SYNERGY 2015

SEATTLE, WA, USA

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DataFlex Reports @ Work

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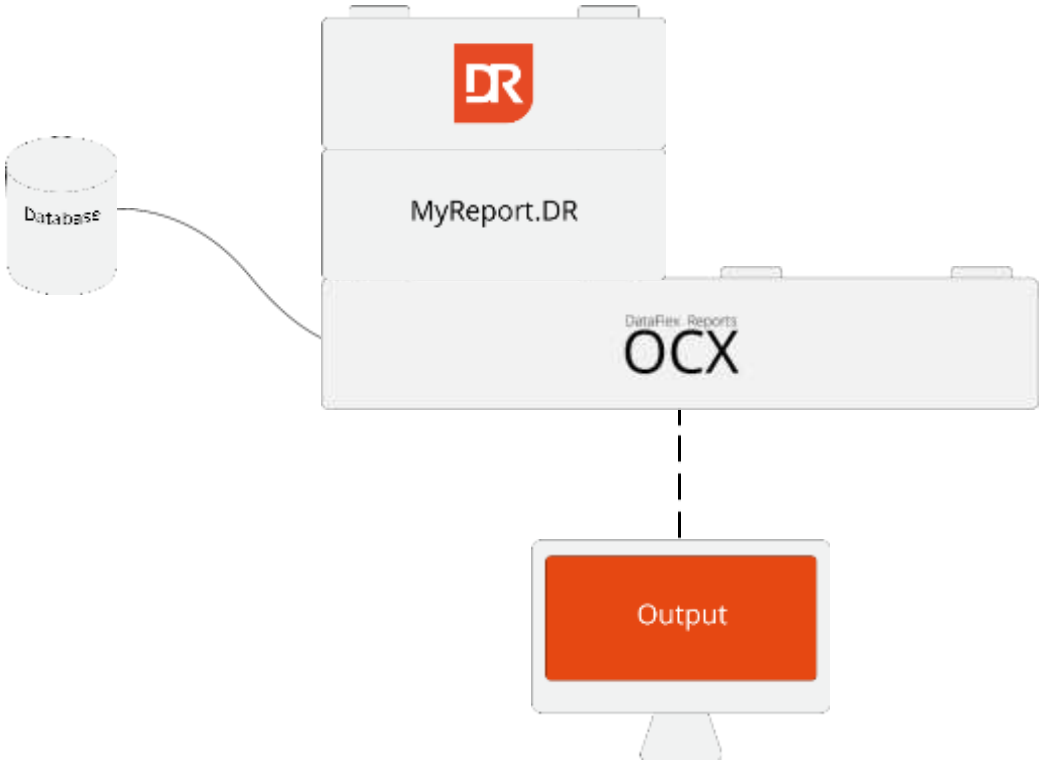
Report integration

- Key feature of DataFlex Reports
- Available thru a library with a wizard and a template to generate a Windows GUI or Web interface

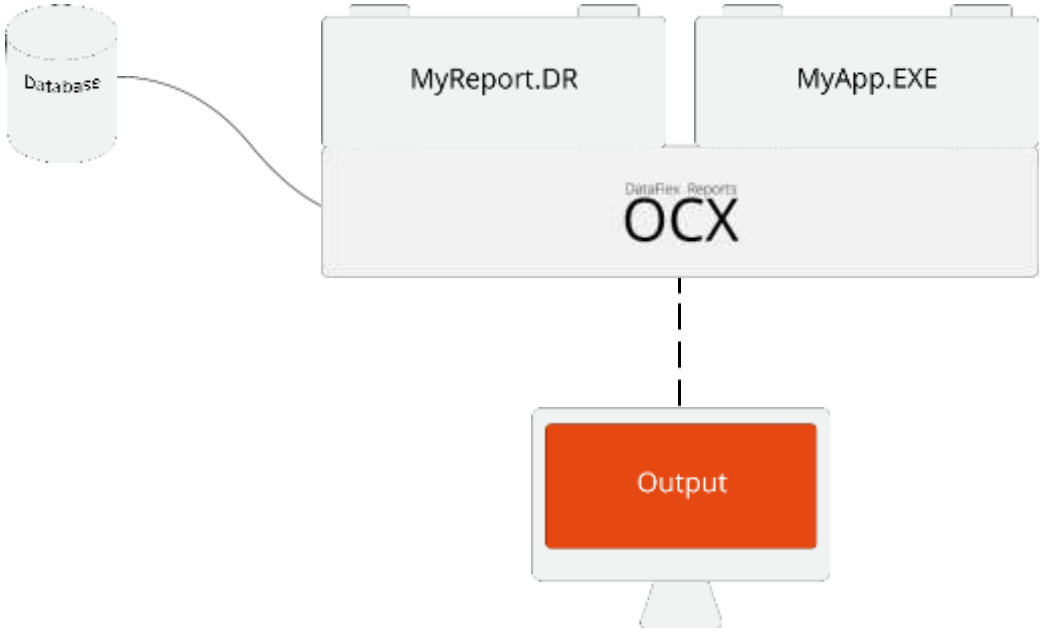
Technical

- How does a report loading and running work?
  - From DataFlex Reports Studio
  - From an application

From the DataFlex Reports Studio



Via integration



Windows

Report integration in Windows GUI

Windows preview options

1. Embedded in report view
2. Using a modal dialog
3. Creating a MDI view (non modal)
   - Users can continue working
4. Creating a tool panel (non modal)

   Can be moved to a secondary screen

◦ `pePreviewStyle` tells `cDRReport` how to preview / display the report

Embedded in report view

- `oDRReport` object shows the preview itself
- Example: Customer entry view showing all orders

MDI view

- `cDRReport` class creates a view object to display the report results
- Users can continue working
- Closing the view with the `cDRReport` object closes the preview view too

- Example: Order entry view

Modal dialog

- Can be used to show extra information
- Must be closed before further application actions can be taken

- Example: Also ordering this product

Tool panel

- `cDRReport` class creates a `ToolPanel` object for displaying the report results
- Can be dragged outside application display area
- Non-modal
- Can be refreshed

- Example: Simple customer list

Runtime Data Source

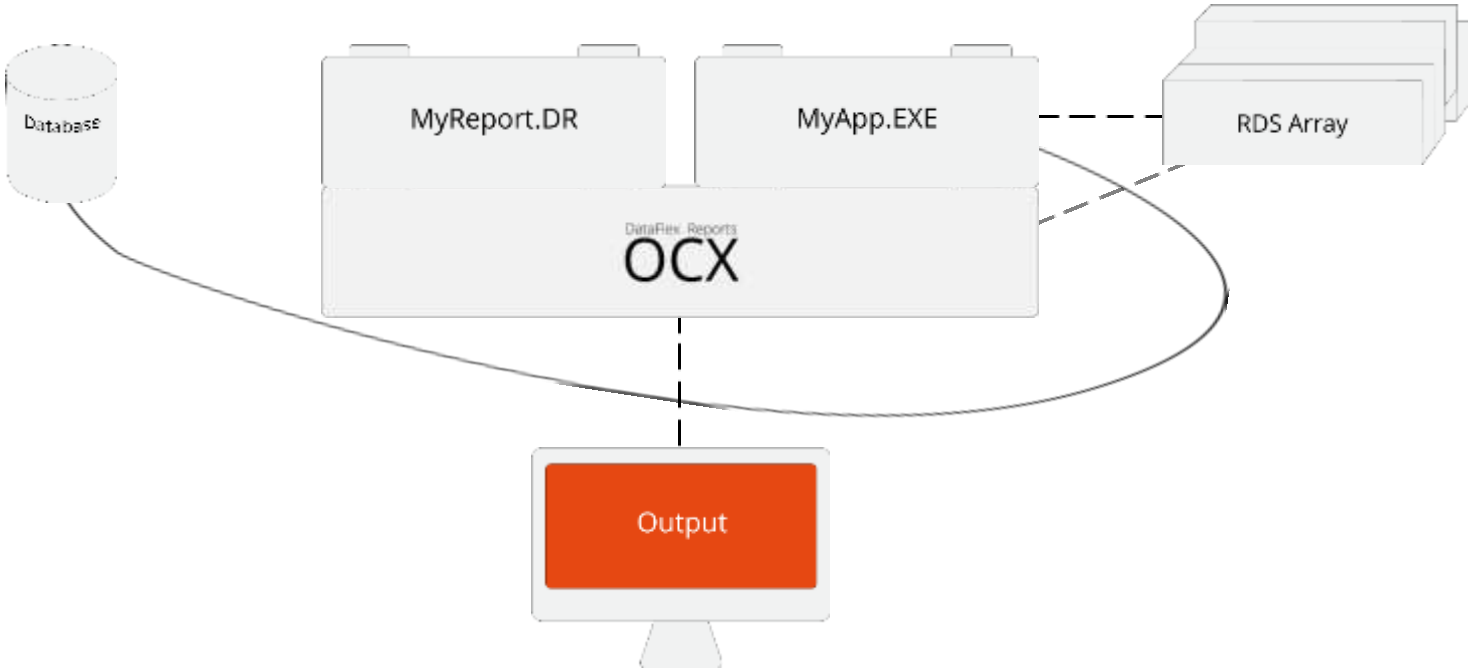
RDS

- Useful for:
  - Reporting on non-database data
    - Web-services
    - File information (e.g. EXIF data)
  - More clever data collection then a report engine can come up with

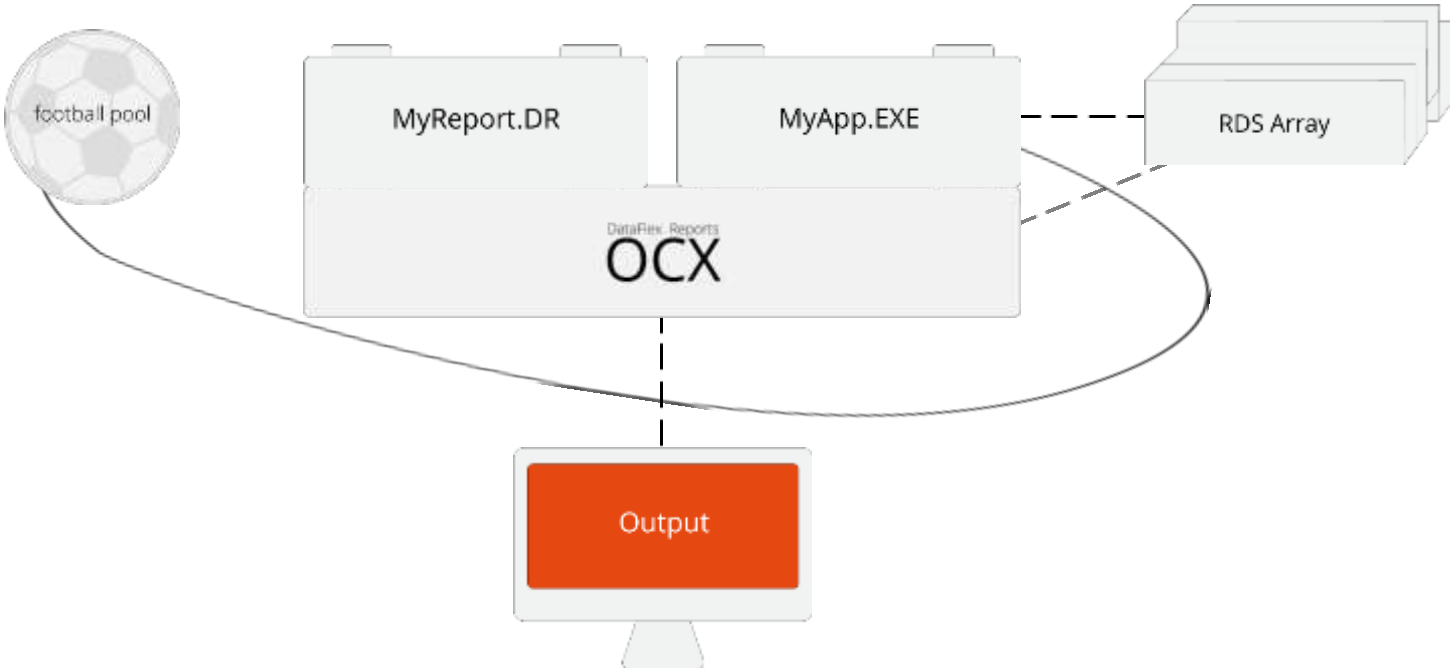
RDS - technical

- Application populates a variant array
- Array is passed to the DataFlex Reports OCX

Via integration using RDS & database



Via integration using a webservice & RDS



RDS Report & Integration

- Create the report
  - In the DataFlex Reports Studio
    - Integrate as a “normal” report
  - Via the integration wizard
    - Creates report & integration code

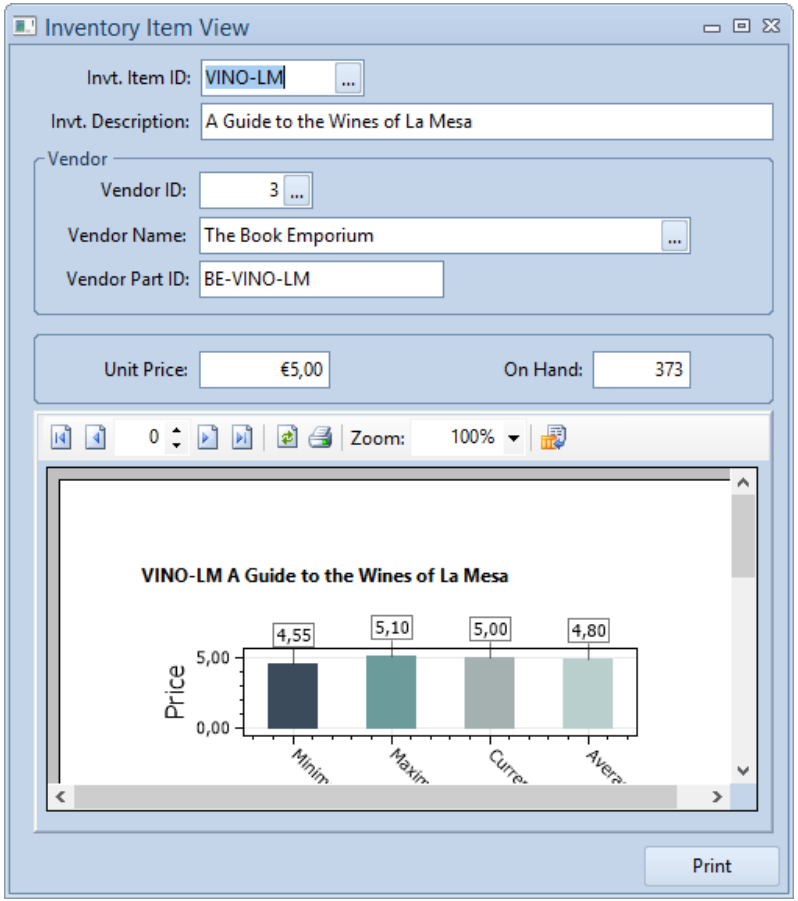
Differences

- Via the DataFlex Report Studio
  - You need to figure out all logic to populate the array
- Via integration
  - Code to read data from a data-dictionary is written in the component for you
    - You need to setup filters etc

RDS Usage example

Find sales price difference

Sales price difference



Sales price difference – finding data

```
Procedure CollectData
    Number nMinPrice nMaxPrice nTotal
    Integer iCount
    Variant[][] vPriceData

    Move 999999 to nMinPrice
    Move -99999 to nMaxPrice

    Clear OrderDtl
    Find Gt OrderDtl by Recnum
    While (Found)
        If (Invt.Item_ID = OrderDtl.Item_ID) Begin
            Move (OrderDtl.Price min nMinPrice) to nMinPrice
            Move (OrderDtl.Price max nMaxPrice) to nMaxPrice
            Increment iCount
            Move (OrderDtl.Price + nTotal) to nTotal
        End
        Find gt OrderDtl by recnum
    Loop
```

Sales price difference – filling the array

```
Move (Trim (Invt.Item_ID)) to vPriceData[0][0]
Move (Trim (Invt.Description)) to vPriceData[0][1]
Move nMinPrice to vPriceData[0][2]
Move "Minimum" to vPriceData[0][3]

Move vPriceData[0][0] to vPriceData[1][0]
Move vPriceData[0][1] to vPriceData[1][1]
Move nMaxPrice to vPriceData[1][2]
Move "Maximum" to vPriceData[1][3]

Move vPriceData[0][0] to vPriceData[2][0]
Move vPriceData[0][1] to vPriceData[2][1]
Move Invt.Unit_Price to vPriceData[2][2]
Move "Current" to vPriceData[2][3]

Move vPriceData[0][0] to vPriceData[3][0]
Move vPriceData[0][1] to vPriceData[3][1]
Move (nTotal / iCount) to vPriceData[3][2]
Move "Average" to vPriceData[3][3]

Send TableData C_USEMAINDRREPORTID 0 vPriceData
```

Active report

Clicking in the preview

Click in the report

- `OnReportPreviewClick` event

```
OnReportPreviewClick C_DRHitTests iPos Integer iSectionId String sObject String sValue

      Case Begin
          Case (iSectionId = 30)
              Case Begin
                  Case (sObject = "Customer.Custom
                      Send DrillDownToCustomer sVa
                      Case Break
                  Case (sObject = "Customer.City")
                      Send CreateNewCustomerReport
                      Case Break
                  Case (sObject = "Customer.State"
                      Send CreateNewCustomerReport
                      Case Break
              Case End
              Case Break
      Case End
```

- Example: Drill-down

Exporting

Export formats

- Portable Display Format (PDF)
  - Can be attached to an e-mail
- Comma Separate Values (CSV)
  - Can be read by other applications
- Image (TIFF, JPEG, GIF, PNG)
  - More static than PDF; can also be attached or embedded
- Excel (XLS / XLSX)
  - Directly understood by Microsoft Excel; Formatted report
- Word
  - RTF 2007 standards; formatted report
- HTML
  - As file(s)
  - As stream for the `cWebDRReportViewer`
    - Supports hyperlinks into WebApp

PDF per e-mail

- Create the report
- Integration code to generate a PDF file
- Write code to attach it to an e-mail
  - Use an SMTP OCX or Outlook

PDF per e-mail

```
Get Create (RefClass (cComMail)) to hoMailer
Send CreateComObject of hoMailer
```

```
Set ComSubject of hoMailer to "Customer Info Report"
Set ComFrom of hoMailer to "DataFlex Sales Department"
Set ComFromAddr of hoMailer to "vincent.oorsprong@dataaccess.eu"
```

```
Set psReportName of hoReport to "Customer Info.dr"
Get OpenReport of hoReport to sReportId
Get DefaultPDFExportOptions of hoReport to PDFExportOptions
Move C_drHigh to PDFExportOptions.iImageQuality
Set pPDFExportOptions of hoReport to PDFExportOptions
Decrement iCustomers
For iCustomerItem from 0 to iCustomers
    Move (sExportFolder - "CustInfo-" - String (iCustomerNumbers[iCustomerItem]) - ".pdf") to sFileName
    Send AddFilter of hoReport C_USEMAINDRREPORTID "{Customer.Customer_Number}" C_drEqual iCustomerNumber
    Send ExportReport of hoReport C_drPDF sFileName
```

```
Set ComBodyFormat of hoMailer to 1 // Text/HTML
Set ComBodyText of hoMailer to sBodyText
Get ComAddRecipient of hoMailer (Trim (Customer.Name)) (Trim (Customer.EMail_Address)) 0 to iRetval
```

```
Send ComClearAttachment of hoMailer
Get ComAddAttachment of hoMailer sFileName to iRetval
If (iRetval = 0) Begin
    Get ComSendMail of hoMailer to iRetval
End
```

Web Applications

How to use with DataFlex Web Applications

Web Integration

- WebApp.Exe (at the server) generates:
  - PDF
  - Images
  - HTML stream
- For the PDF file a download URL needs to be created to let the browser display the PDF in a web page
- For the Images and HTML stream it is advised to use an object of the `cWebDRReportViewer` class

Web Integration

- Code generation via:
  - Integration wizard
  - Template

Web Integration - PDF

```
Object oReport is a cDRReport
    Set psReportName to 'Reports per Module in a Chart.dr'

    Function GenerateReport Returns String
        String sReportId sFile sUrl
        DRPDFExportOptions PDFExportOptions
        Boolean bCanceled

        Get OpenReport to sReportId
        If (sReportId <> "") Begin
            Get DefaultPDFExportOptions to PDFExportOptions
            Set pPDFExportOptions to PDFExportOptions
            Get ReportCacheFileName ".pdf" to sFile
            If (sFile <> "") Begin
                Send ExportReport C_DRPDF sFile
                Get pbCanceled to bCanceled
                If (not (bCanceled)) Begin
                    Get DownloadURL of ghoWebResourceManager sFile to sUrl
                End
            End

            Send CloseReport sReportId
        End

        Function_Return sUrl
    End_Function
End_Object
```

Web Integration using the HTML viewer

- The OCX returns a string array with HTML code in base64 format to support Unicode

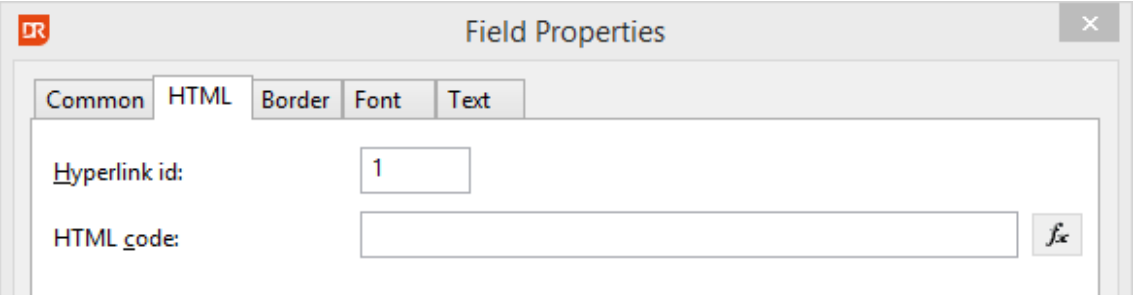
```
Function GenerateReportHTML Returns String[]
    String sReportId
    String[] sData
    Integer iArgSize

    Get OpenReport to sReportId
    If (sReportId <> "") Begin
        Get_Argument_Size to iArgSize
        Get ComReportHTMLPreview sReportId (iArgSize - 10) to sData
        Send CloseReport sReportId
    End

    Function_Return sData
End_Function
```

Report interaction

From the HTML viewer

Web Integration using the HTML viewer

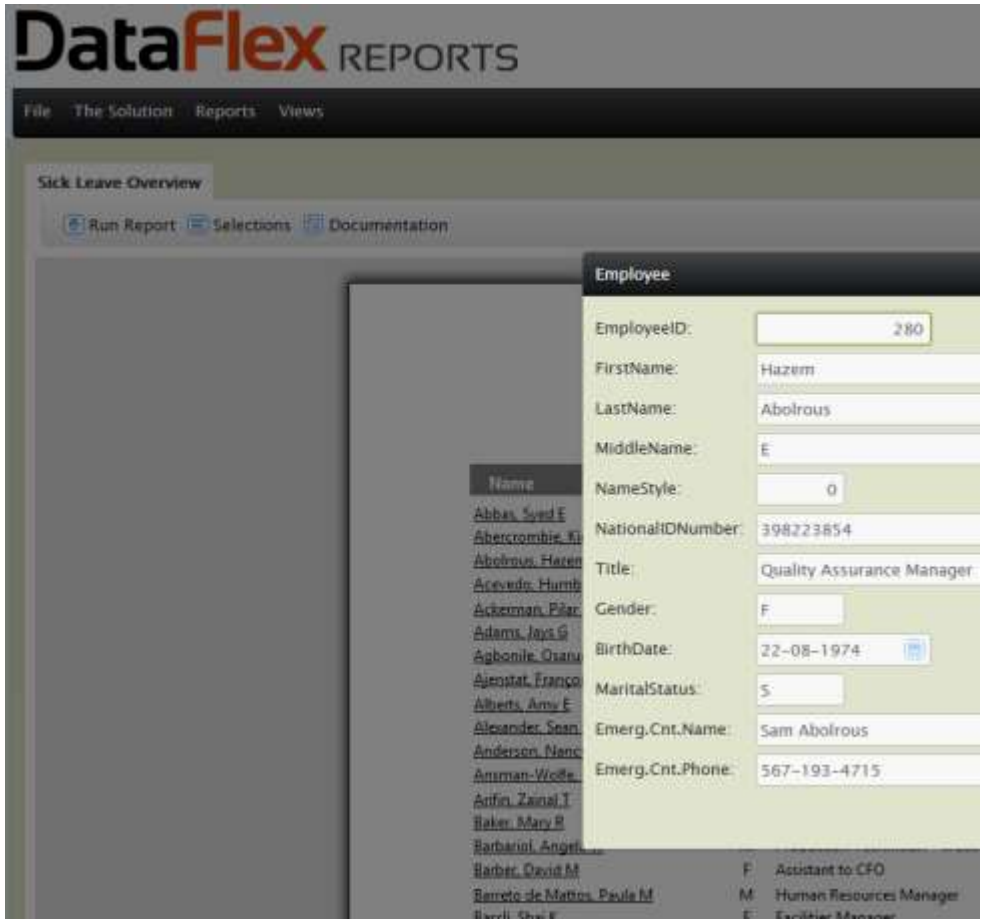
- Fields/Objects need to set the Hyperlink ID



- Response on clicking a hyperlink

```
Object oViewer is a cWebDRReportViewer
    Set phoReport to oReport
    Set pbServerOnClickActionLink to True

    Procedure OnClickActionLink String sData Integer eDataType
        Send ShowEmployee of oSQLEmployeeModalDialog Self sData
    End_Procedure
End_Object
```

Results


DataFlex REPORTS
File
The Solution
Reports
Views
Sick Leave Overview
Run Report
Selections
Documentation
Employee
EmployeeID: 280
FirstName: Hazem
LastName: Abolrous
MiddleName: E
NameStyle: 0
NationalIDNumber: 398223854
Title: Quality Assurance Manager
Gender: F
BirthDate: 22-08-1974
MaritalStatus: S
Emerg.Cnt.Name: Sam Abolrous
Emerg.Cnt.Phone: 567-193-4715
Name
Abbas, Syed E
Barber, David M
Barreto de Mattos, Paula M
F Assistant to CFO
M Human Resources Manager

Thanks for listening

Questions?