

# DataFlex SitRep

Harm Wibier

# 10 year anniversary of Web Framework

- › First released in 2012
- › Designer in 2014
- › Drill-down style in 2015
- › Server web properties in 2017
- › History management in 2019
- › Drag 'n drop in 2022
- › FlexTron in 2023

# Connectivity

- › Managed connections 2017
- › Client & temporary indexes 2019
- › Unicode 2021
- › Improved restructuring 2022
- › SQL Executor 2023

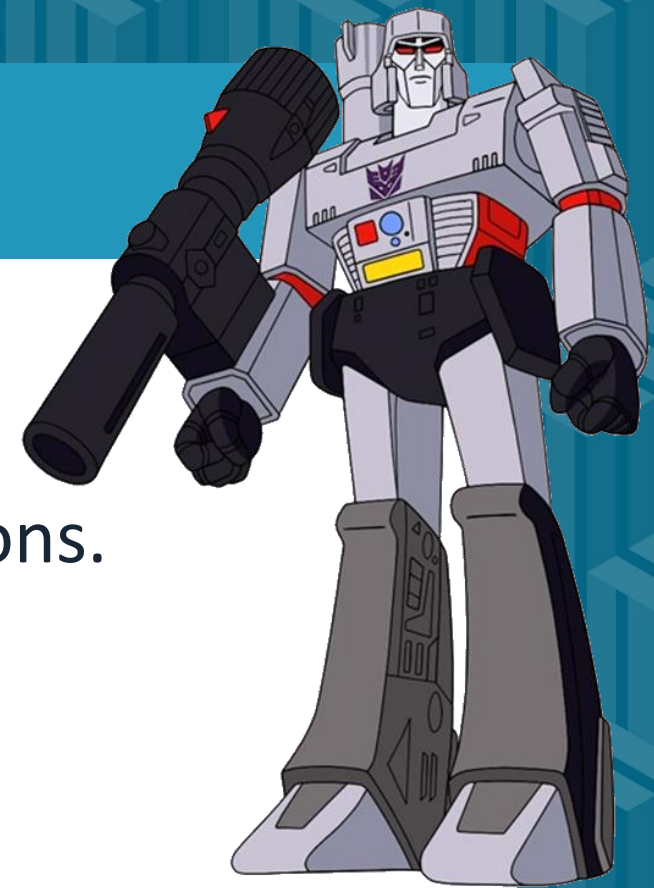
# Runtime / Compiler

- › Unicode in 2021
- › 64-bit in 2021
- › Multiline string in 2022
- › No more `argument_size` in 2022

# DataFlex 2023

# FlexTron

- › Build windows user interfaces with web controls.
- › More modern look and feel.
- › Share code between windows and web applications.
- › Use a single control or build entire applications.
  
- › **cLocalWebControlHost**
  - › Include one or more web controls (no views)
- › **cDbLocalWebControlHost**
  - › Include one or more data aware web controls (no views)
- › **cLocalWebAppHost**
  - › Include web controls including views



# SQL Executor

- › Less lines of code to execute SQL Statements
- › Only a single object (cSQLExecutor) needed
- › Only set connection ID to configure
- › Resultsets in native DataFlex types
  - › Two dimensional arrays
    - › Strings
    - › Variants
  - › Arrays of structs
    - › Custom structs
    - › tWebRow / tDataSourceRow

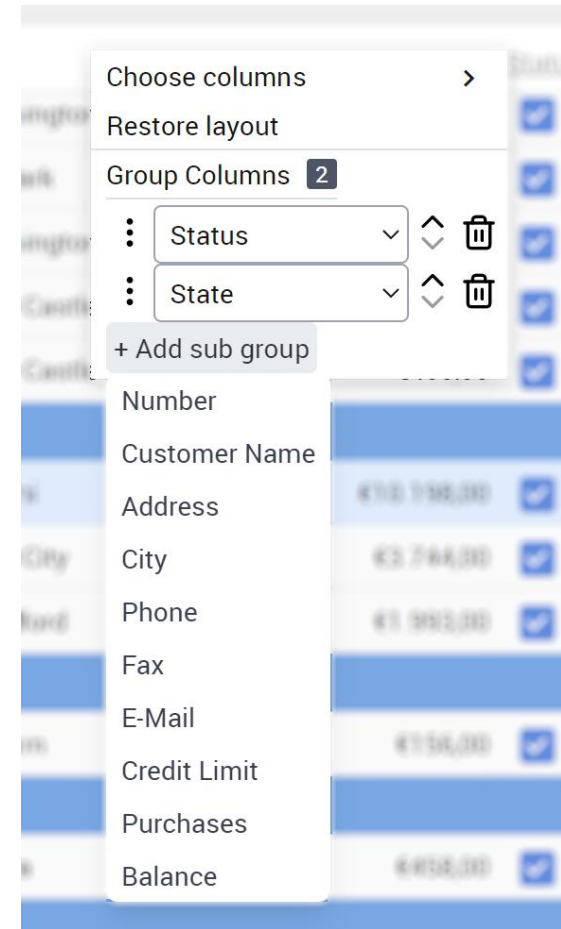
# Studio SQL Support

- › Query test panel
- › Syntax highlighting
  - › @SQL string
  - › .SQL files
    - › Include via new Include\_Text command
- › SQL Code Completion
- › Struct generation



# WebList Grouping

- › Automatic grouping (client-side)
  - › Configurable via context menu
  - › Configuration stored in local storage
  - › API's for customizing
  - › Requires all data to be loaded (gtAllData)
- › Manual grouping
  - › Define groups and group headers in OnManualLoadData

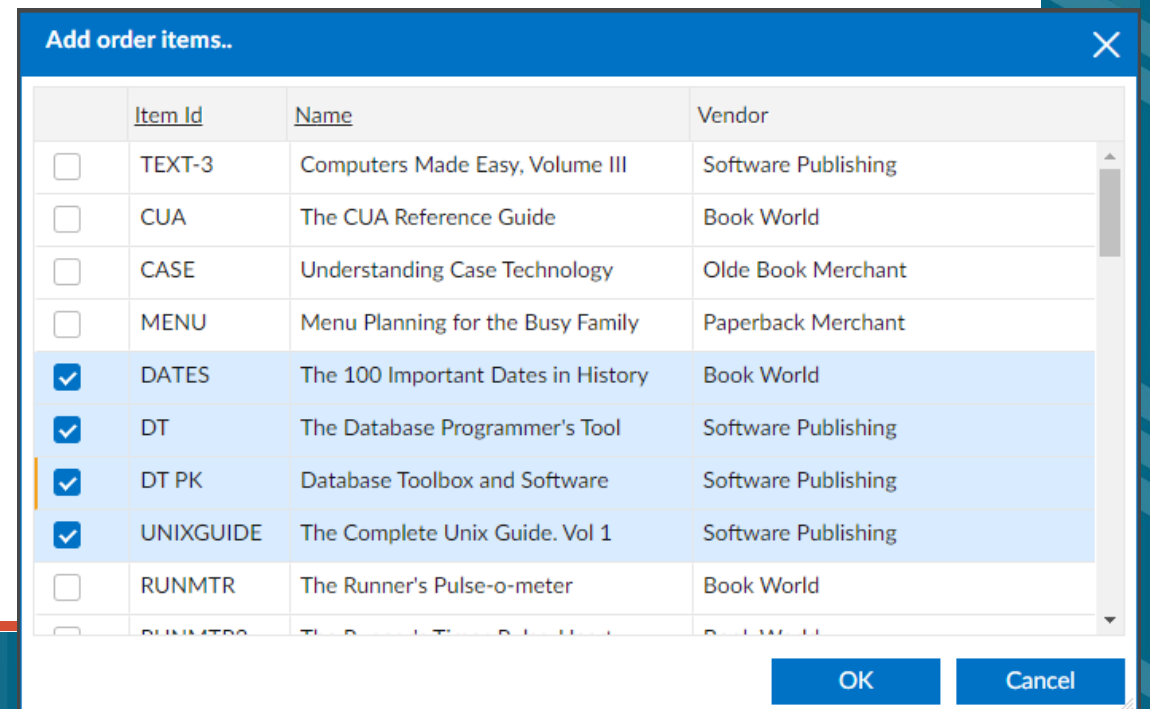


# Web Grid Layout

- › New layout engine for WebApp with more vertical control
- › *More on that in the next presentation*

# WebApp Framework – Multi select

- › Allows multiple items to be selected on the WebList
- › cWebColumnSelectionIndicator
  - › Optionally show checkboxes column
- › Get / set selection as array of rowid's.



# Multiline Comments

```
/*  
Fetch a single record using a parameterized query.
```

Note that this requires SQLPrepare. In case of a query that is executed a lot you could consider using a new instance of the SQL Executor only for this query. Then you can call SQLExecute multiple times after calling SQLPrepare only once.

```
*/  
Object oWebButton5 is a cWebButton  
    Set piColumnSpan to 4  
    Set psCaption to "Parameterized"  
    Set piRowIndex to -1  
    Set piColumnIndex to -1  
  
Procedure OnClick  
    String[] aResult  
  
    Send SQLPrepare of ghoSQLExecutor @SQL"""  
        SELECT * FROM Customer WHERE Customer.Customer_Number = ${CustNum}  
        """  
  
    Send SQLSetParameter of ghoSQLExecutor "CustNum" 12  
    Get SQLExecute of ghoSQLExecutor to aResult  
  
    Send ShowInfoBox (SFormat("Result: %1" StrJoinFromArray(aResult " "))
```



**Aligned multiline string**

# Existing multiline string

```
Class cHtmlTemplate is a cObject
Function GenerateHtml Returns String
Function_Return @"
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>This is a Heading</h1>
    <p>This is a paragraph.</p>
  </body>
</html>"
End_Function
End_Class
```

# Actual string will contain:

```
1  CR LF
2  <!DOCTYPE html> CR LF
3  <html> CR LF
4  <head> CR LF
5  <title>Page Title</title> CR LF
6  </head> CR LF
7  <body> CR LF
8  <h1>This is a Heading</h1> CR LF
9  <p>This is a paragraph.</p> CR LF
10 </body> CR LF
11 </html>
```

# Multiline aligned string

```
Class cHtmlTemplates is a cObject
Function GenerateHtml Returns String
Function_Return ""
    <!DOCTYPE html>
    <html>
        <head>
            <title>Page Title</title>
        </head>
    <body>
        <h1>This is a Heading</h1>
        <p>This is a paragraph.</p>
    </body>
    </html>
    ""
End_Function
End_Class
```



# Actual string will contain:

```
1 <!DOCTYPE html>CRLF
2 <html>CRLF
3   ... <head>CRLF
4   ... <title>Page Title</title>CRLF
5   ... </head>CRLF
6 <body>CRLF
7   ... <h1>This is a Heading</h1>CRLF
8   ... <p>This is a paragraph.</p>CRLF
9 </body>CRLF
10 </html>
```

# Improved multiline string

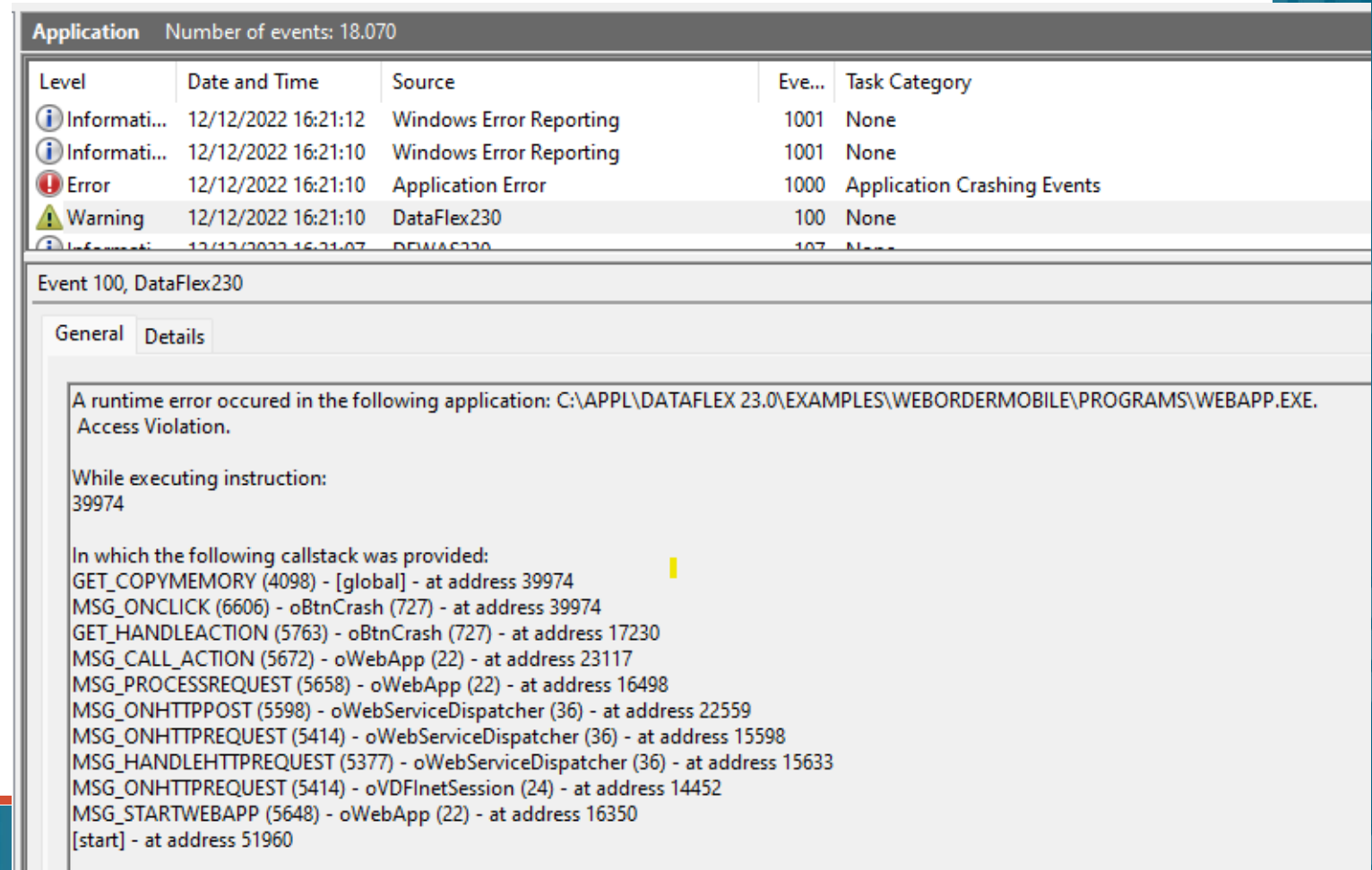
- › Open and close using `"""`
- › Removes left whitespace based on the closing quotes
- › Removes open and close line feeds
- › Allows usage of single and double quotes inside string
- › Also available as `@SQL"""` for syntax highlighting
- › *Closing and opening `"""` need to be on its own line*

The background of the slide is a repeating geometric pattern of blue lines that create a 3D effect of interlocking cubes or rectangular blocks. The pattern is centered and covers the entire area.

# Other improvements

# WebApp Server – Crash details

- › More details when debugging crashes of web applications.



The screenshot displays the Windows Event Viewer interface. At the top, it shows 'Application' with 'Number of events: 18.070'. Below this is a table of events:

Level	Date and Time	Source	Eve...	Task Category
Information	12/12/2022 16:21:12	Windows Error Reporting	1001	None
Information	12/12/2022 16:21:10	Windows Error Reporting	1001	None
Error	12/12/2022 16:21:10	Application Error	1000	Application Crashing Events
Warning	12/12/2022 16:21:10	DataFlex230	100	None
Information	12/12/2022 16:21:07	DataFlex230	107	None

The selected event is 'Event 100, DataFlex230'. The 'General' tab is active, showing the following details:

A runtime error occurred in the following application: C:\APPL\DATAFLEX 23.0\EXAMPLES\WEBORDERMOBILE\PROGRAMS\WEBAPP.EXE. Access Violation.

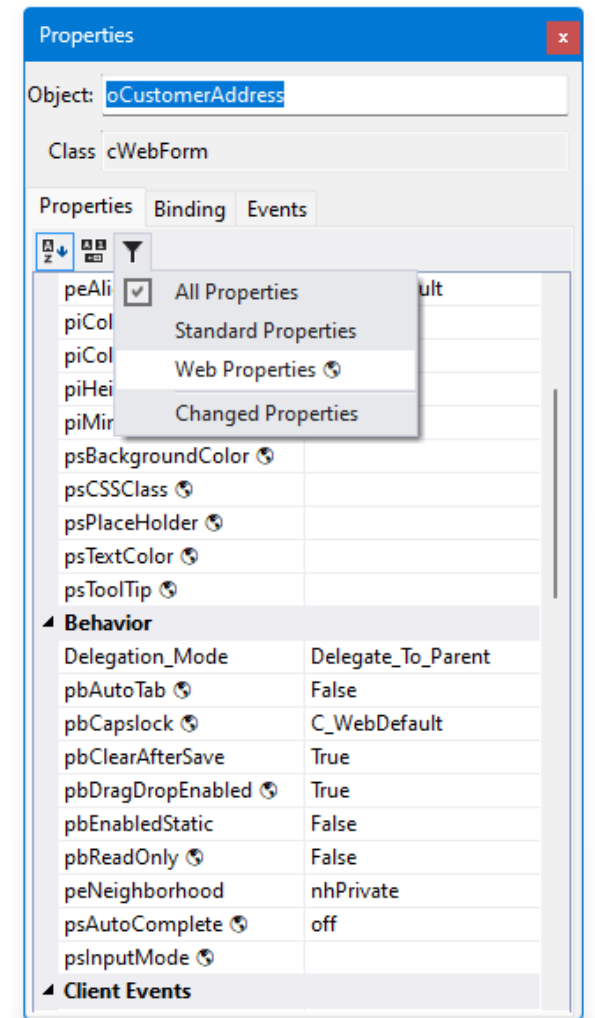
While executing instruction:  
39974

In which the following callstack was provided:

- GET\_COPYMEMORY (4098) - [global] - at address 39974
- MSG\_ONCLICK (6606) - oBtnCrash (727) - at address 39974
- GET\_HANDLEACTION (5763) - oBtnCrash (727) - at address 17230
- MSG\_CALL\_ACTION (5672) - oWebApp (22) - at address 23117
- MSG\_PROCESSREQUEST (5658) - oWebApp (22) - at address 16498
- MSG\_ONHTTPPOST (5598) - oWebServiceDispatcher (36) - at address 22559
- MSG\_ONHTTPREQUEST (5414) - oWebServiceDispatcher (36) - at address 15598
- MSG\_HANDLEHTTPREQUEST (5377) - oWebServiceDispatcher (36) - at address 15633
- MSG\_ONHTTPREQUEST (5414) - oVDFInetSession (24) - at address 14452
- MSG\_STARTWEBAPP (5648) - oWebApp (22) - at address 16350
- [start] - at address 51960

# Studio - Property Panel Improvements

- › Filter on web / windows / changed properties
- › Categorized web properties
- › Marker indicating web properties



# Other improvements

## WebApp Framework

- › Faster startup times due to improved web property logic.
- › New WebColumnTags class.
- › Customizable WebList context menu's.

## WebApp Server

- › WebApp Administrator DPI Aware improvements.
- › Configure SPLF application servers by their host name.
- › New OnReleaseProcess event.

## Windows

- › New WebResourceRequested API for WebView2.

## Studio

- › Copy search results Unicode fix.
- › Automatic toggle dark theme based on system settings.

# Status

- › Close to going in Beta
  - › Couple of weeks..

**Thank you!**

Are there any questions?