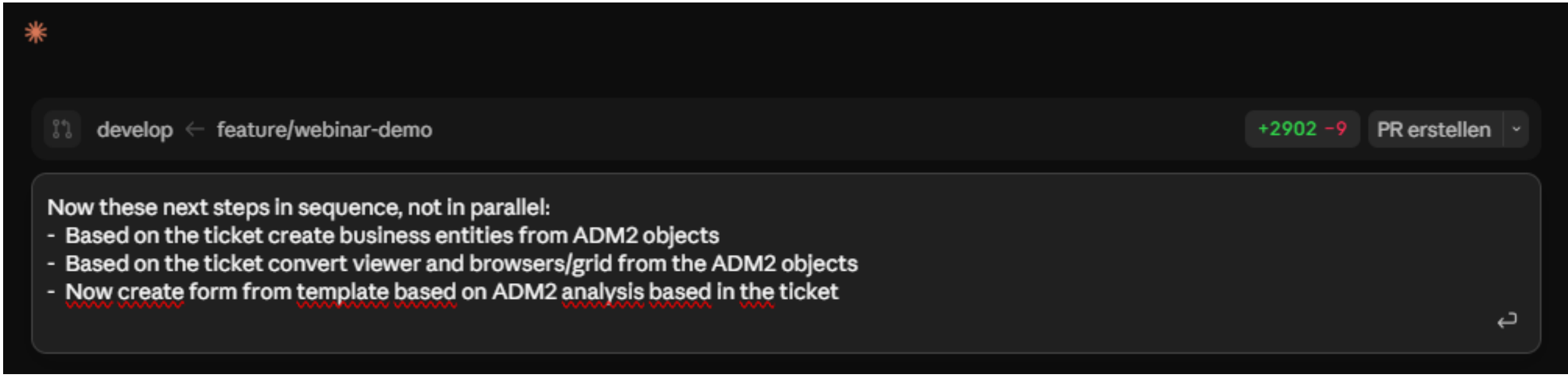
```
+-------------------------------------------------------------------------+
| Form (vertical)                                                         |
|                                                                         |
| [A1] HeaderViewer *  (Page 0 - always visible)                          |
|                                                                         |
| [B1] SplitContainer (horizontal, FixedPanel: Panel 2)                   |
| +------------------+ +-----------------------------------------------+ |
| | Left Panel       | | Right Panel                                   | |
| |                  | |                                               | |
| | [LA1]            | | [RA1] DefaultToolbar                          | |
| | MasterGrid *     | |   Buttons: add,copy,update,                   | |
| |                  | |            save,cancel,delete                 | |
| |                  | |                                               | |
| |                  | | [RB1] TabFolder                               | |
| |                  | | +-------------------------------------------+ | |
| |                  | | | Tab "Order header" (Page 1):              | | |
| |                  | | |   [A1] MasterViewer *                     | | |
| |                  | | |                                           | | |
| |                  | | | Tab "Order lines" (Page 2):               | | |
| |                  | | |   [A1] DetailGrid *                       | | |
| |                  | | |   [B1] DetailViewer *                     | | |
| |                  | | +-------------------------------------------+ | |
| +------------------+ +-----------------------------------------------+ |
+-------------------------------------------------------------------------+

Non-visual instances:
  MasterDataSource *  (MetaDataSource)
  DetailDataSource *  (MetaDataSource, ForeignFields: Ordernum,Ordernum)

* = Placeholder instance (replaced when creating a form from this template)
```

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The full stack modernization framework
SmartComponent Library



“Now these next steps in sequence, not in parallel:
- Based on the ticket create business entities from ADM2 objects
- Based on the ticket convert viewer and browsers/grid from the ADM2 objects
- Now create form from template based on ADM2 analysis based in the ticket”

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Create Business Entities (retry)

Skill verwendet ›

Let me fetch the JIRA ticket fresh from the API.

getJiralssue verwendet ›

Ticket fetched. Parsing the Database Tables section from the ticket:

#	SDO	Primary	Secondary	Package (from ticket)	BE Name
1	d-order.w	Order	Customer	`Demo.SmartComponentsWebinar.Order`	OrderBusinessEntity
2	d-order-line.w	OrderLine	Item	`Demo.SmartComponentsWebinar.OrdeLines`	OrderLineBusinessEntity
3	v-order-line.w (direct FIND)	Item	--	`Demo.SmartComponentsWebinar.Items`	ItemBusinessEntity

Note: Row 2 has package `Demo.SmartComponentsWebinar.OrdeLines` which may be a typo for `OrderLines`. Per the updated skill, I'll flag this but use the ticket value as-is.

Now let me get product modules, then read the SDO files for secondary table fields.

Gelesen 2 Dateien, verwendet ein Tool ›

Secondary table fields extracted:

- d-order.w (Customer): `Customer.Name,Customer.City,Customer.Country`
- d-order-line.w (Item): `Item.ItemName,Item.Onhand,Item.OnOrder,Item.ReOrder`

Using product module "Demo". Now creating Business Entities sequentially, using package names exactly as they appear in the ticket.

BE 1: OrderBusinessEntity (Package: `Demo.SmartComponentsWebinar.Order`)

Verwendet create businessentity ⌄

databaseTableName: Order
packageName: Demo.SmartComponentsWebinar.Order
businessEntityName: OrderBusinessEntity
additionalFieldNames: Customer.Name,Customer.City,Customer.Country

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BE 2: OrderLineBusinessEntity (Package: `Demo.SmartComponentsWebinar.OrdeLines` -- from ticket, possible typo for "OrderLines")

create businessentity verwendet ›

BE 3: ItemBusinessEntity (Package: `Demo.SmartComponentsWebinar.Items`, direct FIND -- no secondary tables)

create businessentity verwendet ›

All 3 BEs created. Now creating DataSources (only for SDO rows, not direct FIND).

DataSource 1: DemoOrderDataSource (for `Demo.SmartComponentsWebinar.Order.OrderBusinessEntity`)

Verwendet 2 Tools ›

DataSource 2: DemoOrderLineDataSource (for `Demo.SmartComponentsWebinar.OrdeLines.OrderLineBusinessEntity`)

Verwendet 2 Tools ›

Business Entities and DataSources complete. Here's the summary:

Business Entities Created

BE Class	Primary Table	Secondary Fields
`Demo.SmartComponentsWebinar.Order.OrderBusinessEntity`	Order	Customer.Name, Customer.City, Customer.Country
`Demo.SmartComponentsWebinar.OrdeLines.OrderLineBusinessEntity`	OrderLine	Item.ItemName, Item.Onhand, Item.OnOrder, Item.ReOrder
`Demo.SmartComponentsWebinar.Items.ItemBusinessEntity`	Item	--

DataSources Created

DataSource	Business Entity	Tables
DemoOrderDataSource	`Demo.SmartComponentsWebinar.Order.OrderBusinessEntity`	eOrder
DemoOrderLineDataSource	`Demo.SmartComponentsWebinar.OrdeLines.OrderLineBusinessEntity`	eOrderLine

Notes

- ItemBusinessEntity (direct FIND) -- created without a DataSource. May need a manual DataSource or Business Entity Lookup for the migrated architecture.
- Possible typo in ticket: Package `Demo.SmartComponentsWebinar.OrdeLines` (row 2) -- may have been intended as `OrderLines`. Used as-is per ticket.

Now proceeding to step 2: converting viewers and grids.

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Convert Viewers and Grids

Skill verwendet ›

getJiraIssue verwendet ›

Ticket parsed. Objects to convert:

Viewers: v-order-header.w, v-order.w, v-order-line.w
Browsers: b-order.w, b-order-line.w

Let me get the frame/browse names and the needed MCP tool schemas.

ToolSearch verwendet ›

Now let me get all frame and browse names in parallel.

Verwendet 5 Tools ›

All frames are `F-Main`, all browses are `br_table`. Now converting sequentially.

1. DemoOrderHeaderViewer (v-order-header.w, frame F-Main)

convert frame definition verwendet ›

2. DemoOrderGrid (b-order.w, browse br_table)

convert browse definition verwendet ›

3. DemoOrderViewer (v-order.w, frame F-Main)

convert frame definition verwendet ›

4. DemoOrderLineGrid (b-order-line.w, browse br_table)

convert browse definition verwendet ›

5. DemoOrderLineViewer (v-order-line.w, frame F-Main)

Verwendet convert frame definition ›

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All viewers and grids converted successfully.

Viewers Created

MetaViewer	Source File	Frame	DataSource
DemoOrderHeaderViewer	v-order-header.w	F-Main	DemoOrderDataSource
DemoOrderViewer	v-order.w	F-Main	DemoOrderDataSource
DemoOrderLineViewer	v-order-line.w	F-Main	DemoOrderLineDataSource

Grids Created

MetaGrid	Source File	Browse	DataSource
DemoOrderGrid	b-order.w	br_table	DemoOrderDataSource
DemoOrderLineGrid	b-order-line.w	br_table	DemoOrderLineDataSource

No errors or warnings. Now proceeding to step 3: creating the form from template.

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Create Form from Template

Skill verwendet ›

getJiraIssue verwendet ›

Ticket parsed. Key data:

- MetaForm: DemoOrderEntryForm
- Title: Order entry
- Template: Template Master/Detail Form with TabFolder and Header Viewer - Horizontal
- 7 placeholders to map
- ForeignFields: Ordernum,Ordernum on DetailDataSource
- Typo fix: "Order llines" → "Order lines"

Let me verify the template and get the creation tool schema.

Verwendet 2 Tools ›

Template has 7 placeholders -- all match the ticket's Placeholder Mapping. Creating the form now.

create repository object from template verwendet ›

Form created. Now I need to update the TITLE, page labels (with typo fix), and ForeignFields. Let me fetch the TOON.

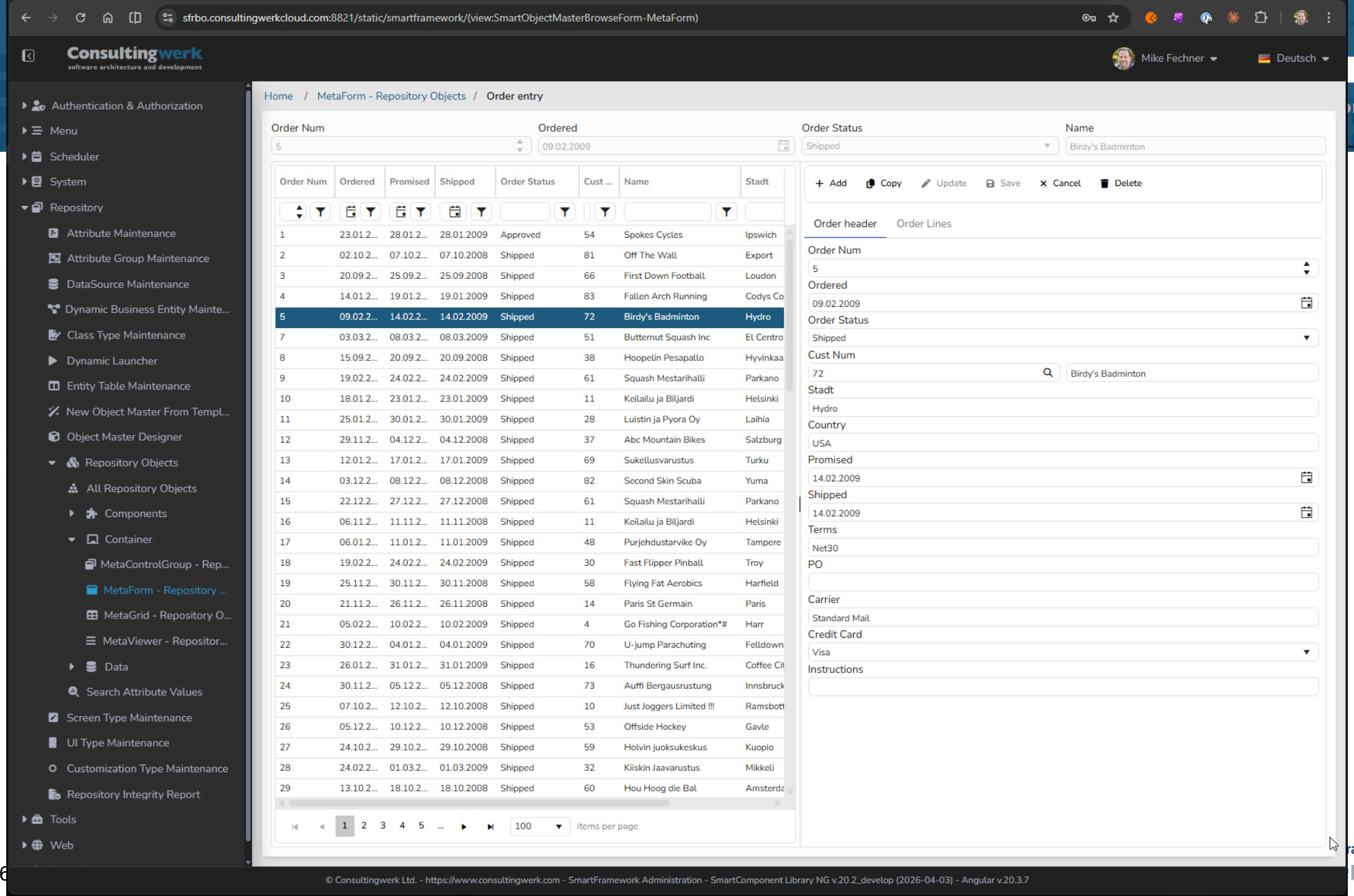
get repository object verwendet ›

I can see the TOON. Three things need updating:

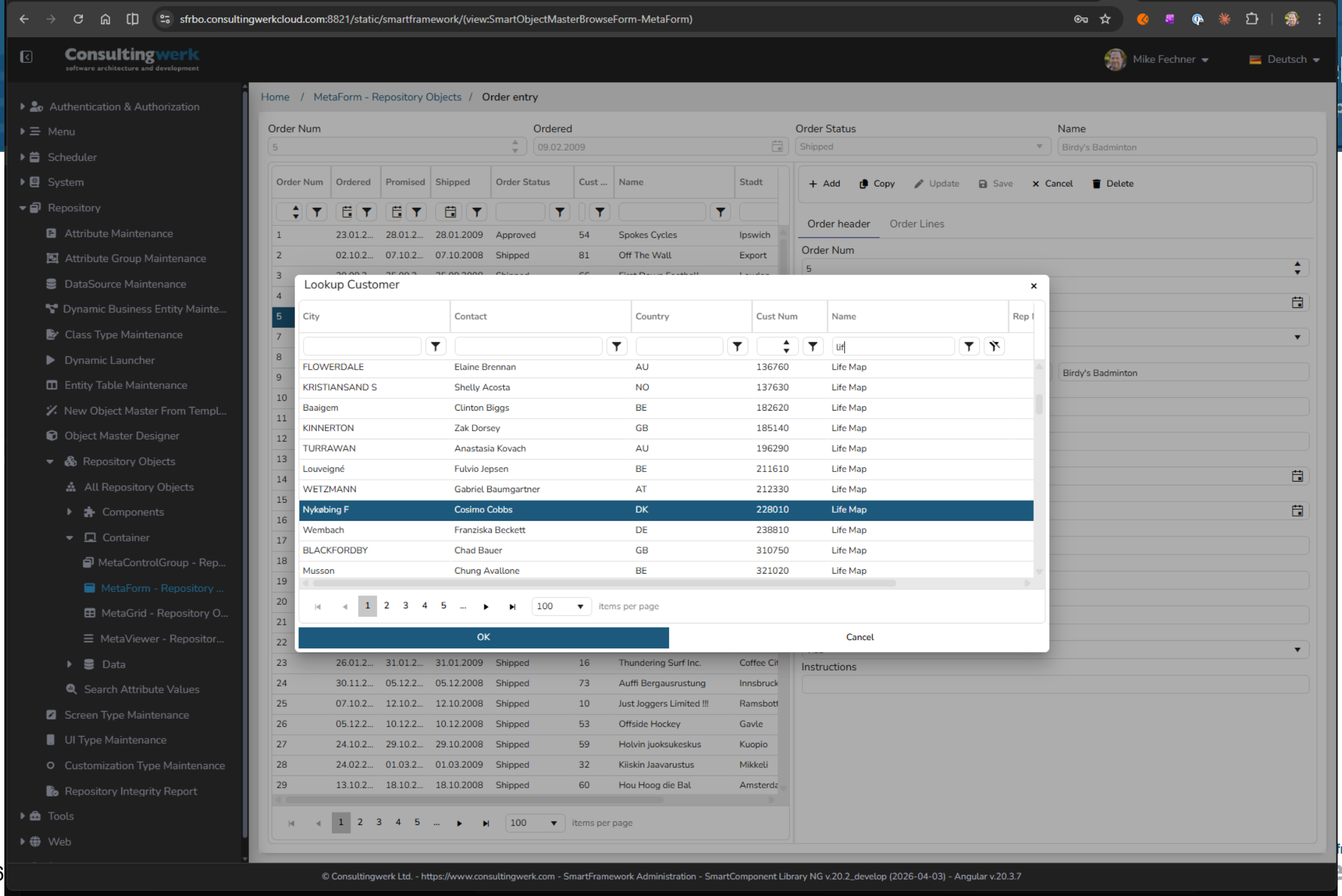
1. TITLE: `Product Maintenance` → `Order entry`
2. Pages: `Master` → `Order header`, `Detail` → `Order lines` (typo fix applied)
3. ForeignFields on DetailDataSource: `ProductGuid,ProductGuid` → `Ordernum,Ordernum`

Verwendet update repository object ›

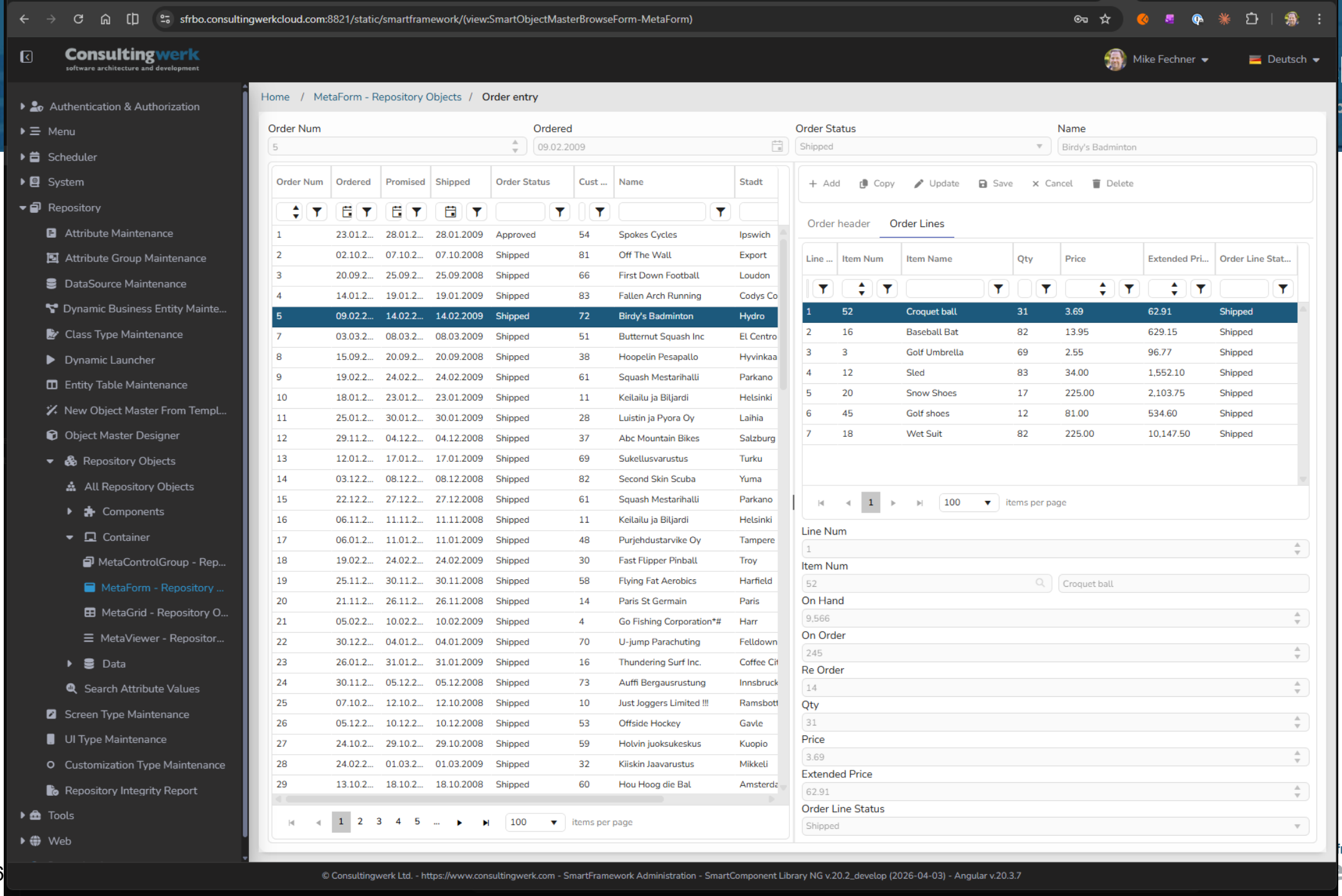
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Deutsch
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System
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Attribute Group Maintenance
DataSource Maintenance
Dynamic Business Entity Mainte...
Class Type Maintenance
Dynamic Launcher
Entity Table Maintenance
New Object Master From Templ...
Object Master Designer
Repository Objects
All Repository Objects
Components
Container
MetaControlGroup - Rep...
MetaForm - Repository ...
MetaGrid - Repository O...
MetaViewer - Repositor...
Data
Search Attribute Values
Screen Type Maintenance
UI Type Maintenance
Customization Type Maintenance
Repository Integrity Report
Tools
Web
Home / MetaForm - Repository Objects / Order entry
Order Num
5
Ordered
09.02.2009
Order Status
Shipped
Name
Birdy's Badminton
Order Num | Ordered | Promised | Shipped | Order Status | Cust ... | Name | Stadt
1 | 23.01.2... | 28.01.2... | 28.01.2009 | Approved | 54 | Spokes Cycles | Ipswich
2 | 02.10.2... | 07.10.2... | 07.10.2008 | Shipped | 81 | Off The Wall | Export
3 | 20.09.2... | 25.09.2... | 25.09.2008 | Shipped | 66 | First Down Football | Loudon
4 | 14.01.2... | 19.01.2... | 19.01.2009 | Shipped | 83 | Fallen Arch Running | Codys Co
5 | 09.02.2... | 14.02.2... | 14.02.2009 | Shipped | 72 | Birdy's Badminton | Hydro
7 | 03.03.2... | 08.03.2... | 08.03.2009 | Shipped | 51 | Butternut Squash Inc | El Centro
8 | 15.09.2... | 20.09.2... | 20.09.2008 | Shipped | 38 | Hoopelin Pesapallo | Hyvinkaa
9 | 19.02.2... | 24.02.2... | 24.02.2009 | Shipped | 61 | Squash Mestarihalli | Parkano
10 | 18.01.2... | 23.01.2... | 23.01.2009 | Shipped | 11 | Keilailu ja Biljardi | Helsinki
11 | 25.01.2... | 30.01.2... | 30.01.2009 | Shipped | 28 | Luistin ja Pyora Oy | Laihia
12 | 29.11.2... | 04.12.2... | 04.12.2008 | Shipped | 37 | Abc Mountain Bikes | Salzburg
13 | 12.01.2... | 17.01.2... | 17.01.2009 | Shipped | 69 | Sukellusvarustus | Turku
14 | 03.12.2... | 08.12.2... | 08.12.2008 | Shipped | 82 | Second Skin Scuba | Yuma
15 | 22.12.2... | 27.12.2... | 27.12.2008 | Shipped | 61 | Squash Mestarihalli | Parkano
16 | 06.11.2... | 11.11.2... | 11.11.2008 | Shipped | 11 | Keilailu ja Biljardi | Helsinki
17 | 06.01.2... | 11.01.2... | 11.01.2009 | Shipped | 48 | Purjehdustarvike Oy | Tampere
18 | 19.02.2... | 24.02.2... | 24.02.2009 | Shipped | 30 | Fast Flipper Pinball | Troy
19 | 25.11.2... | 30.11.2... | 30.11.2008 | Shipped | 58 | Flying Fat Aerobics | Harfield
20 | 21.11.2... | 26.11.2... | 26.11.2008 | Shipped | 14 | Paris St Germain | Paris
21 | 05.02.2... | 10.02.2... | 10.02.2009 | Shipped | 4 | Go Fishing Corporation*# | Harr
22 | 30.12.2... | 04.01.2... | 04.01.2009 | Shipped | 70 | U-jump Parachuting | Felldown
23 | 26.01.2... | 31.01.2... | 31.01.2009 | Shipped | 16 | Thundering Surf Inc. | Coffee Cit
24 | 30.11.2... | 05.12.2... | 05.12.2008 | Shipped | 73 | Auffi Bergausrustung | Innsbruck
25 | 07.10.2... | 12.10.2... | 12.10.2008 | Shipped | 10 | Just Joggers Limited !!! | Ramsbott
26 | 05.12.2... | 10.12.2... | 10.12.2008 | Shipped | 53 | Offside Hockey | Gavle
27 | 24.10.2... | 29.10.2... | 29.10.2008 | Shipped | 59 | Holvin juoksukeskus | Kuopio
28 | 24.02.2... | 01.03.2... | 01.03.2009 | Shipped | 32 | Kiiskin Jaavarustus | Mikkeli
29 | 13.10.2... | 18.10.2... | 18.10.2008 | Shipped | 60 | Hou Hoog die Bal | Amsterda
1 2 3 4 5 ... 100 items per page
Add
Copy
Update
Save
Cancel
Delete
Order header
Order Lines
Order Num
5
Ordered
09.02.2009
Order Status
Shipped
Cust Num
72
Birdy's Badminton
Stadt
Hydro
Country
USA
Promised
14.02.2009
Shipped
14.02.2009
Terms
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Menu
Scheduler
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Repository
Attribute Maintenance
Attribute Group Maintenance
DataSource Maintenance
Dynamic Business Entity Mainte...
Class Type Maintenance
Dynamic Launcher
Entity Table Maintenance
New Object Master From Templ...
Object Master Designer
Repository Objects
All Repository Objects
Components
Container
MetaControlGroup - Rep...
MetaForm - Repository ...
MetaGrid - Repository O...
MetaViewer - Repositor...
Data
Search Attribute Values
Screen Type Maintenance
UI Type Maintenance
Customization Type Maintenance
Repository Integrity Report
Tools
Web
Home / MetaForm - Repository Objects / Order entry
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Birdy's Badminton
Order Num
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Stadt
1 23.01.2... 28.01.2... 28.01.2009 Approved 54 Spokes Cycles Ipswich
2 02.10.2... 07.10.2... 07.10.2008 Shipped 81 Off The Wall Export
23 26.01.2... 31.01.2... 31.01.2009 Shipped 16 Thundering Surf Inc. Coffee Cit
24 30.11.2... 05.12.2... 05.12.2008 Shipped 73 Auffi Bergausrustung Innsbruck
25 07.10.2... 12.10.2... 12.10.2008 Shipped 10 Just Joggers Limited !!! Ramsbott
26 05.12.2... 10.12.2... 10.12.2008 Shipped 53 Offside Hockey Gavle
27 24.10.2... 29.10.2... 29.10.2008 Shipped 59 Holvin juoksukeskus Kuopio
28 24.02.2... 01.03.2... 01.03.2009 Shipped 32 Kiiskin Jaavarustus Mikkeli
29 13.10.2... 18.10.2... 18.10.2008 Shipped 60 Hou Hoog die Bal Amsterda
1 2 3 4 5 ... 100 items per page
Add
Copy
Update
Save
Cancel
Delete
Order header
Order Lines
Order Num
5
Instructions
Lookup Customer
City
Contact
Country
Cust Num
Name
Rep I
FLOWERDALE Elaine Brennan AU 136760 Life Map
KRISTIANSAND S Shelly Acosta NO 137630 Life Map
Baaigem Clinton Biggs BE 182620 Life Map
KINNERTON Zak Dorsey GB 185140 Life Map
TURRAWAN Anastasia Kovach AU 196290 Life Map
Louveigné Fulvio Jepsen BE 211610 Life Map
WETZMANN Gabriel Baumgartner AT 212330 Life Map
Nykøbing F Cosimo Cobbs DK 228010 Life Map
Wembach Franziska Beckett DE 238810 Life Map
BLACKFORDBY Chad Bauer GB 310750 Life Map
Musson Chung Avallone BE 321020 Life Map
1 2 3 4 5 ... 100 items per page
OK
Cancel
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Scheduler
System
Repository
Attribute Maintenance
Attribute Group Maintenance
DataSource Maintenance
Dynamic Business Entity Mainte...
Class Type Maintenance
Dynamic Launcher
Entity Table Maintenance
New Object Master From Templ...
Object Master Designer
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1 | 23.01.2... | 28.01.2... | 28.01.2009 | Approved | 54 | Spokes Cycles | Ipswich
2 | 02.10.2... | 07.10.2... | 07.10.2008 | Shipped | 81 | Off The Wall | Export
3 | 20.09.2... | 25.09.2... | 25.09.2008 | Shipped | 66 | First Down Football | Loudon
4 | 14.01.2... | 19.01.2... | 19.01.2009 | Shipped | 83 | Fallen Arch Running | Codys Co
5 | 09.02.2... | 14.02.2... | 14.02.2009 | Shipped | 72 | Birdy's Badminton | Hydro
7 | 03.03.2... | 08.03.2... | 08.03.2009 | Shipped | 51 | Butternut Squash Inc | El Centro
8 | 15.09.2... | 20.09.2... | 20.09.2008 | Shipped | 38 | Hoopelin Pesapallo | Hyvinkaa
9 | 19.02.2... | 24.02.2... | 24.02.2009 | Shipped | 61 | Squash Mestarihalli | Parkano
10 | 18.01.2... | 23.01.2... | 23.01.2009 | Shipped | 11 | Keilailu ja Biljardi | Helsinki
11 | 25.01.2... | 30.01.2... | 30.01.2009 | Shipped | 28 | Luistin ja Pyora Oy | Laihia
12 | 29.11.2... | 04.12.2... | 04.12.2008 | Shipped | 37 | Abc Mountain Bikes | Salzburg
13 | 12.01.2... | 17.01.2... | 17.01.2009 | Shipped | 69 | Sukellusvarustus | Turku
14 | 03.12.2... | 08.12.2... | 08.12.2008 | Shipped | 82 | Second Skin Scuba | Yuma
15 | 22.12.2... | 27.12.2... | 27.12.2008 | Shipped | 61 | Squash Mestarihalli | Parkano
16 | 06.11.2... | 11.11.2... | 11.11.2008 | Shipped | 11 | Keilailu ja Biljardi | Helsinki
17 | 06.01.2... | 11.01.2... | 11.01.2009 | Shipped | 48 | Purjehdustarvike Oy | Tampere
18 | 19.02.2... | 24.02.2... | 24.02.2009 | Shipped | 30 | Fast Flipper Pinball | Troy
19 | 25.11.2... | 30.11.2... | 30.11.2008 | Shipped | 58 | Flying Fat Aerobics | Harfield
20 | 21.11.2... | 26.11.2... | 26.11.2008 | Shipped | 14 | Paris St Germain | Paris
21 | 05.02.2... | 10.02.2... | 10.02.2009 | Shipped | 4 | Go Fishing Corporation*# | Harr
22 | 30.12.2... | 04.01.2... | 04.01.2009 | Shipped | 70 | U-jump Parachuting | Felldown
23 | 26.01.2... | 31.01.2... | 31.01.2009 | Shipped | 16 | Thundering Surf Inc. | Coffee Cit
24 | 30.11.2... | 05.12.2... | 05.12.2008 | Shipped | 73 | Auffi Bergausrustung | Innsbruck
25 | 07.10.2... | 12.10.2... | 12.10.2008 | Shipped | 10 | Just Joggers Limited !!! | Ramsbott
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29 | 13.10.2... | 18.10.2... | 18.10.2008 | Shipped | 60 | Hou Hoog die Bal | Amsterda
1 2 3 4 5 ... 100 items per page
Add
Copy
Update
Save
Cancel
Delete
Order header
Order Lines
Line ... | Item Num | Item Name | Qty | Price | Extended Pri... | Order Line Stat...
1 | 52 | Croquet ball | 31 | 3.69 | 62.91 | Shipped
2 | 16 | Baseball Bat | 82 | 13.95 | 629.15 | Shipped
3 | 3 | Golf Umbrella | 69 | 2.55 | 96.77 | Shipped
4 | 12 | Sled | 83 | 34.00 | 1,552.10 | Shipped
5 | 20 | Snow Shoes | 17 | 225.00 | 2,103.75 | Shipped
6 | 45 | Golf shoes | 12 | 81.00 | 534.60 | Shipped
7 | 18 | Wet Suit | 82 | 225.00 | 10,147.50 | Shipped
1 100 items per page
Line Num
1
Item Num
52
Croquet ball
On Hand
9,566
On Order
245
Re Order
14
Qty
31
Price
3.69
Extended Price
62.91
Order Line Status
Shipped
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The 32-bit ActiveX clock is official: 4.5 years left



July 2026

Progress confirms the end of 32-bit Windows support in OpenEdge

OpenEdge 13.2

Ships without the 32-bit runtime

12.8 LTS retires

Last 32-bit LTS release ends support in about 4.5 years

The dependency has to be removed, not ported

The 64-bit client can host ActiveX — but only where a 64-bit OCX exists. Many vendors never shipped one, and some no longer maintain the control at all.

Removing ActiveX surfaces coupling deep in window logic that nobody remembered was there. 4.5 years is not generous if you start late.

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Two supported paths off ActiveX, now AI-accelerated



Web / browser-based UI

The right target when the long-term frontend is the web anyway. The biggest change, and the one that pays off well beyond the 32-bit deadline.



GUI for .NET

A natively 64-bit control stack with supported .NET controls. Embed the existing ABL window in a .NET form and replace ActiveX controls in place, window by window.



AI has changed the economics

Inventory and mapping, event handlers, window logic, UI wiring: the mechanical work is cut by factors, not percentages. The architectural decisions still need a human.

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Exposure ranges from a subsystem to one control



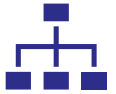
A whole subsystem

For some applications the 32-bit cut-off takes out the complete reporting solution.



Office integration

For others it is automation of ageing Word and Excel versions and other desktop applications.



A single control

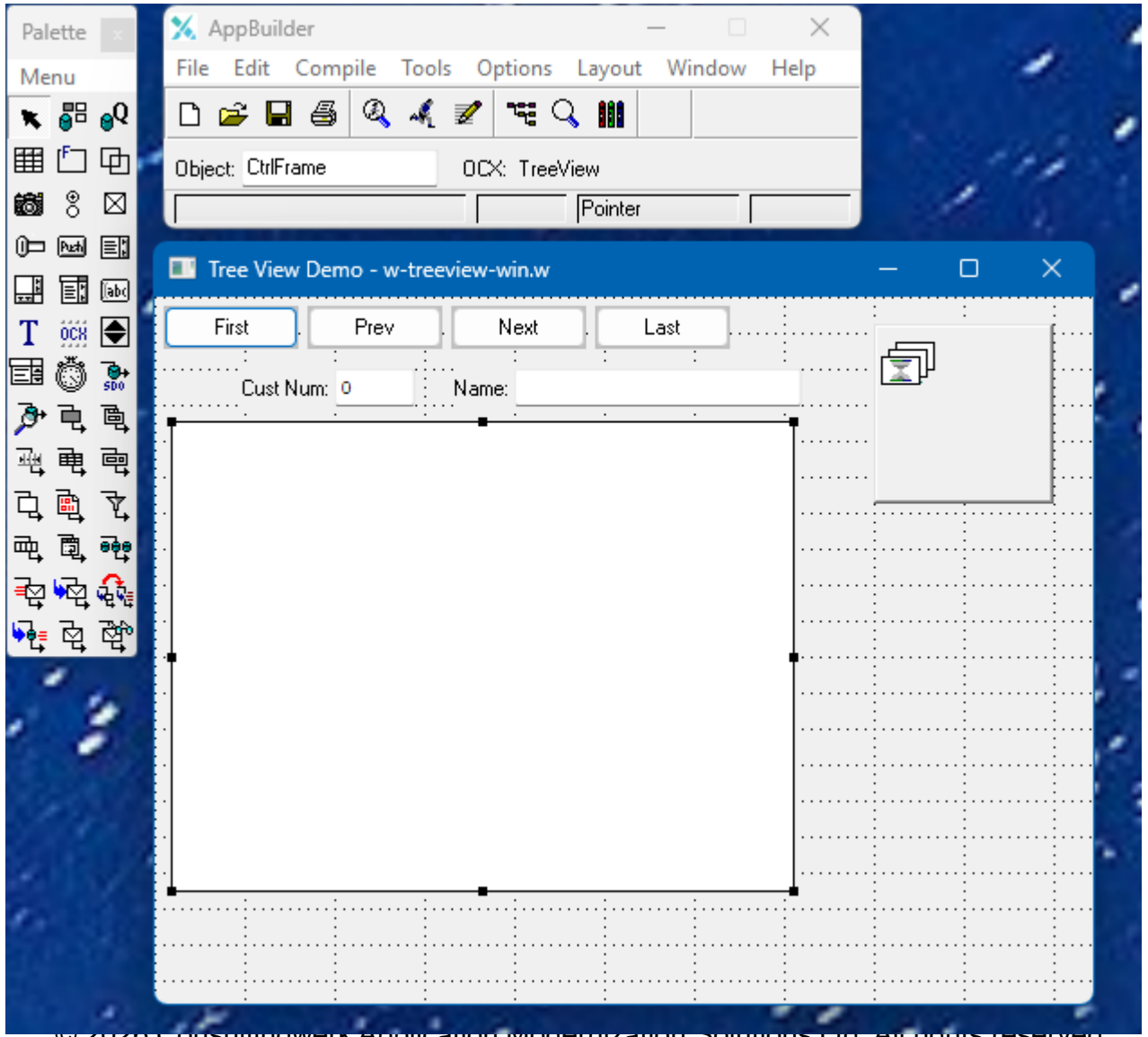
An ActiveX control here, a tree or tab folder there — 30-year-old technology in a few windows.

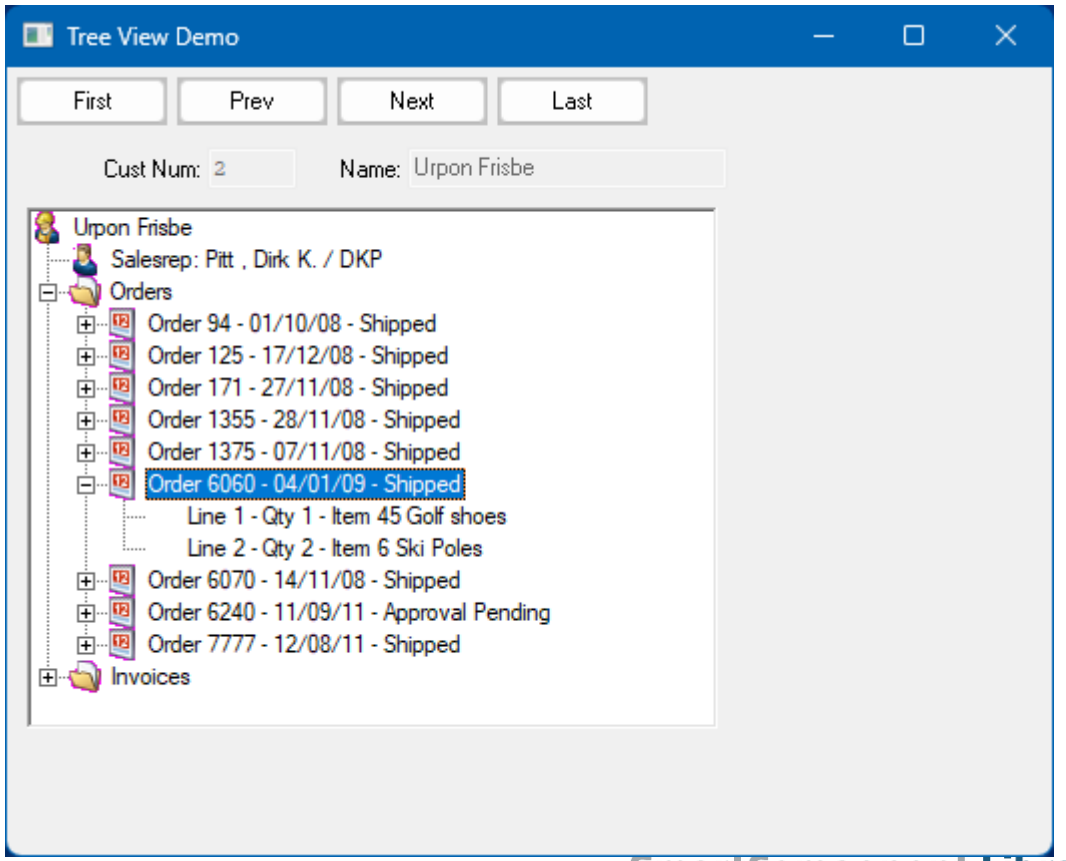


Both targets have replacements — and AI carries the migration work

Modern alternatives exist in the browser and in modern desktop clients. Which one you pick is an architecture decision; the rewiring is the part AI now does.

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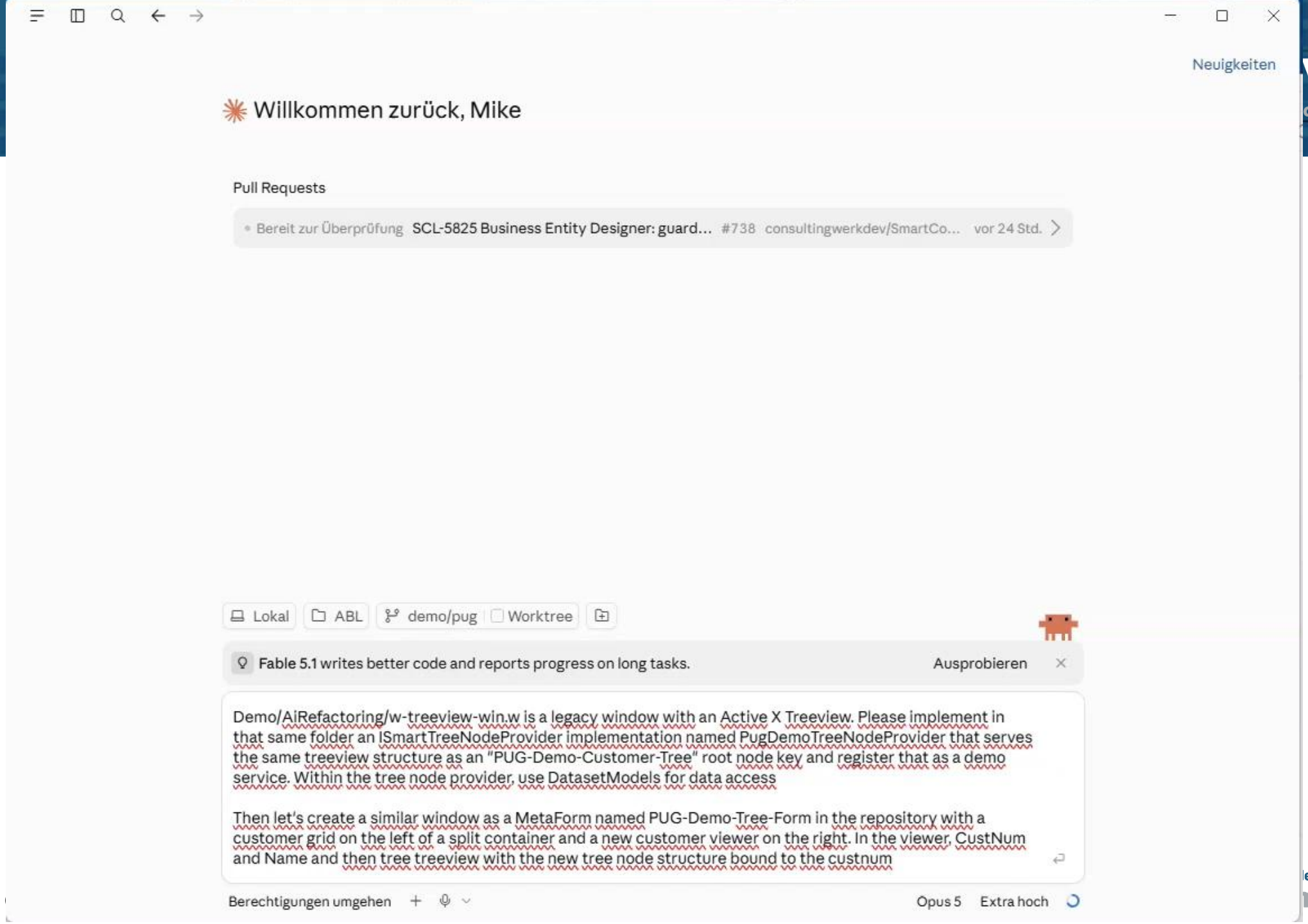
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In practice

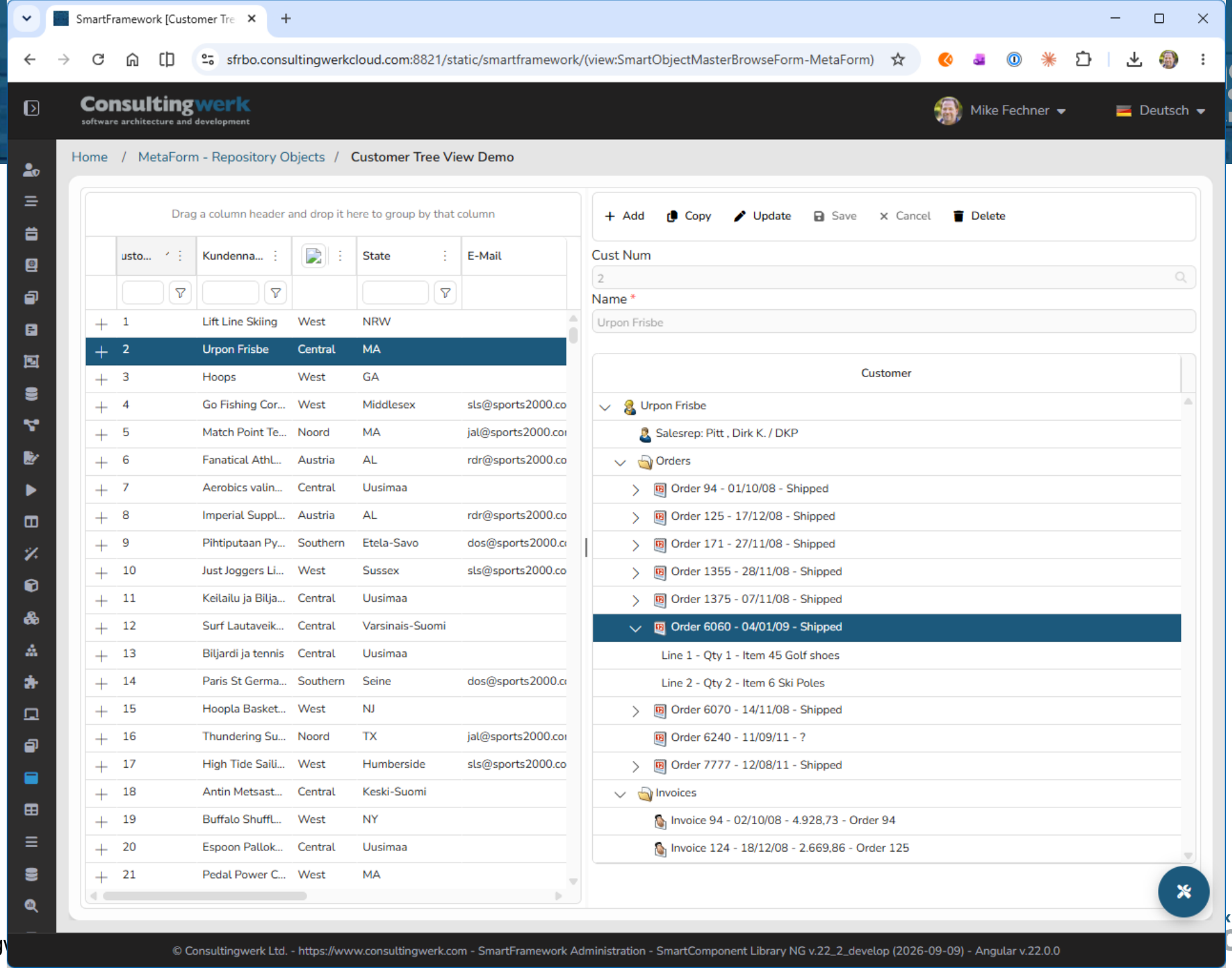
- Migrating ABL GUI code populating ActiveX Treeview Control to abstract “Tree Node Provider“

- Claude, please take it from here …

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Neuigkeiten
Willkommen zurück, Mike
Pull Requests
Bereit zur Überprüfung SCL-5825 Business Entity Designer: guard... #738 consultingwerkdev/SmartCo... vor 24 Std.
Lokal
ABL
demo/pug
Worktree
Fable 5.1 writes better code and reports progress on long tasks.
Ausprobieren
Demo/AiRefactoring/w-treeview-win.w is a legacy window with an Active X Treeview. Please implement in that same folder an ISmartTreeNodeProvider implementation named PugDemoTreeNodeProvider that serves the same treeview structure as an "PUG-Demo-Customer-Tree" root node key and register that as a demo service. Within the tree node provider, use DatasetModels for data access
Then let's create a similar window as a MetaForm named PUG-Demo-Tree-Form in the repository with a customer grid on the left of a split container and a new customer viewer on the right. In the viewer, CustNum and Name and then tree treeview with the new tree node structure bound to the custnum
Berechtigungen umgehen
Opus 5
Extra hoch

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Conclusion



A Real Game-Changer

AI turns modernization from a multi-year programme into an iterative, weeks- or months-scale effort



Standards, Actually Followed

Agents adhere to the agreed patterns more consistently than hand-written code ever did



Not the Last Modernization

This initiative will not be the final one – and a cleanly modernized code base is a far better starting point for everything that follows



No AI Slop

A proven framework, agent skills and rules keep generated code on-pattern and reviewable, MCP servers to reuse proven tools

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Talk to us

- **What these examples were meant to show**
  - AI-supported modernization works on real OpenEdge code, not just on demos
  - The method matters more than the tool: analysis, review and implementation as separate, reviewable steps
  - Skills, tickets and documents keep the work repeatable across a whole application
- **Interested? Get in touch**
  - We look at your application, your legacy patterns and your modernization goal together
  - Starting point is usually a small, contained refactoring on your own code base

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New Webinar: AI-Powered Modernization with the SmartComponent Library - in German. Register now!

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PUG Challenge, November 4th – 6th



PUG CHALLENGE 15TH EDITION

Questions



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