WEBSYDIAN™

Web Services and internal SOA with 2E and WebsydianExpress

WEBSYDIAN™

Speakers

- Søren Madsen
  Chief Consultant, Soft Design A/S

- Anne-Marie Arnvig
  Communications Manager, Websydian A/S

WEBSYDIAN™

Agenda

- Websydian and web services
- Service Oriented Architecture vs. web services
- What is a service?
- The SOA idea
- The SOA Benefits
- WebsydianExpress for 2E
- Internal SOA in your 2E application – a practical approach built on a customer case
- Questions

WEBSYDIAN™

Websydian and web services

- Working with web services since 2001
- TransacXML for CA Plex
  - Generate and send XML documents
  - Receive and consume XML documents
  - Import WSDL and schemas
  - Generate schemas
  - Compliant with XML standards

SOA vs. web services

You can have SOA without doing web services, and you can do web services without having SOA.

SOA is more a methodology than a particular technology. Mindset and discipline are essential.

What is a service?

A service consists of one or a series of contact points where some kind of interaction or interchange occurs:

- Ordering a sandwich in a sandwich shop
- Calling your local tax authorities for instructions
- Retrieving data on a web site
- …

A service is a way of organizing or structuring a series of action processes/interchanges in order to lead the service receiver to the service goal.

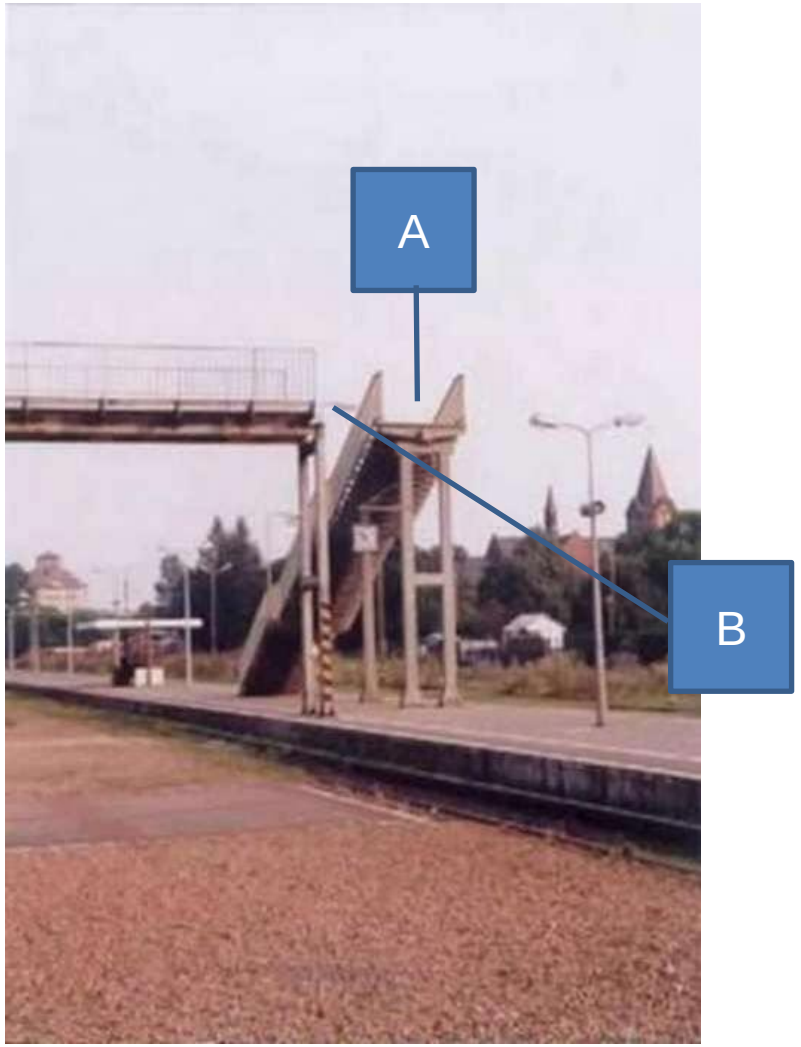
The SOA idea

Each interaction process should interface to the next interaction process to finally reach the goal.

If we do it right, we can reuse the processes, but only if the interface contract is in place and fulfilled.

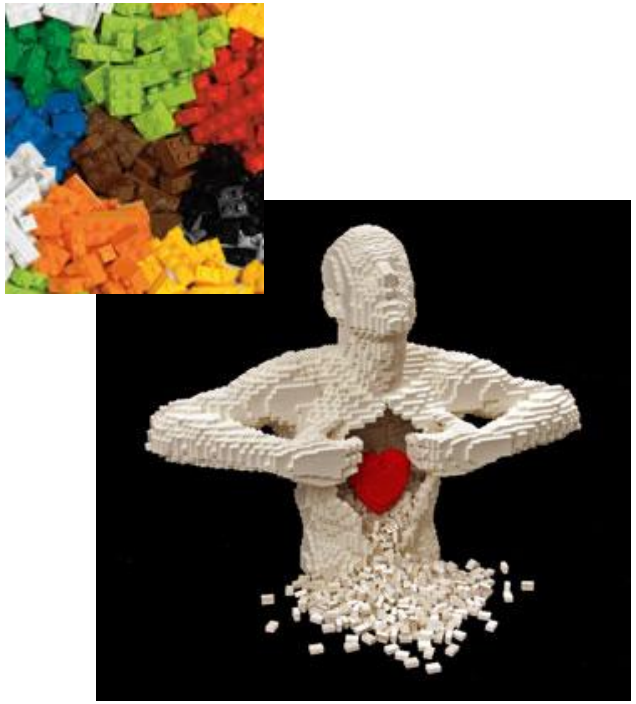
How not to

Both elements fulfill their individual purpose, but the interface contract between A and B is not in place or not fulfilled.



Building blocks with standard interface

- The general SOA idea is to work smarter by constructing systems as sets of building blocks that can all be fitted with each other to create new facilities – one fits all.
- The building blocks are services.
- Built correctly they are so loosely coupled that they can be shared and used for other applications.



WEBSYDIAN™

SOA Benefits

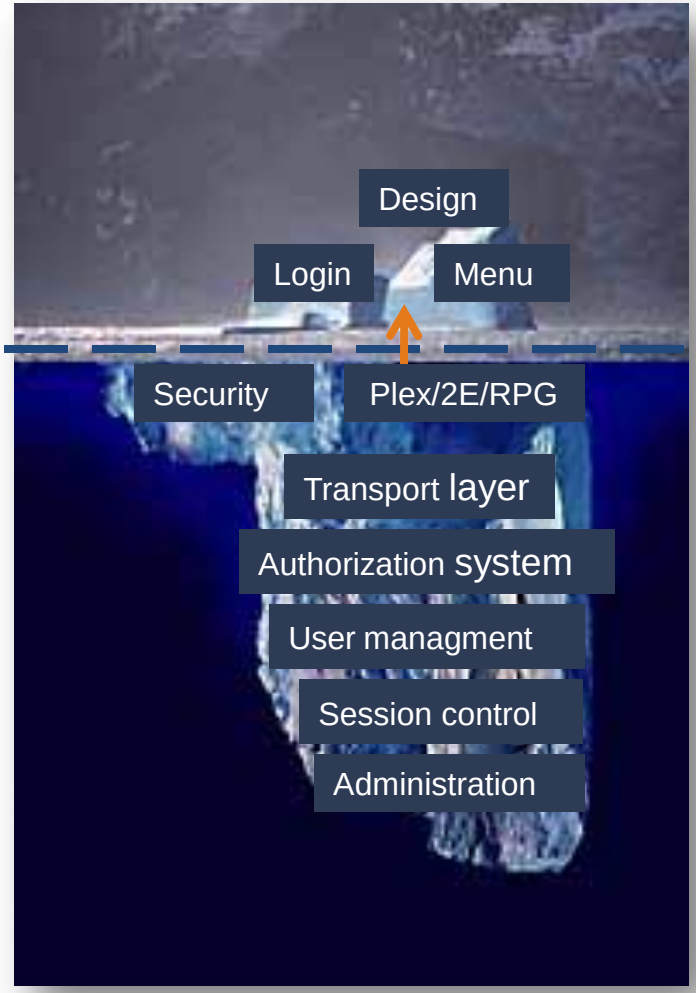
- Code reuse
- Parallel development
- Focused developer roles
- Platform independence
- Greater testability
- Better scalability
- Higher availability

WEBSYDIAN™

WebsydianExpress for 2E – what the..??

Frame for working with web and web services with 2E

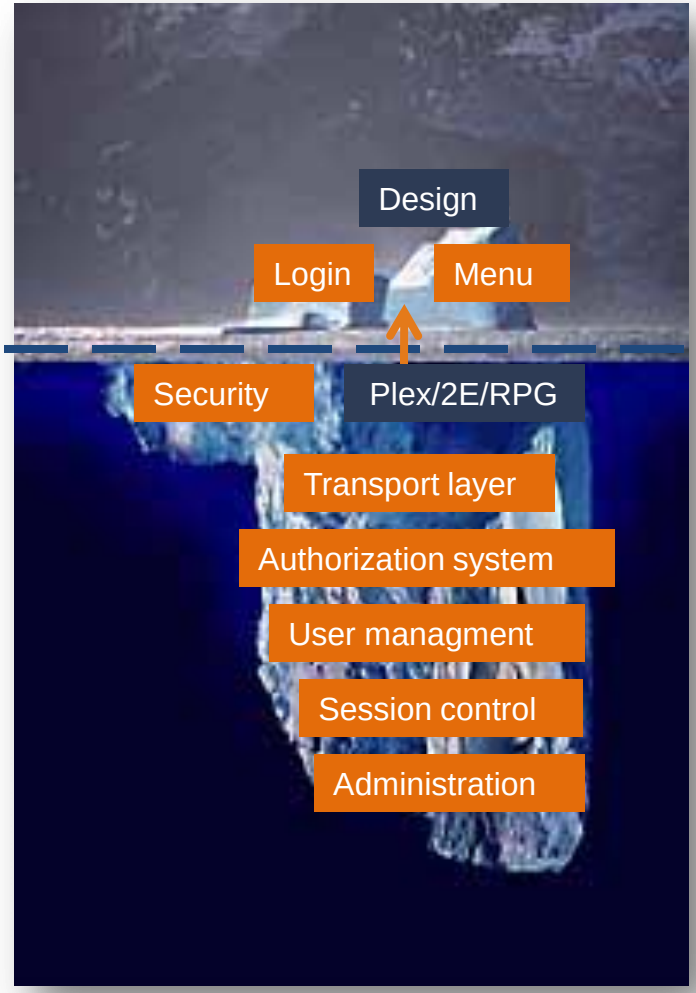
WebsydianExpress for 2E



What the user sees

What the user doesn't see

Nomeco: “90 % of what we needed”



What the user sees.

WebsydianExpress provides all the orange boxes ready to use.

What the user doesn’t see.

WEBSYDIAN™

Internal SOA in your 2E application

How can you start using the SOA mindset in your 2E application and where does WebsydianExpress come into the picture?

- Keep your application clean
- Ensure the interface contract
- Send files in the format of your choice to match receiver's needs

WEBSYDIAN™

Biography

- **Søren Madsen**
- Soft Design A/S
- Chief Consultant
  - Worked with CA 2E since 1990
  - CA Plex since 1996
- Speaker at:
  - CA WORLD and Plex/2E user conferences since 2004
  - COMMON US since 2007

2E SOA and web services

- Customer case
  - Nomeco A/S
    - A subsidiary to Tamro Ltd.
    - In turn a subsidiary of the German group Phoenix, the world's fifth largest pharmaceutical wholesaler
      - 155 distribution centers in 23 countries
      - 51,500 customers in the wholesale sector
      - 100,000 different products on the shelves
      - 650 customers in pre-wholesale
      - 20,253 employees in Europe
      - 19.89 billion EUR turnover

2E SOA and web services

- Nomeco
  - The largest pharmaceutical wholesaler in Denmark
  - Approx. 70% of the Danish market
  - Core application is based on the iSeries in a 2E environment. (Astra400)
  - Approx. 30 people maintain the environment
  - External access by Java, hand-coded etc.

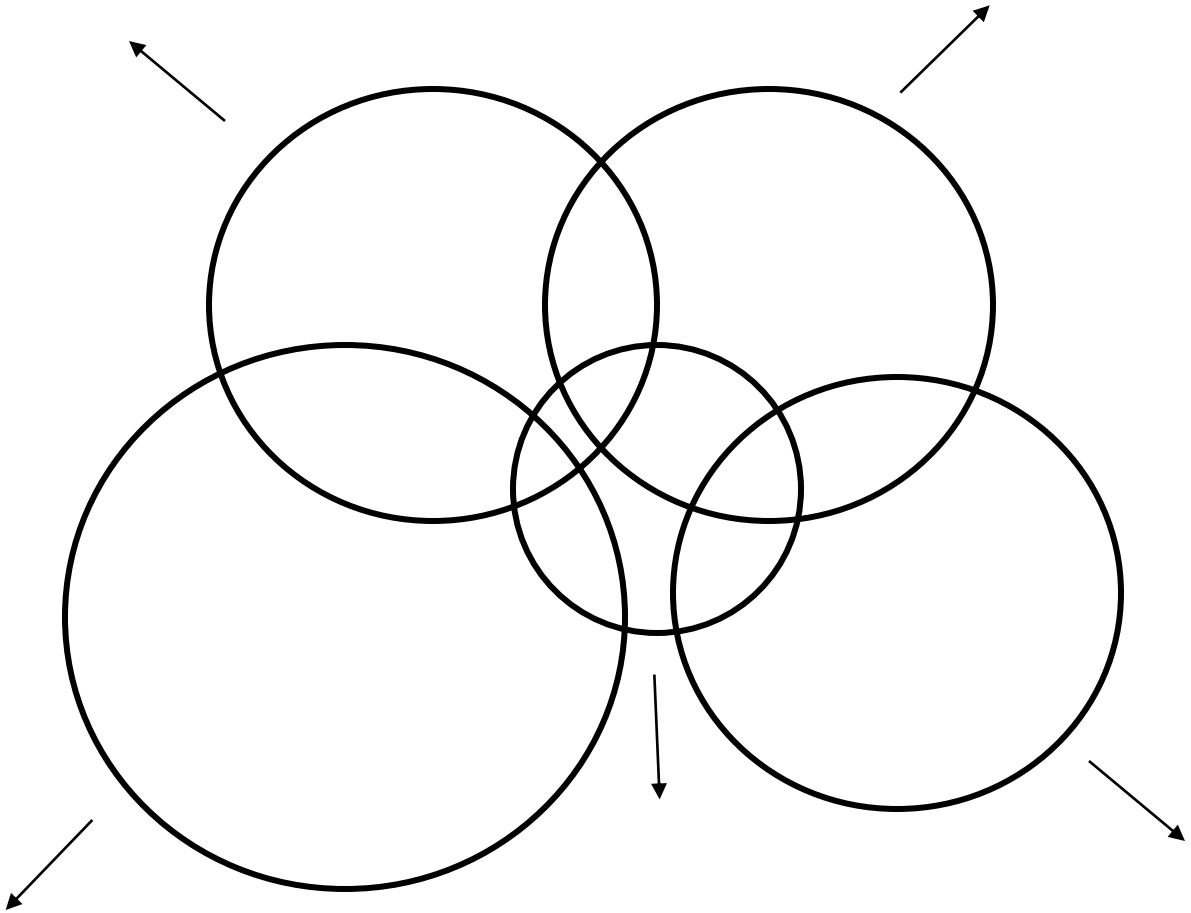
Traditional Development

Every circle is an application area

On top come Java objects and hand written code

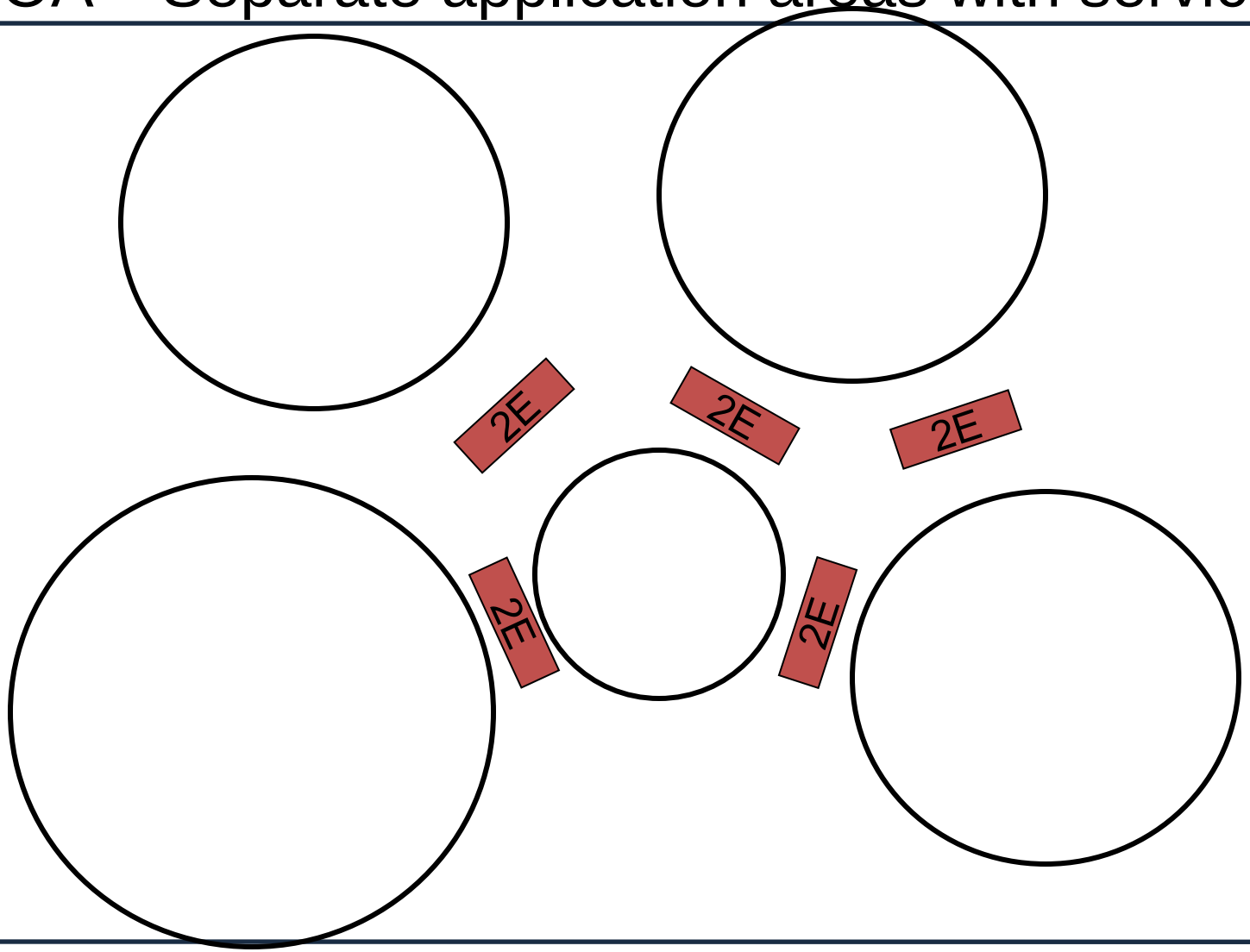
”Read item”
In one of our applications
109 functions are called =>
expensive maintenance and
vulnerable operation

SOA – Separate application areas



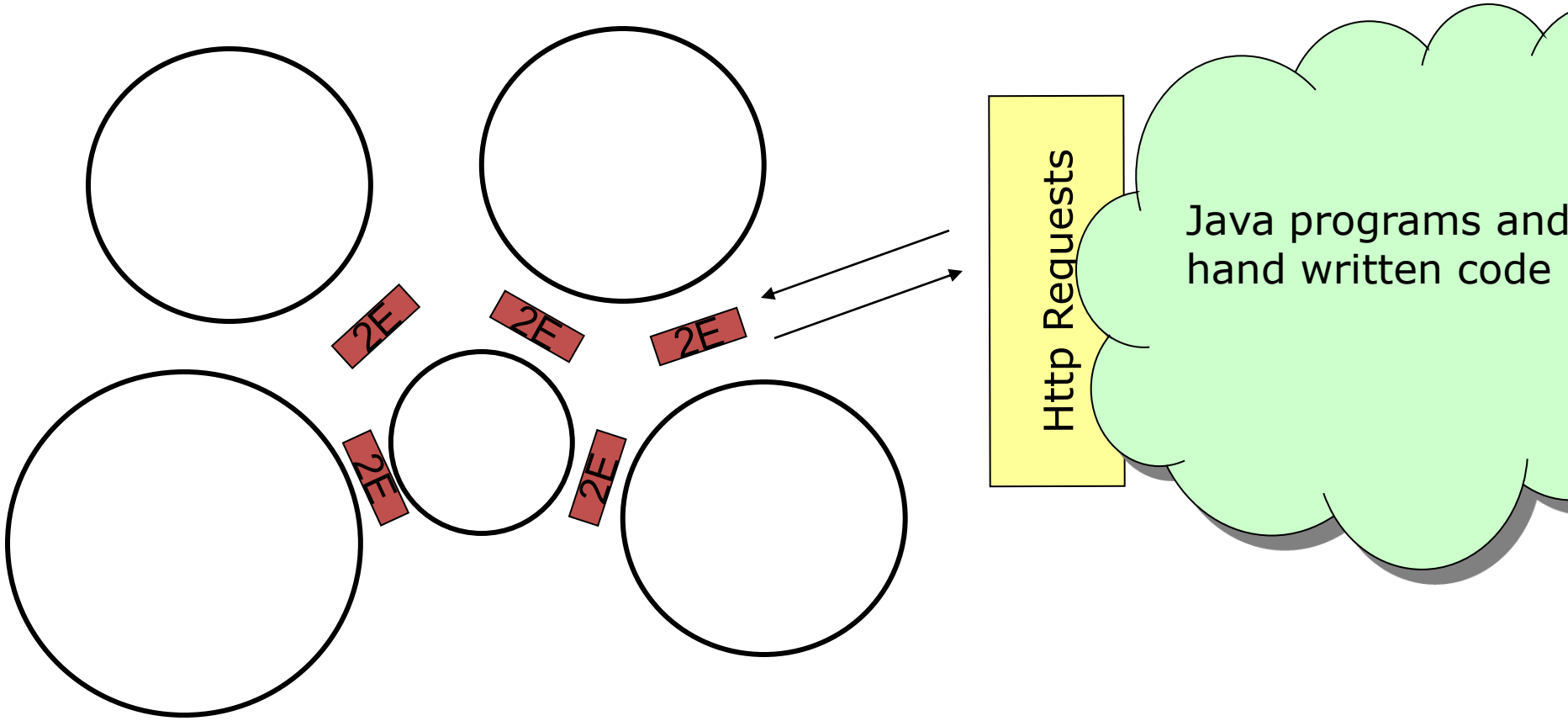
WEBSYDIAN™

SOA – Separate application areas with services



WEBSYDIAN™

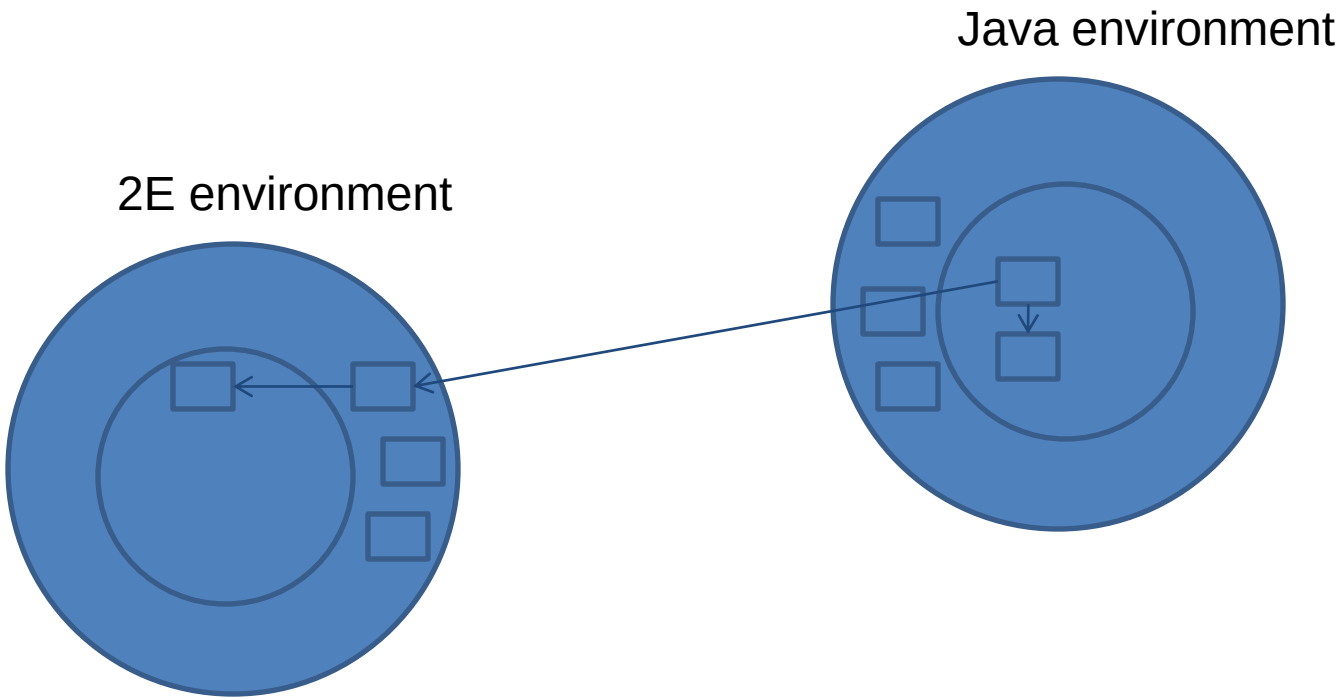
SOA – Java programs feed of the 2E services

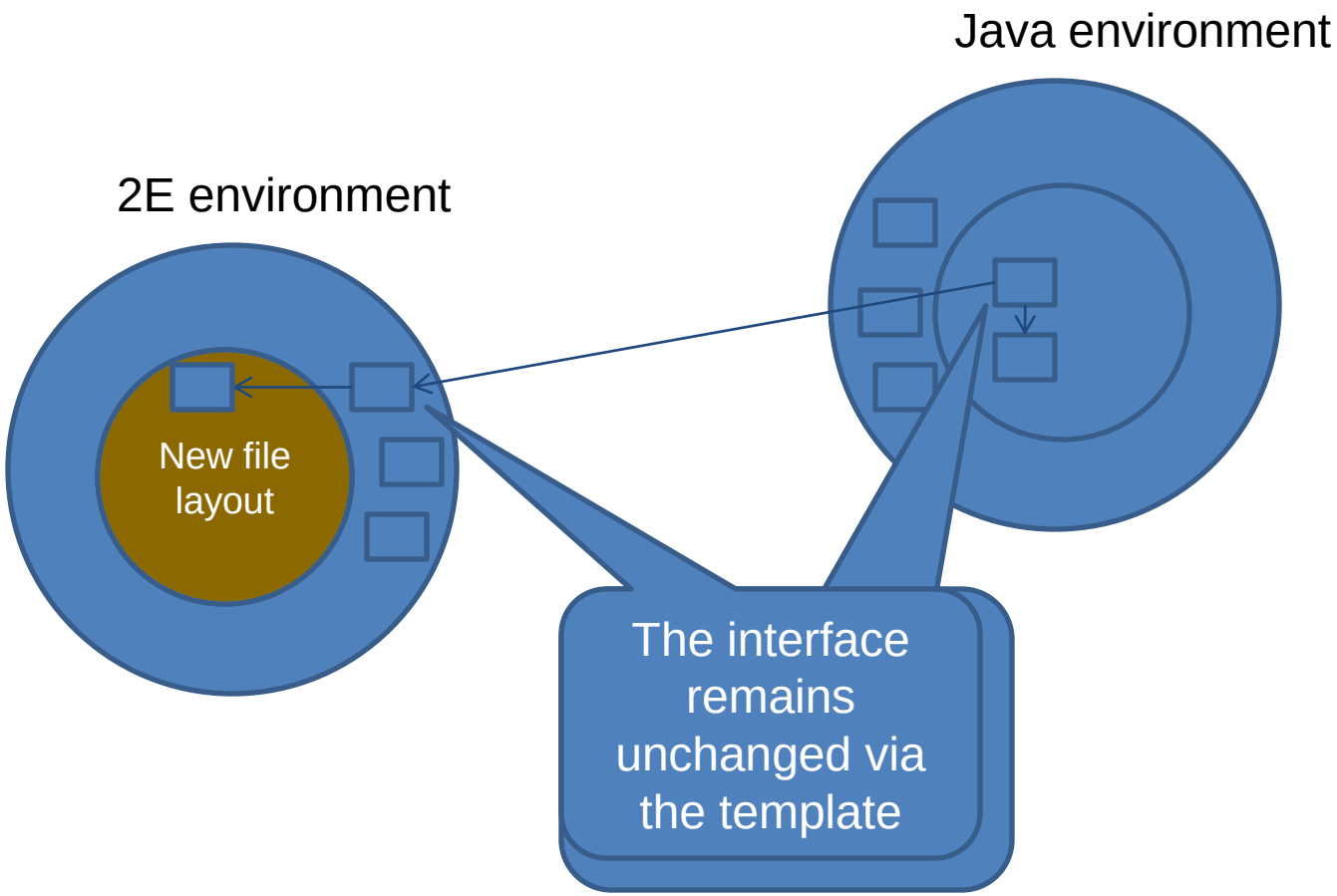


We suggest…

- Let those who know the business logic code the services for the “Java guys” - obtain separation of logic and use.
- Let the Java guys retrieve the data via Http requests.
  - The http requests are received by WebsydianExpress and returned in the desired format:
    - HTML
    - XML
    - Comma separated file
    - Json (JavaScript Object Notation)
    - …

Loose coupling




Java environment
2E environment
New file layout
The interface remains unchanged via the template

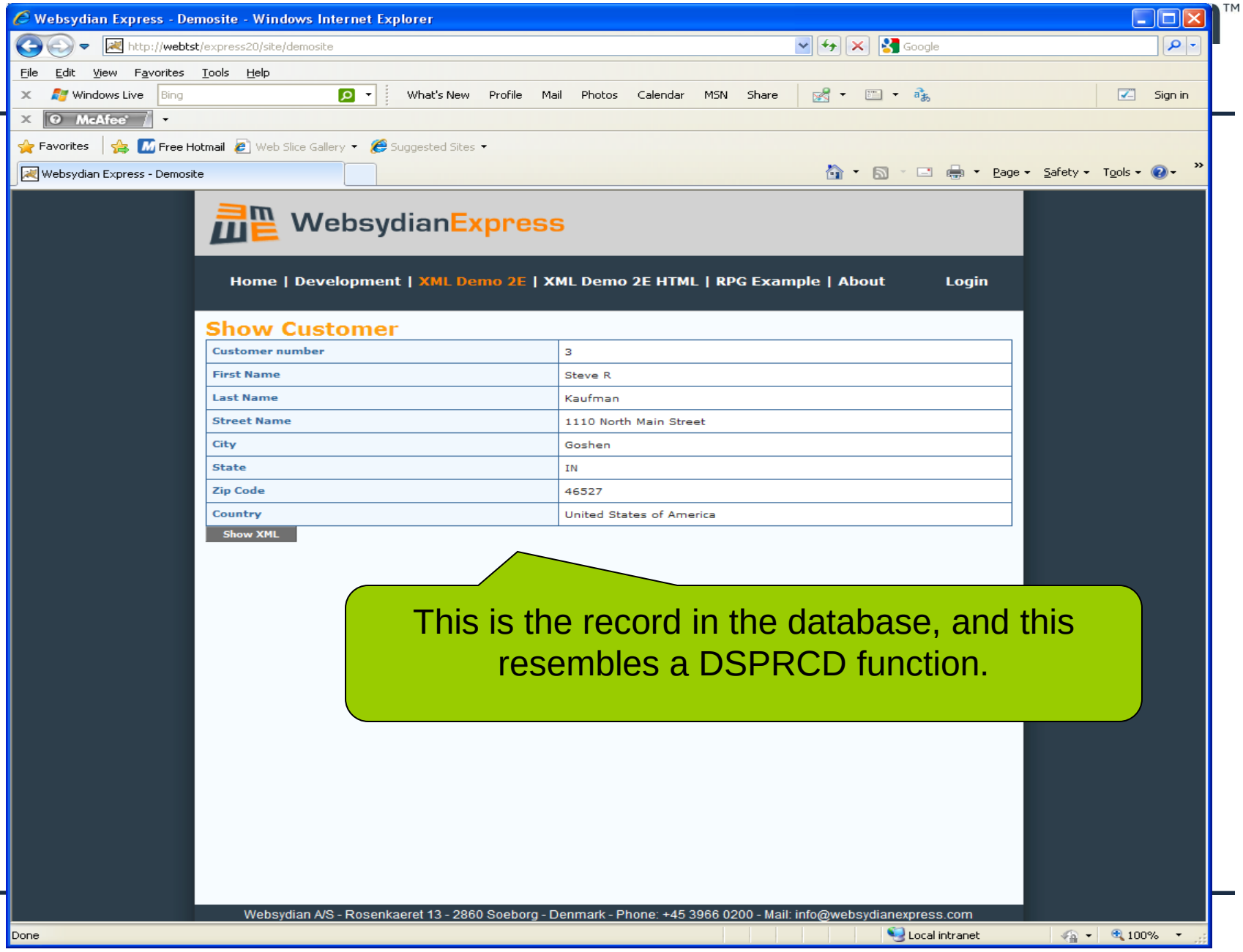
- The response from WebsydianExpress remains unchanged after changes to the file.
  - The response is determined by the template layout and not a change in the parameter.

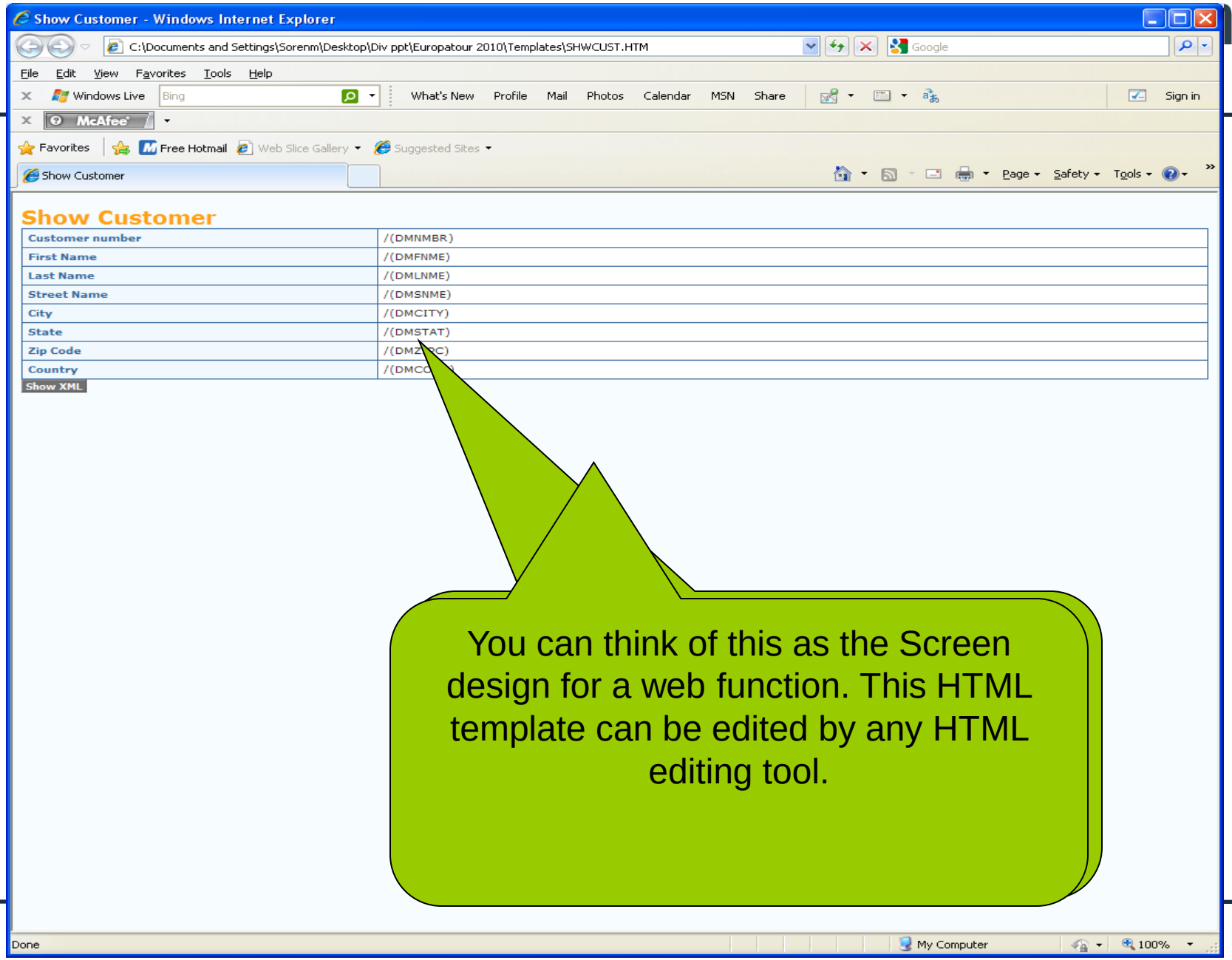
- Compilation and test are performed in the 2E model
  - Ordinary compilation and impact analysis in the 2E environment.

Basic technics of Websydian for 2E

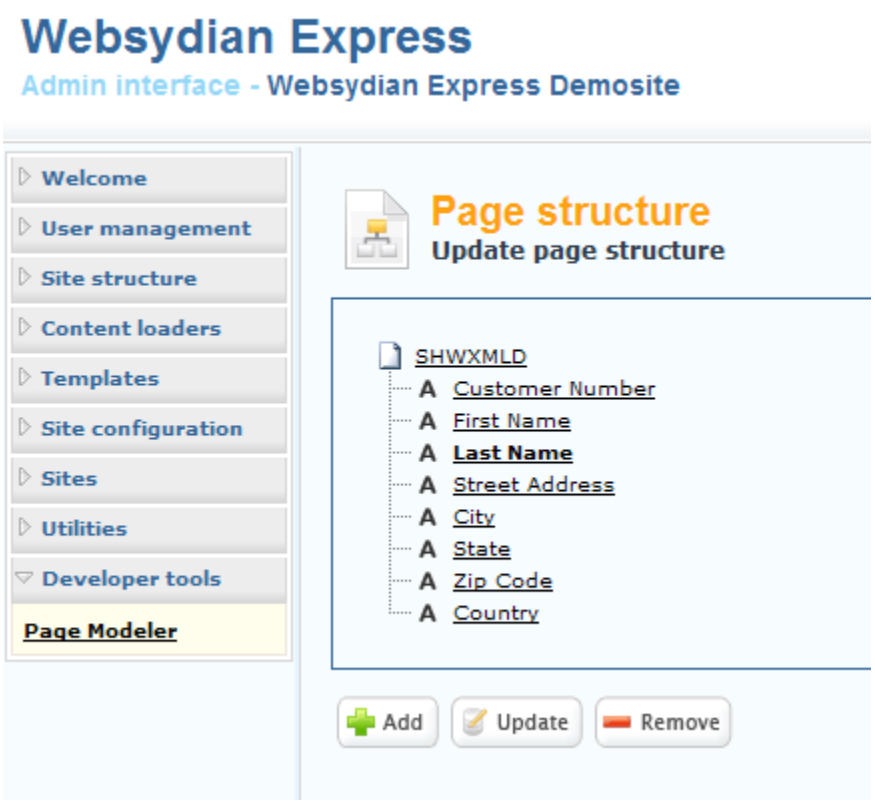
How do we create a page?

- Two things are needed:
  - A program
    - We will use 2E to develop this program.
  - A HTML template with the layout required
    - We will use the Page Modeler in WebsydianExpress to create this template and some hand written templates.
- First, what the end user will see ….


Websydian Express - Demosite - Windows Internet Explorer
http://webtst/express20/site/demosite
Google
File Edit View Favorites Tools Help
Windows Live Bing What's New Profile Mail Photos Calendar MSN Share Sign in
McAfee
Favorites Free Hotmail Web Slice Gallery Suggested Sites
Websydian Express - Demosite
Page Safety Tools
WebsydianExpress
Home | Development | XML Demo 2E | XML Demo 2E HTML | RPG Example | About Login
Show Customer
Customer number 3
First Name Steve R
Last Name Kaufman
Street Name 1110 North Main Street
City Goshen
State IN
Zip Code 46527
Country United States of America
Show XML
This is the record in the database, and this resembles a DSPRCD function.
Websydian A/S - Rosenkaeret 13 - 2860 Soeborg - Denmark - Phone: +45 3966 0200 - Mail: info@websydianexpress.com
Done
Local intranet
100%

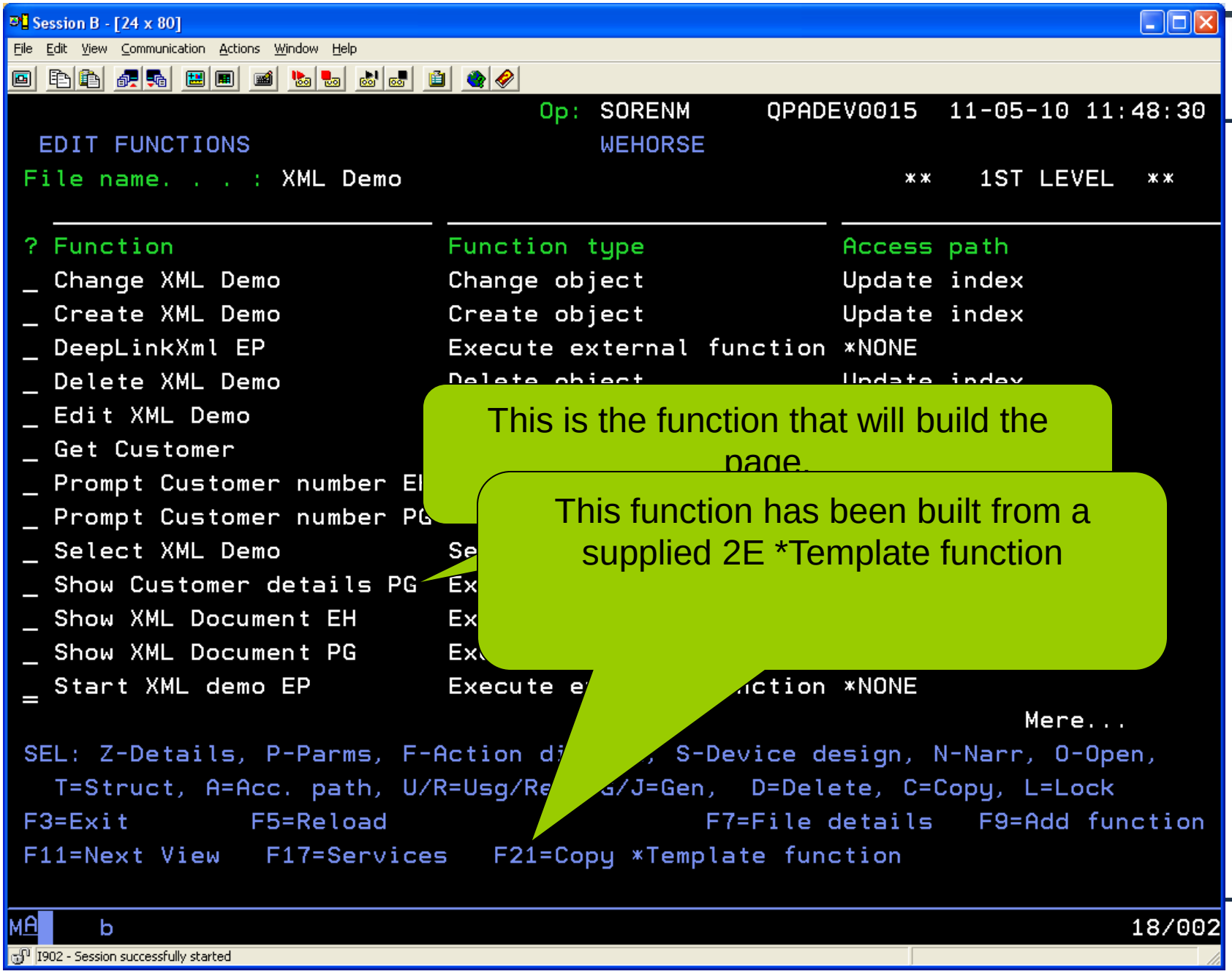

Show Customer - Windows Internet Explorer
C:\Documents and Settings\Sorenm\Desktop\Div ppt\Europatour 2010\Templates\SHWCUST.HTM
File Edit View Favorites Tools Help
Windows Live Bing What's New Profile Mail Photos Calendar MSN Share Sign in
McAfee
Favorites Free Hotmail Web Slice Gallery Suggested Sites
Show Customer
Page Safety Tools
Show Customer
Customer number /(DMNMBR)
First Name /(DMFNME)
Last Name /(DMLNME)
Street Name /(DMSNME)
City /(DMCITY)
State /(DMSTAT)
Zip Code
Country
Show XML
You can think of this as the Screen design for a web function. This HTML template can be edited by any HTML editing tool.
Done
My Computer
100%

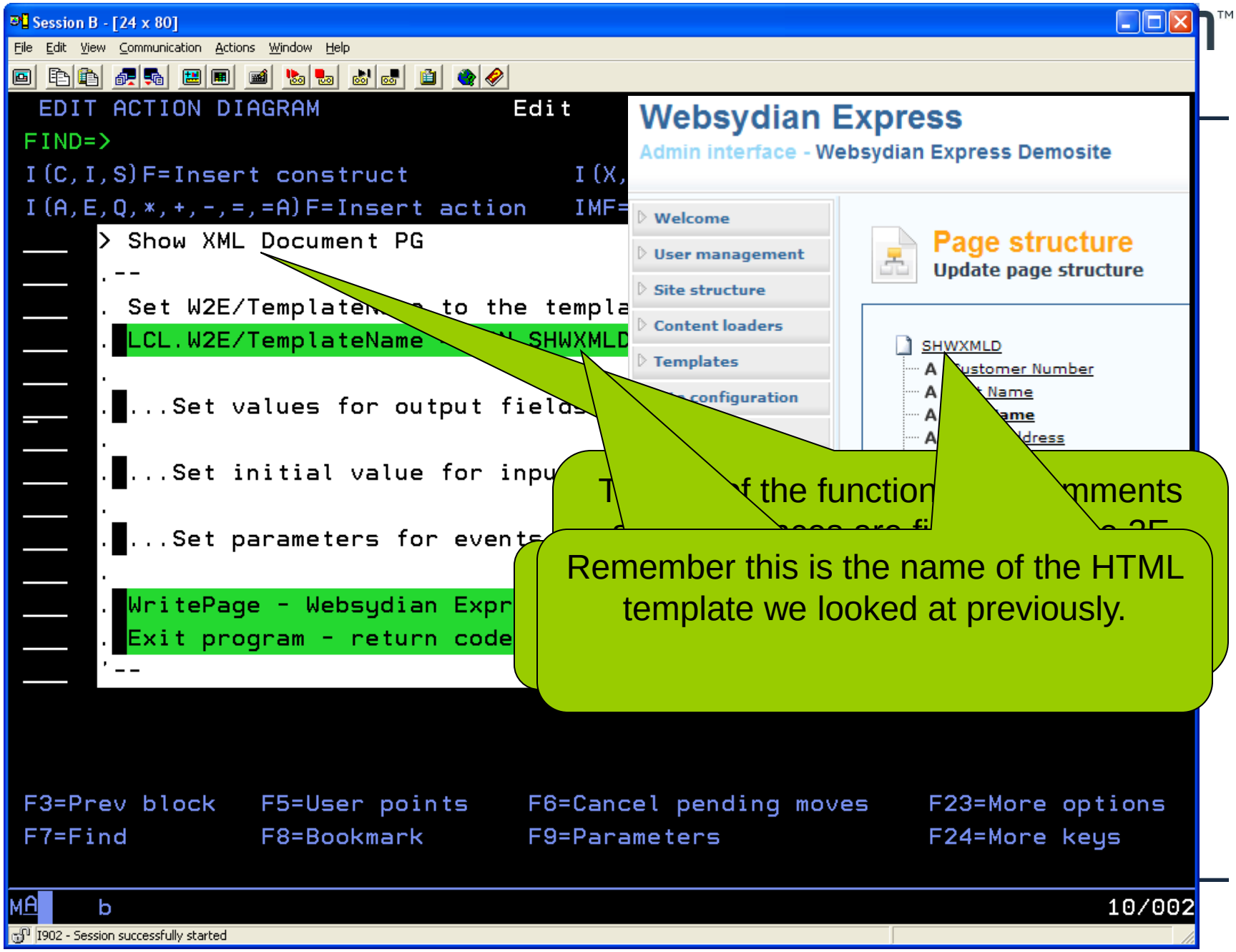
Templates can be created in the Admin Interface or by hand.

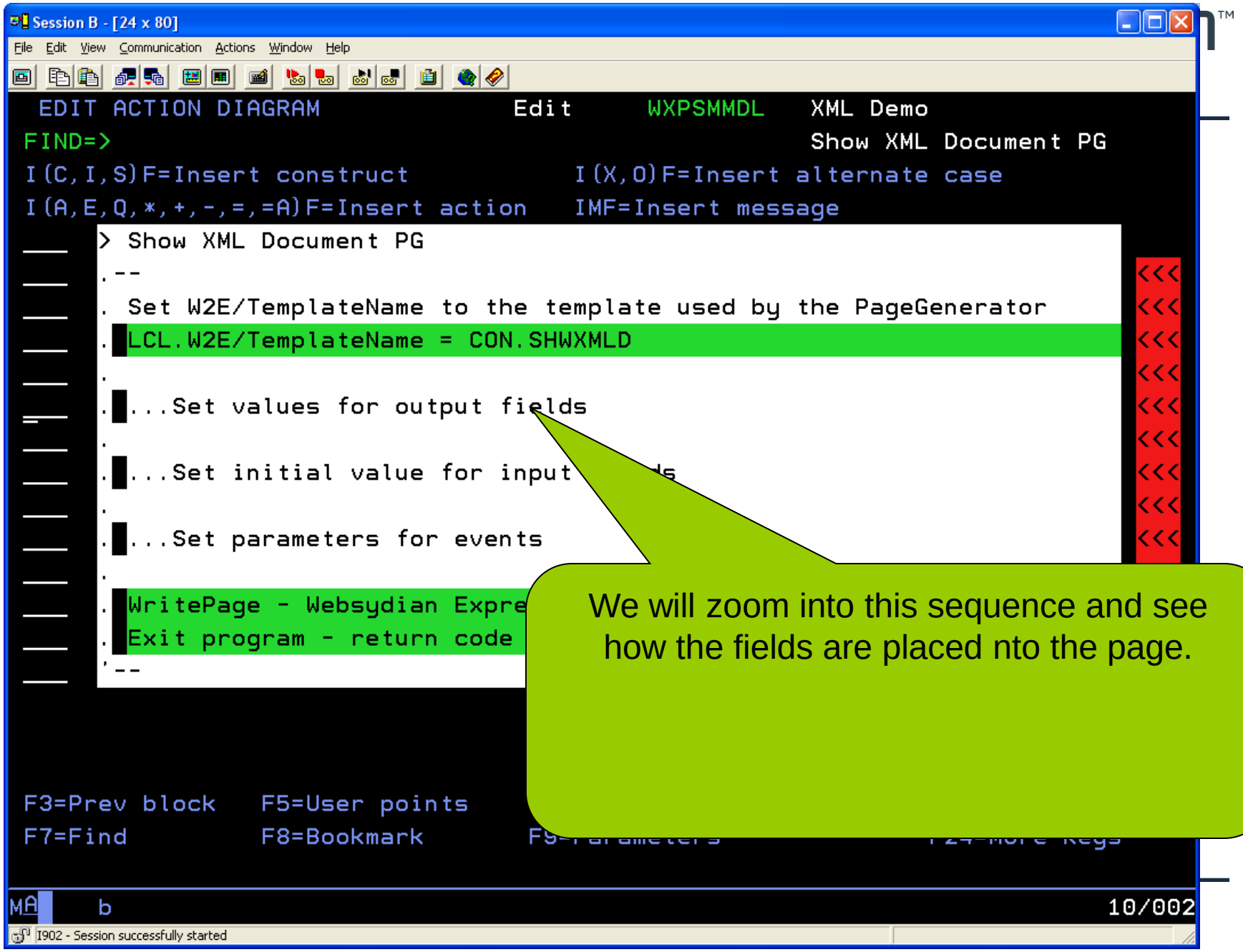


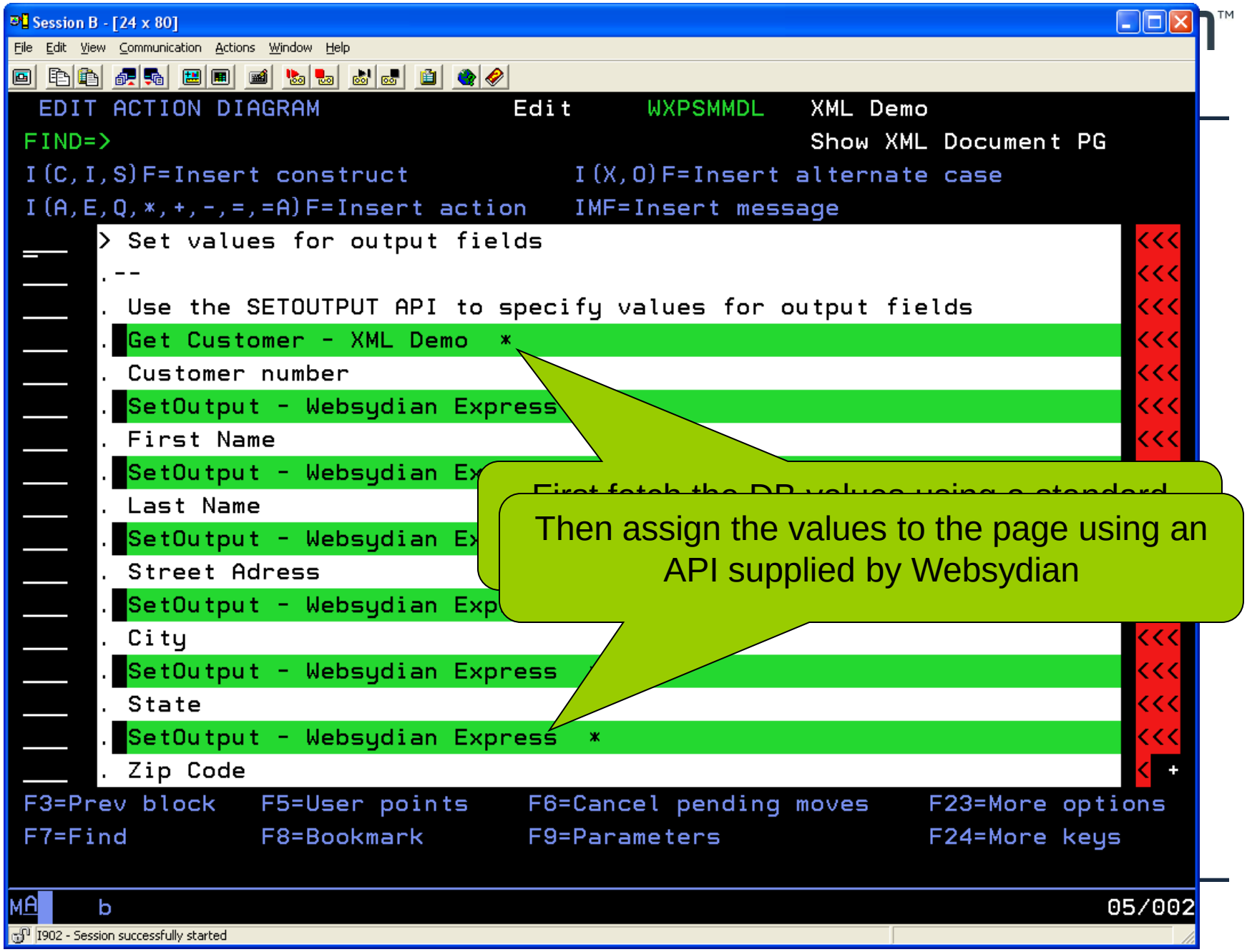
Development

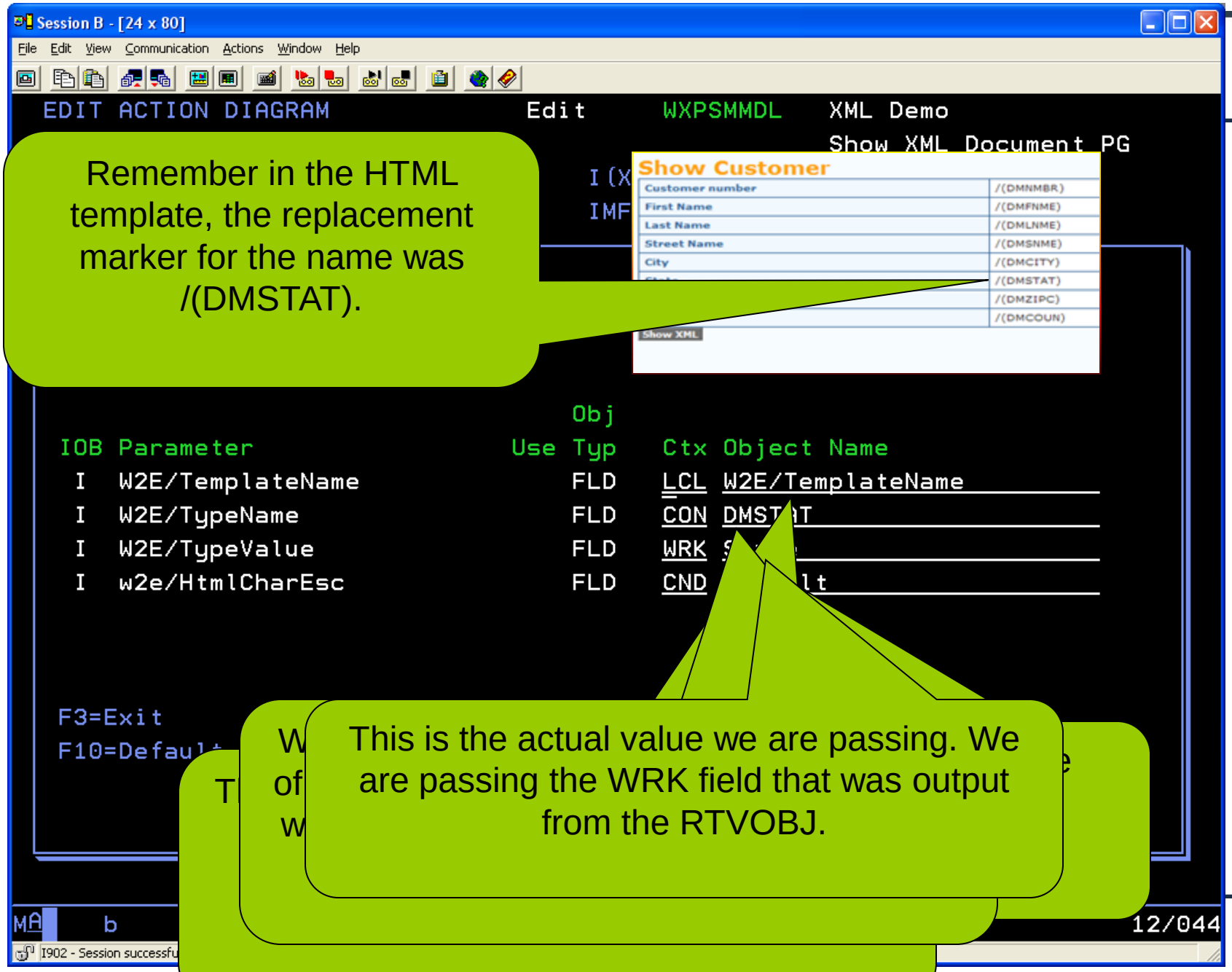
- In the 2E model we are looking at the functions for the Show Customer

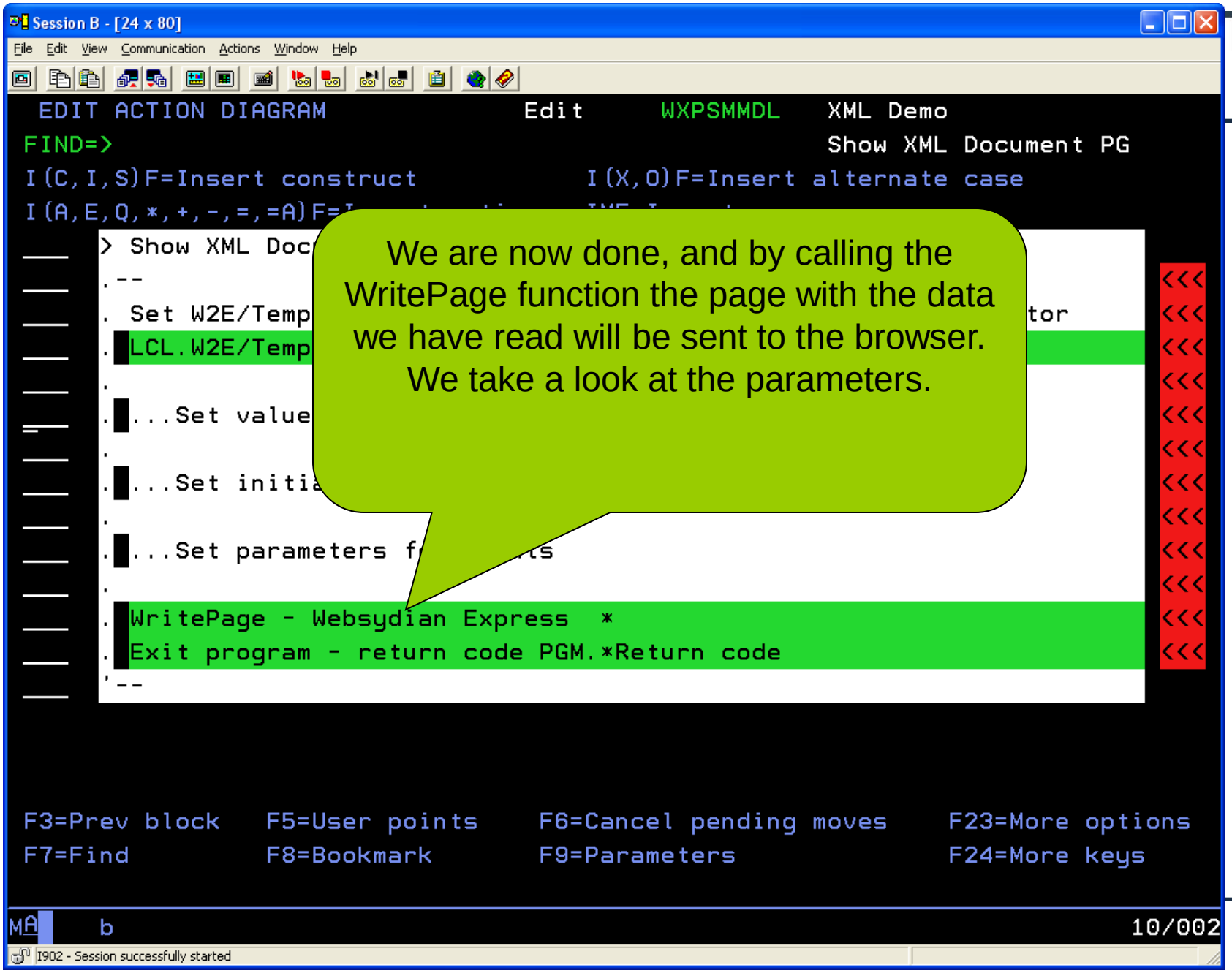

Session B - [24 x 80]
File Edit View Communication Actions Window Help
Op: SORENM QPADEV0015 11-05-10 11:48:30
EDIT FUNCTIONS WEHORSE
File name. . . : XML Demo ** 1ST LEVEL **
? Function Function type Access path
_ Change XML Demo Change object Update index
_ Create XML Demo Create object Update index
_ DeepLinkXml EP Execute external function *NONE
_ Delete XML Demo
_ Edit XML Demo
_ Get Customer
_ Prompt Customer number EH
_ Prompt Customer number PG
_ Select XML Demo
_ Show Customer details PG
_ Show XML Document EH
_ Show XML Document PG
_ Start XML demo EP
Mere...
SEL: Z-Details, P-Parms, F-Action di , S-Device design, N-Narr, O-Open,
T=Struct, A=Acc. path, U/R=Usg/Re G/J=Gen, D=Delete, C=Copy, L=Lock
F3=Exit F5=Reload F7=File details F9=Add function
F11=Next View F17=Services F21=Copy *Template function
MA b 18/002
I902 - Session successfully started
This is the function that will build the page.
This function has been built from a supplied 2E *Template function

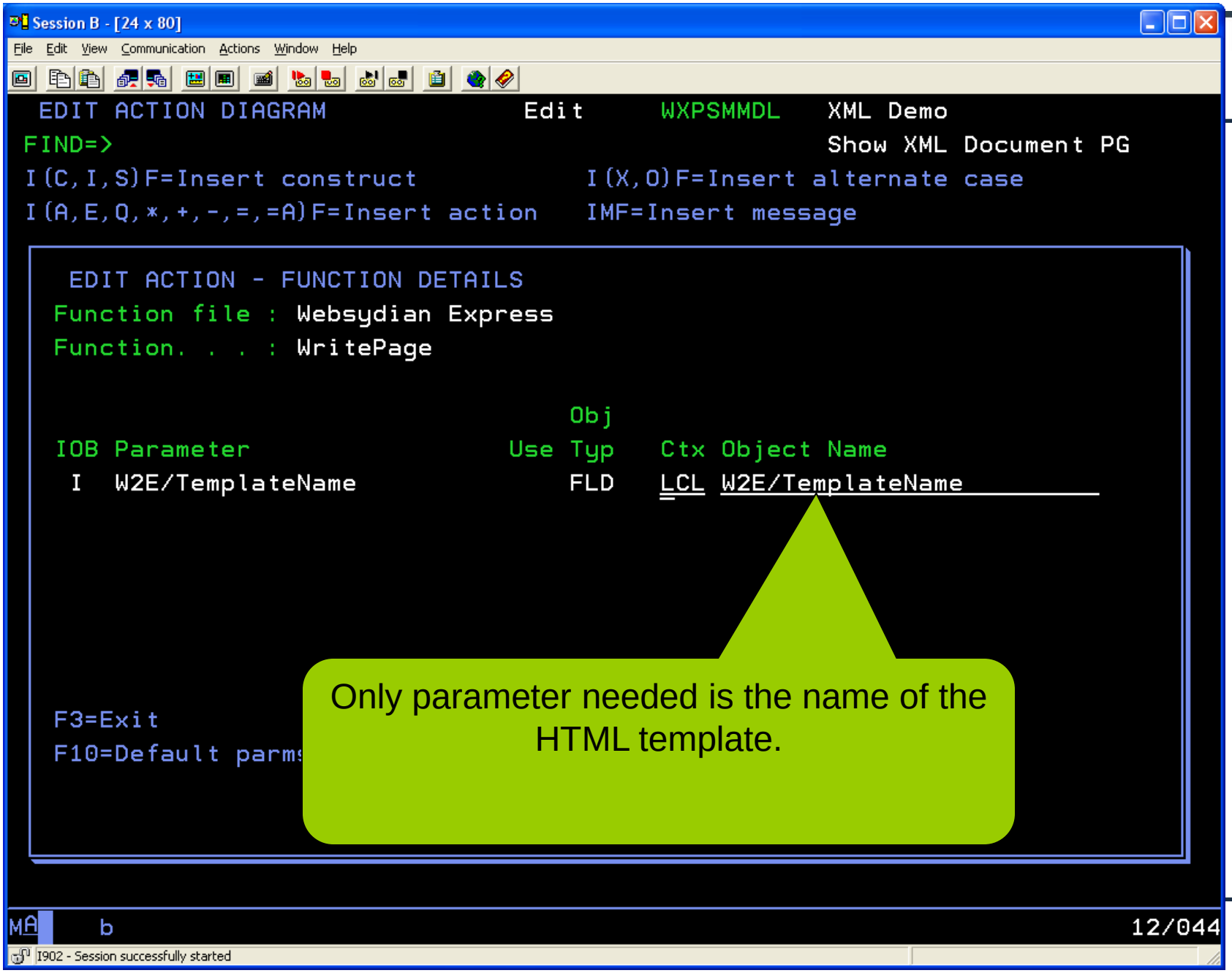

Session B - [24 x 80]
File Edit View Communication Actions Window Help
EDIT ACTION DIAGRAM Edit
FIND=>
I(C,I,S)F=Insert construct
I(A,E,Q,*,+,-,=,=A)F=Insert action
> Show XML Document PG
.--
. Set W2E/Template
to the templa
. LCL.W2E/TemplateName
SHWXMLD
. ...Set values for output fields
. ...Set initial value for inpu
. ...Set parameters for events
. WritePage - Websydian Expr
. Exit program - return code
'--
F3=Prev block F5=User points F6=Cancel pending moves F23=More options
F7=Find F8=Bookmark F9=Parameters F24=More keys
MA b 10/002
I902 - Session successfully started
Websydian Express
Admin interface - Websydian Express Demosite
Welcome
User management
Site structure
Content loaders
Templates
Page structure
Update page structure
SHWXMLD
Customer Number
Name
Remember this is the name of the HTML template we looked at previously.


Session B - [24 x 80]
File Edit View Communication Actions Window Help
EDIT ACTION DIAGRAM Edit WXPSMMDL XML Demo
FIND=> Show XML Document PG
I(C,I,S)F=Insert construct I(X,O)F=Insert alternate case
I(A,E,Q,*,+,-,=,=A)F=Insert action IMF=Insert message
> Show XML Document PG
.--
. Set W2E/TemplateName to the template used by the PageGenerator
. LCL.W2E/TemplateName = CON.SHWXMLD
.
. ...Set values for output fields
.
. ...Set initial value for input
.
. ...Set parameters for events
.
. WritePage - Websydian Expre
. Exit program - return code
'--
F3=Prev block F5=User points
F7=Find F8=Bookmark
MA b 10/002
I902 - Session successfully started
We will zoom into this sequence and see how the fields are placed nto the page.


Session B - [24 x 80]
File Edit View Communication Actions Window Help
EDIT ACTION DIAGRAM Edit WXPSMMDL XML Demo
FIND=> Show XML Document PG
I(C,I,S)F=Insert construct I(X,O)F=Insert alternate case
I(A,E,Q,*,+,-,=,=A)F=Insert action IMF=Insert message
> Set values for output fields
.--
. Use the SETOUTPUT API to specify values for output fields
. Get Customer - XML Demo *
. Customer number
. SetOutput - Websydian Express
. First Name
. SetOutput - Websydian Ex
. Last Name
. SetOutput - Websydian Ex
. Street Adress
. SetOutput - Websydian Exp
. City
. SetOutput - Websydian Express
. State
. SetOutput - Websydian Express *
. Zip Code
Then assign the values to the page using an API supplied by Websydian
F3=Prev block F5=User points F6=Cancel pending moves F23=More options
F7=Find F8=Bookmark F9=Parameters F24=More keys
MA b 05/002
I902 - Session successfully started

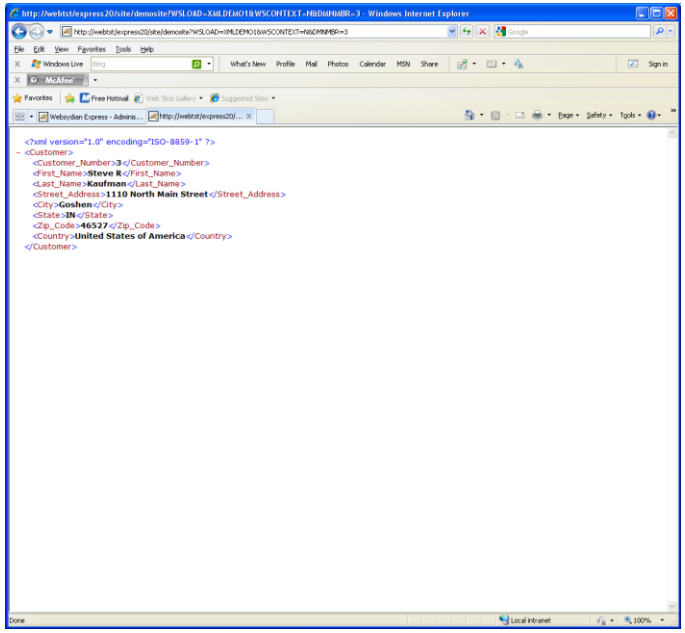

Session B - [24 x 80]
File Edit View Communication Actions Window Help
EDIT ACTION DIAGRAM
Edit
WXPSMMDL
XML Demo
Show XML Document PG
Remember in the HTML template, the replacement marker for the name was /(DMSTAT).
Show Customer
Customer number
/(DMNMBR)
First Name
/(DMFNME)
Last Name
/(DMLNME)
Street Name
/(DMSNME)
City
/(DMCITY)
/(DMSTAT)
/(DMZIPC)
/(DMCOUN)
Show XML
Obj
IOB Parameter
Use Typ
Ctx Object Name
I W2E/TemplateName
FLD
LCL W2E/TemplateName
I W2E/TypeName
FLD
CON DMST T
I W2E/TypeValue
FLD
WRK
I w2e/HtmlCharEsc
FLD
CND
F3=Exit
This is the actual value we are passing. We are passing the WRK field that was output from the RTVOBJ.
12/044
I902 - Session successfu


Session B - [24 x 80]
File Edit View Communication Actions Window Help
EDIT ACTION DIAGRAM Edit WXPSMMDL XML Demo
FIND=> Show XML Document PG
I(C,I,S)F=Insert construct I(X,O)F=Insert alternate case
I(A,E,Q,*,+,-,=,=A)F=
> Show XML Doc
.--
. Set W2E/Temp
. LCL.W2E/Temp
.
. ...Set value
.
. ...Set initia
.
. ...Set parameters f
.
. WritePage - Websydian Express *
. Exit program - return code PGM.*Return code
'--
We are now done, and by calling the WritePage function the page with the data we have read will be sent to the browser. We take a look at the parameters.
F3=Prev block F5=User points F6=Cancel pending moves F23=More options
F7=Find F8=Bookmark F9=Parameters F24=More keys
MA b 10/002
I902 - Session successfully started

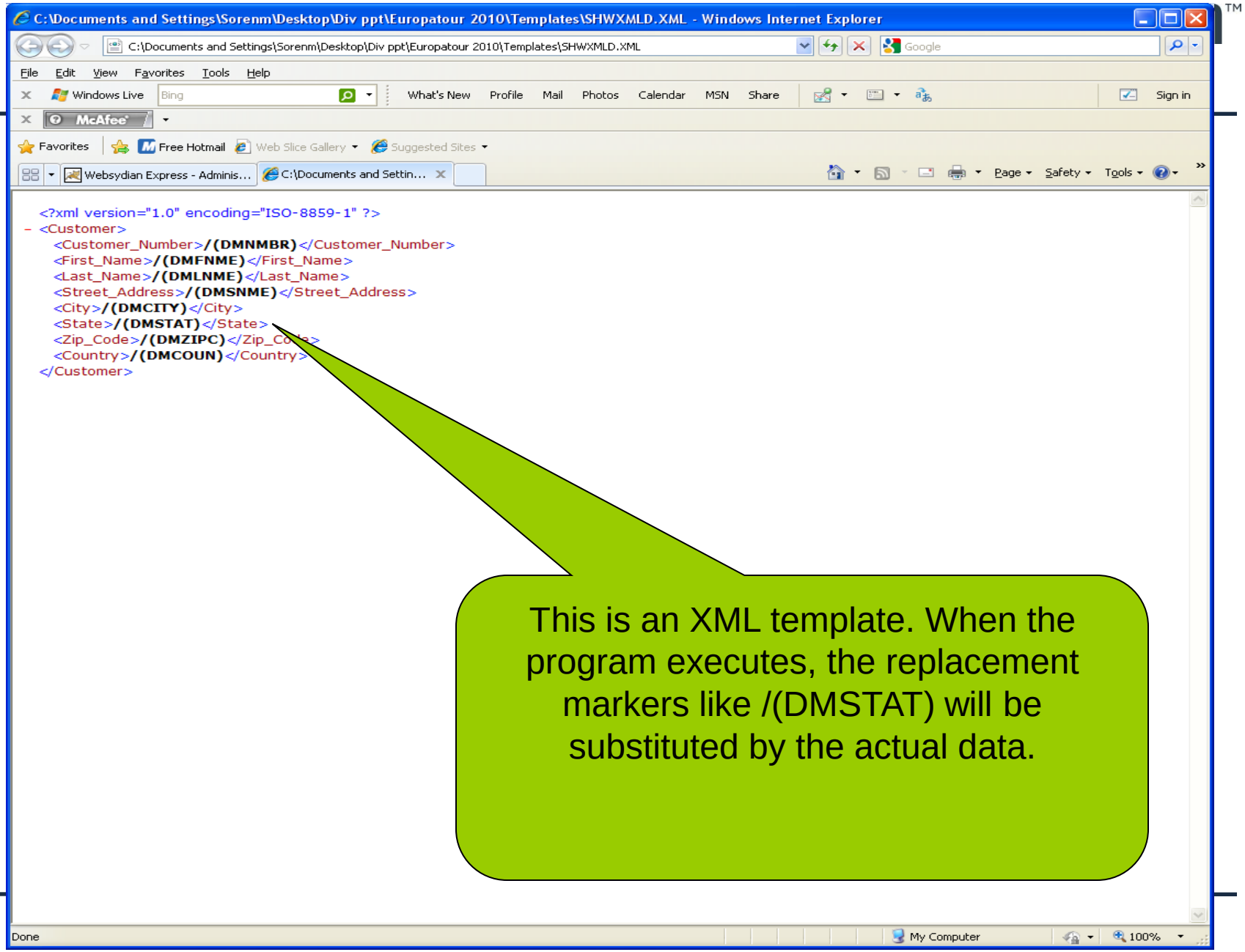

Session B - [24 x 80]
File Edit View Communication Actions Window Help
EDIT ACTION DIAGRAM Edit WXPSMMDL XML Demo
FIND=> Show XML Document PG
I(C,I,S)F=Insert construct I(X,O)F=Insert alternate case
I(A,E,Q,*,+,-,=,=A)F=Insert action IMF=Insert message
EDIT ACTION - FUNCTION DETAILS
Function file : Websydian Express
Function. . . : WritePage
IOB Parameter Use Obj Typ Ctx Object Name
I W2E/TemplateName FLD LCL W2E/TemplateName
F3=Exit
F10=Default parms
Only parameter needed is the name of the HTML template.
MA b 12/044
I902 - Session successfully started

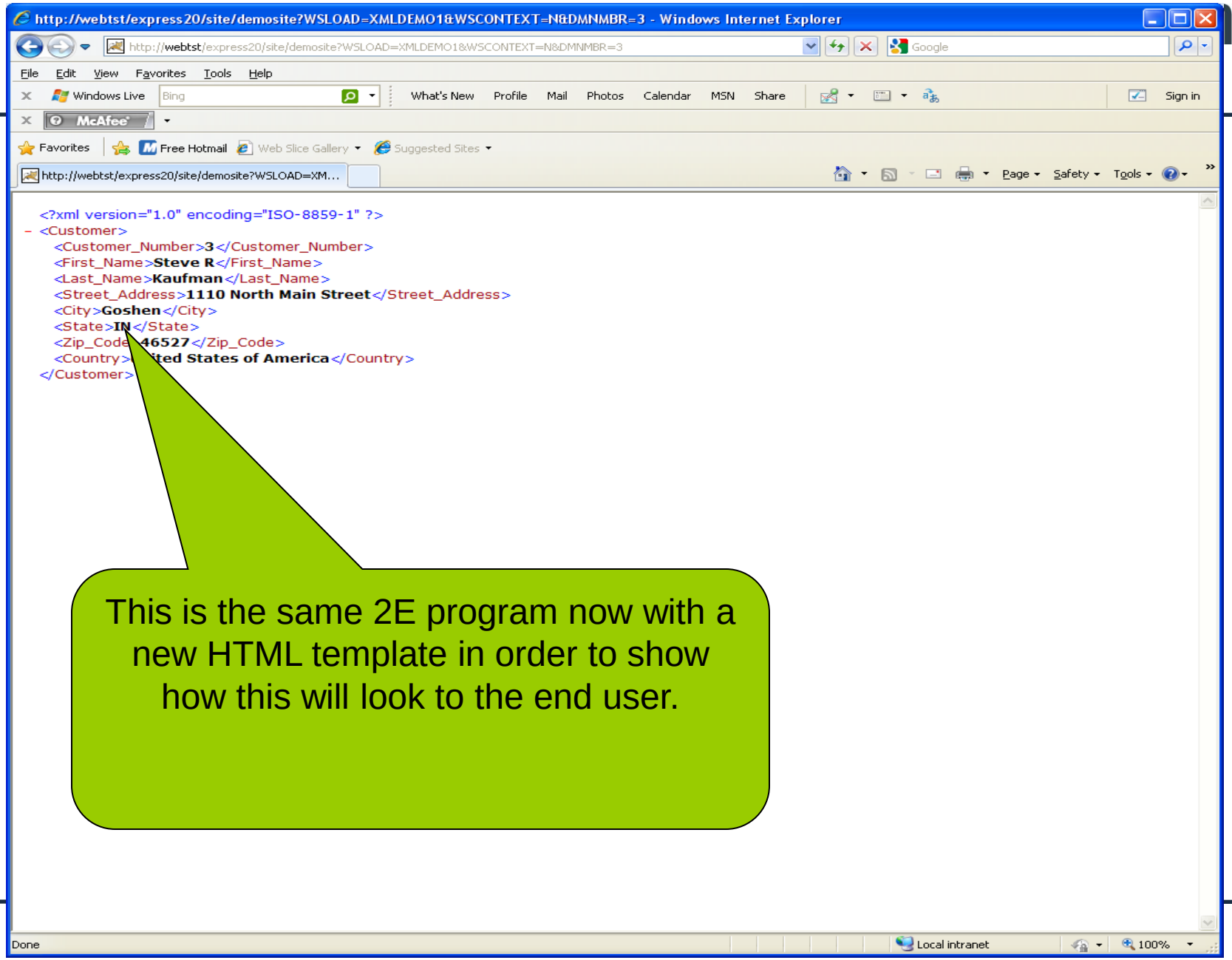
Done

- Now the Show Customer will be displayed.
- Only about 15 lines of AD required.
- But how about those XML,CVS,JSON …….

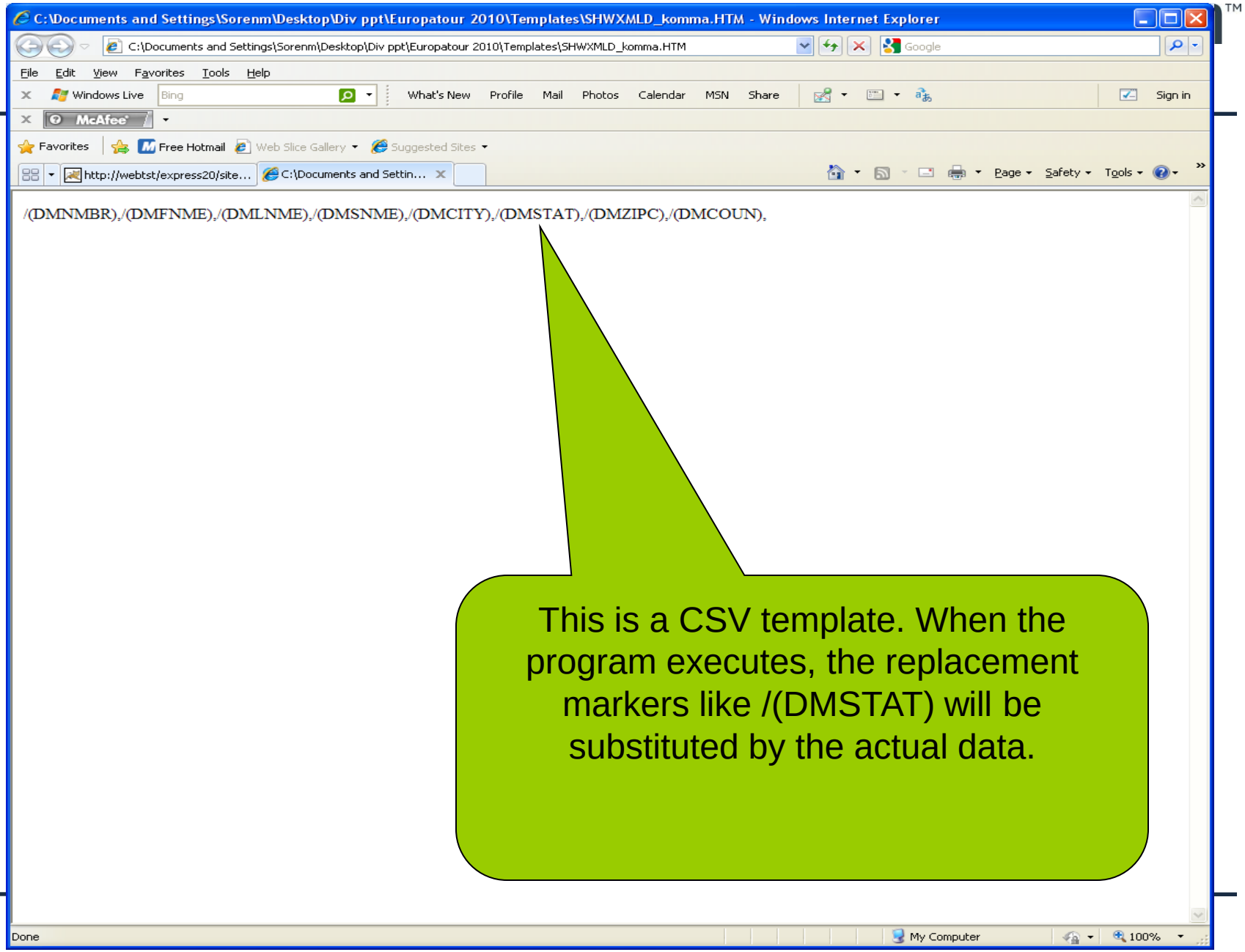


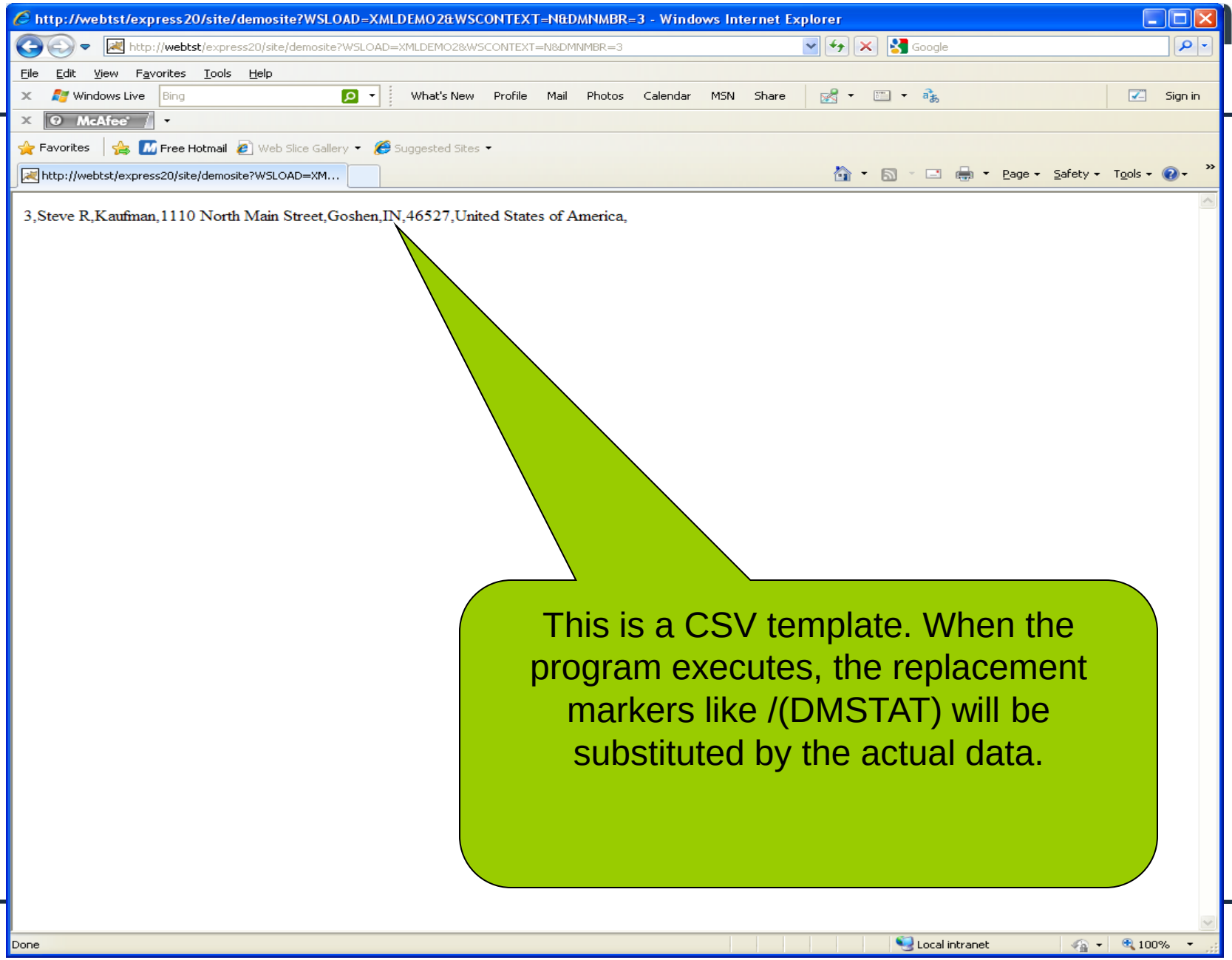
Templates can be used in many formats

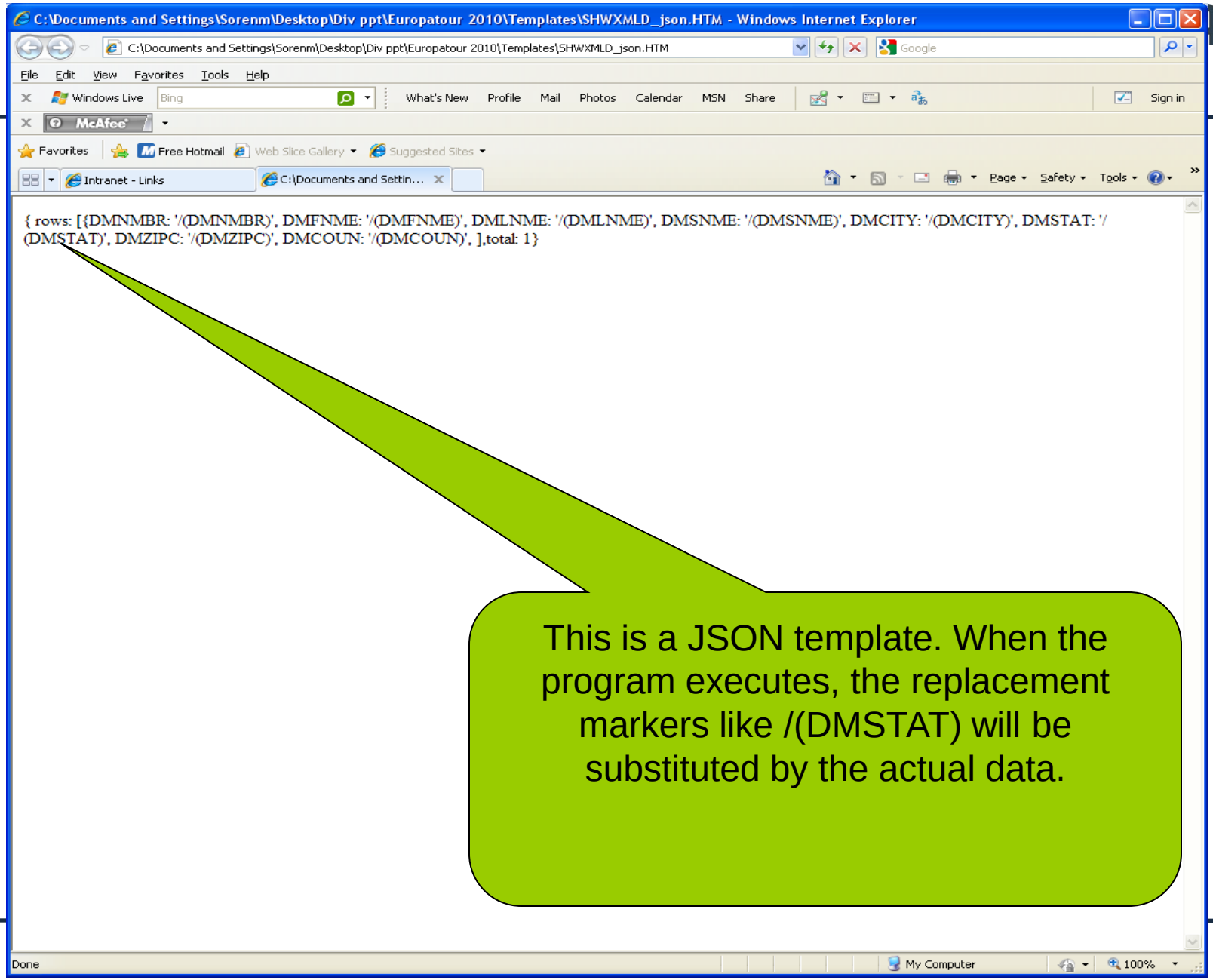

C:\Documents and Settings\Sorenm\Desktop\Div ppt\Europatour 2010\Templates\SHWXMLD.XML - Windows Internet Explorer
C:\Documents and Settings\Sorenm\Desktop\Div ppt\Europatour 2010\Templates\SHWXMLD.XML
File Edit View Favorites Tools Help
Windows Live Bing What's New Profile Mail Photos Calendar MSN Share Sign in
McAfee
Favorites Free Hotmail Web Slice Gallery Suggested Sites
Websydian Express - Adminis... C:\Documents and Settin...
Page Safety Tools
<?xml version="1.0" encoding="ISO-8859-1" ?>
<Customer>
<Customer_Number>/(DMNMBR)</Customer_Number>
<First_Name>/(DMFNME)</First_Name>
<Last_Name>/(DMLNME)</Last_Name>
<Street_Address>/(DMSNME)</Street_Address>
<City>/(DMCITY)</City>
<State>/(DMSTAT)</State>
<Zip_Code>/(DMZIPC)</Zip_Code>
<Country>/(DMCOUN)</Country>
</Customer>
This is an XML template. When the program executes, the replacement markers like /(DMSTAT) will be substituted by the actual data.
Done
My Computer
100%

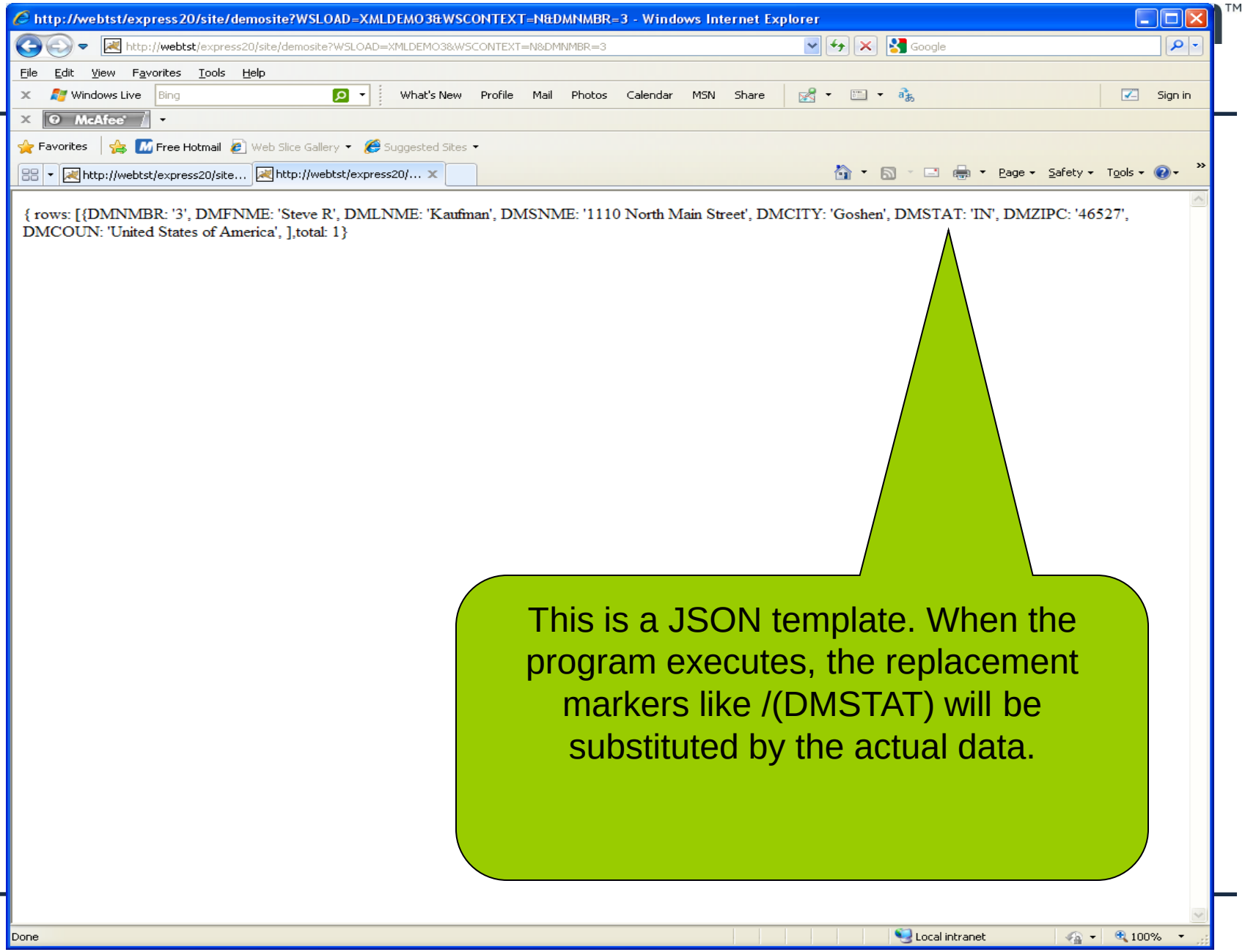

http://webtst/express20/site/demosite?WSLOAD=XMLDEMO1&WSCONTEXT=N&DMNMBR=3 - Windows Internet Explorer
File Edit View Favorites Tools Help
Windows Live
What's New Profile Mail Photos Calendar MSN Share
Sign in
McAfee
Favorites
Free Hotmail
Web Slice Gallery
Suggested Sites
Page Safety Tools
<?xml version="1.0" encoding="ISO-8859-1" ?>
<Customer>
<Customer_Number>3</Customer_Number>
<First_Name>Steve R</First_Name>
<Last_Name>Kaufman</Last_Name>
<Street_Address>1110 North Main Street</Street_Address>
<City>Goshen</City>
<State>IN</State>
<Zip_Code>46527</Zip_Code>
<Country>ited States of America</Country>
</Customer>
This is the same 2E program now with a new HTML template in order to show how this will look to the end user.
Done
Local intranet
100%

OR……


C:\Documents and Settings\Sorenm\Desktop\Div ppt\Europatour 2010\Templates\SHWXMLD_komma.HTM - Windows Internet Explorer
C:\Documents and Settings\Sorenm\Desktop\Div ppt\Europatour 2010\Templates\SHWXMLD_komma.HTM
File Edit View Favorites Tools Help
Windows Live Bing What's New Profile Mail Photos Calendar MSN Share Sign in
McAfee
Favorites Free Hotmail Web Slice Gallery Suggested Sites
http://webtst/express20/site... C:\Documents and Settin...
Page Safety Tools
/(DMNMBR),/(DMFNME),/(DMLNME),/(DMSNME),/(DMCITY),/(DMSTAT),/(DMZIPC),/(DMCOUN),
This is a CSV template. When the program executes, the replacement markers like /(DMSTAT) will be substituted by the actual data.
Done
My Computer
100%


http://webtst/express20/site/demosite?WSLOAD=XMLDEMO2&WSCONTEXT=N&DMNMBR=3 - Windows Internet Explorer
File Edit View Favorites Tools Help
Windows Live
What's New
Profile
Mail
Photos
Calendar
MSN
Share
Sign in
McAfee
Favorites
Free Hotmail
Web Slice Gallery
Suggested Sites
Page
Safety
Tools
3,Steve R,Kaufman,1110 North Main Street,Goshen,IN,46527,United States of America,
This is a CSV template. When the program executes, the replacement markers like /(DMSTAT) will be substituted by the actual data.
Done
Local intranet
100%

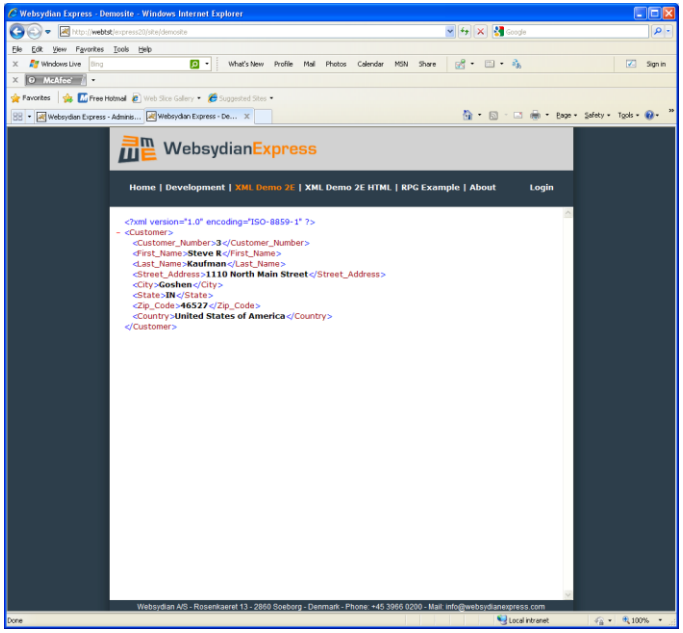

C:\Documents and Settings\Sorenm\Desktop\Div ppt\Europatour 2010\Templates\SHWXMLD_json.HTM - Windows Internet Explorer
C:\Documents and Settings\Sorenm\Desktop\Div ppt\Europatour 2010\Templates\SHWXMLD_json.HTM
File Edit View Favorites Tools Help
Windows Live Bing What's New Profile Mail Photos Calendar MSN Share Sign in
McAfee
Favorites Free Hotmail Web Slice Gallery Suggested Sites
Intranet - Links
C:\Documents and Settin...
Page Safety Tools
{ rows: [{DMNMBR: '/(DMNMBR)', DMFNME: '/(DMFNME)', DMLNME: '/(DMLNME)', DMSNME: '/(DMSNME)', DMCITY: '/(DMCITY)', DMSTAT: '/(DMSTAT)', DMZIPC: '/(DMZIPC)', DMCOUN: '/(DMCOUN)',],total: 1}
This is a JSON template. When the program executes, the replacement markers like /(DMSTAT) will be substituted by the actual data.
Done
My Computer
100%


http://webtst/express20/site/demosite?WSLOAD=XMLDEMO3&WSCONTEXT=N&DMNMBR=3 - Windows Internet Explorer
{ rows: [{DMNMBR: '3', DMFNME: 'Steve R', DMLNME: 'Kaufman', DMSNME: '1110 North Main Street', DMCITY: 'Goshen', DMSTAT: 'IN', DMZIPC: '46527', DMCOUN: 'United States of America',],total: 1}
This is a JSON template. When the program executes, the replacement markers like /(DMSTAT) will be substituted by the actual data.

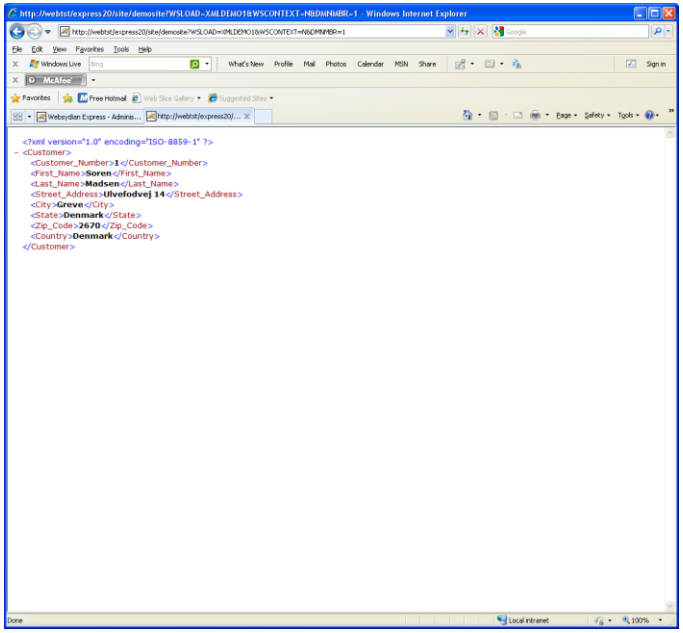
- In the WebsydianExpress environment a template equals a presentation.
- To each program it is possible to assign several presentations.
- Presentations are selected for each menu point.

- That means that if you create a series of menu points one for each format (HTML, XML, CVS, JSON ….), it is possible to assign the relevant presentation.

- In order to make it useful outside the WE environment
  - Session, Signing, Menu points……



- We use Deep Links.
  - A way of calling WE functions in an easy way from outside the WE environment



- Create 4 menu points that nobody has access to
  - Done using roles (Authorization)
- Create 4 corresponding Aliases (used by Deep Links)
  - In this case
    - XMLDEMO = HTML
    - XMLDEMO1 = XML
    - XMLDEMO2 = CVS
    - XMLDEMO3 = JSON

- Call using HTTP client
  - http://webtst/express20/site/demosite?WSLOAD=XMLDEMO1&WSCONTEXT=N&DMNMBR=3

In this example we are using XMLDEMO1 Alias = XML

- Call using HTTP client
  - http://webtst/express20/site/demosite?WSLOAD=XMLDEMO1&WSCONTEXT=N&DMNMBR=3

    Use as many parms as you want. In this case just the customer number.

Provide web services via WebsydianExpress

Demo

WEBSYDIAN™

Summary

- You can start your internal SOA keeping your interfaces ”clean” by separating logic and use with services.

- WebsydianExpress for 2E supplies the transport layer and framework for providing web services for others to consume from your 2E application.

Questions