

DataFlex Extensions

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Extensions what?

- › Over the years Data Access staff members and several external developers created tools and libraries to make your life easier

Tools

- › DataFlex Studio Launcher
- › Printer driver analyzer
- › Batchcompiler
- › Structure viewer
- › PC Settings
- › Filelist import & Export
- › Space killer
- › Webapp Checker
- › DataFlex DataPump
- › DD Class updater
- › ASCII table
- › Class Explorer
- › Bugger
- › Custodian
- › Database Update Framework
- › Diagnostics

DataFlex Studio Launcher

- › By default, clicking the .SWS file loads the latest DataFlex Studio installation
- › Perfect when you only work with one version
- › Studio launcher is a DataFlex application that quickly examines the .SWS file content and attempts to load the DataFlex Studio that should be used for that version of the workspace

Printer driver analyzer

- › When you want to print to printer the driver determines what is possible and how to use
 - › Number of copies; always within boundaries (maybe 1)
 - › Printer tray; tray numbers differ per manufacturer
 - › Paper size; not all printers support the same sizes
 - › Margins; a too small margin might be rejected
- › This tool enumerates the printer drivers and return all the device capabilities to you

BatchCompiler

- › Useful when you have multiple applications in a workspace that need recompilation because the base code changed
- › Note: At Data Access we more and more make use of a buildserver which takes care of the compile and installer build process

StructureViewer

- › Visualizes the table relationships in your workspace
- › Can use the relationships defined in .DAT or .INT and DD(O) defined relationships

PC Settings

- › Lists the value of a locale settings
- › Used codepages
 - › Less important with v20.x
- › System Info
 - › Bios
 - › Processor
 - › Adapters
 - › Busses

Identifier	User	System	Diff
Decimal Sep.	.	.	<input type="checkbox"/>
Monetary Decimal Sep.	.	.	<input type="checkbox"/>
Date Sep.	/	/	<input type="checkbox"/>
Thousands Sep.	,	,	<input type="checkbox"/>
Monetary Thousands Sep.	,	,	<input type="checkbox"/>
Monetary Grouping	3;0	3;0	<input type="checkbox"/>
List Sep.	,	,	<input type="checkbox"/>
Digit Grouping	3;0	3;0	<input type="checkbox"/>
Local Monetary Digits	2	2	<input type="checkbox"/>
Intl. Monetary Digits	2	2	<input type="checkbox"/>
Currency Digits	2	2	<input type="checkbox"/>
Native Digits	0123456789	0123456789	<input type="checkbox"/>
Fractional Digits	2	2	<input type="checkbox"/>
Negative Number Mode	1	1	<input type="checkbox"/>
Leading Zeroes for Decimal	1	1	<input type="checkbox"/>
Local Monetary Symbol	\$	\$	<input type="checkbox"/>
Intl. Monetary Symbol	USD	USD	<input type="checkbox"/>
Pos. Monetary Symbol	Prefix, No Sep. e.g. \$1.1	Prefix, No Sep. e.g. \$1.1	<input type="checkbox"/>
Neg. Monetary Symbol	Left parenthesis, monetary symb.	Left parenthesis, monetary symb.	<input type="checkbox"/>

Filelist Import & Export

- › Filelist content exported to XML makes (GIT) compares with an older, newer, different filelist possible
- › Editing via XML may be easier than via the tools

Space killer

- › Written in 2014 to cleanup my code where I always had a lot of trailing spaces
- › Nowadays I usually use a keyboard macro in the DataFlex Studio to achieve the same

WebApp Checker

- › Installed by the installation process
- › Reports potential issues that may cause web applications to fail

DataFlex DataPump

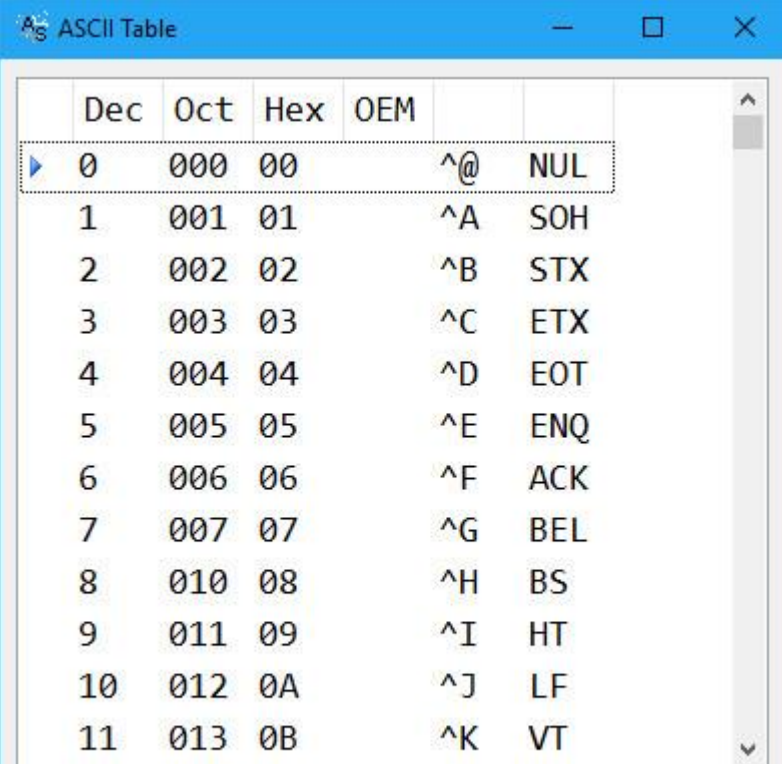
- › Exports all your DataFlex embedded database data to an MSSQL database
- › While it can do it once the power lies in converting each NN hours
- › After conversion people in your organization can use tools like Dynamic AI or other SQL minded tools on your otherwise closed data set
- › Free to download and evaluate. Run requires a license

DD Class Updater

- › Written to help you refactoring the names of data dictionary objects and classes
- › DataFlex 16 came with the option to create more than 1 DD class per table which created different names for old and new DDs
- › Can possibly also done via the Refactoring tool

ASCII Table

- › Shows the content of the well known ASCII table
- › With the introduction of UTF in DataFlex v20.x this and likewise tables are less needed



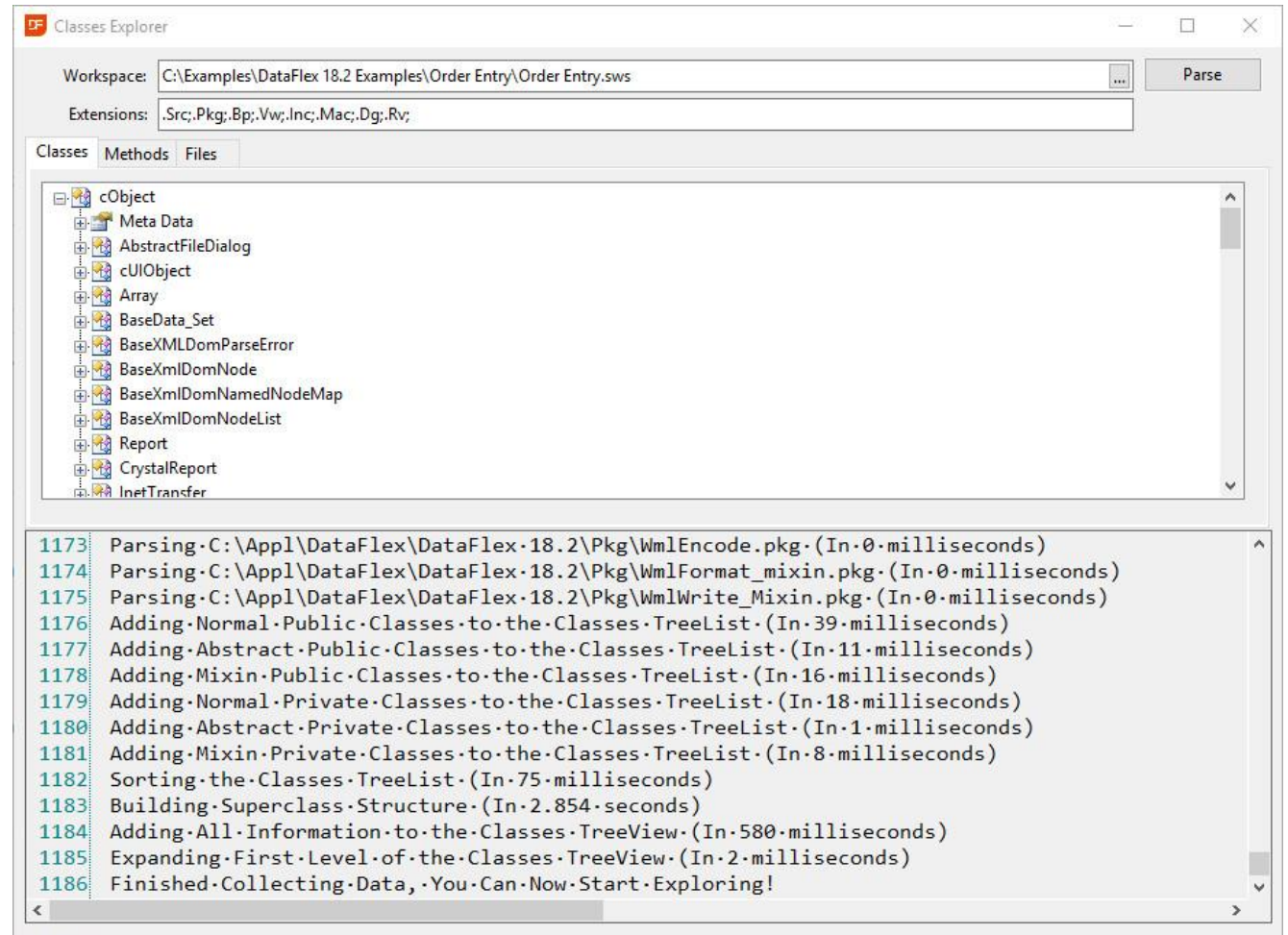
The screenshot shows a window titled "ASCII Table" with a table of ASCII characters. The table has columns for Dec, Oct, Hex, OEM, and a character name. The first row is highlighted with a dotted border.

	Dec	Oct	Hex	OEM	
▶	0	000	00	^@	NUL
	1	001	01	^A	SOH
	2	002	02	^B	STX
	3	003	03	^C	ETX
	4	004	04	^D	EOT
	5	005	05	^E	ENQ
	6	006	06	^F	ACK
	7	007	07	^G	BEL
	8	010	08	^H	BS
	9	011	09	^I	HT
	10	012	0A	^J	LF
	11	013	0B	^K	VT

v19.0.0.0 Copy Close

Classes Explorer

- › Enumerates all the source for a workspace and represents the classes in a treeview structure



Bugger

- › A DataFlex 3.2 character mode debugger written by Sture Andersen
 - › Available for Windows, DOS, Unix, Linux

Custodian

- › Is a Web Application that enables updating other web applications running on the same server
- › Use the video at the Data Access Learning Center to explore the capabilities
 - › <https://learning.dataaccess.com/courses/custodian-19.1/how-to-use/>

Database Update Framework

- › Designed to make it easy to update databases at customer site when installing a new version of the software
- › Can be used on databases developed by big companies such as Microsoft (SQL Server), IBM (DB2), Oracle, PostgreSQL and Data Access (DataFlex embedded database)
- › Documentation:
<https://www.rdctools.com/HTMLHelp/Developer5.htm>

Diagnostics

- › Tool to collect information from your environment to help support employees in finding an answer to a problem discovered
- › Collected data is in XML format and can be viewed before sending to support

The screenshot displays the DataFlex Diagnostics web interface. The main content area shows a list of diagnostic categories with their respective status icons: System Information (1), Internet Information Services (0), IIS Features (green), Application Pools (yellow), Websites (yellow), and Applications (yellow). Below this, there are sections for DataFlex Environment (13) and DataFlex Web Applications (322). A modal dialog box is open in the foreground, titled 'Enable 32-bit application'. The dialog contains the following text: 'The current value is: Unable to diagnose due to insufficient rights. Determines if 32bit is enabled for the applicationpool of the application / website. If not, this will be red.' A 'Close' button is located at the bottom right of the dialog. The background interface is dimmed. In the top right corner, the version '1.0.0.1' and user 'marcia - [Limited Access]' are visible. At the bottom of the interface, there is a 'Mail Report' link and a legend for error indicators: a box with 'x' for 'Number of errors found', a green square for 'All correct', a yellow square for 'Attention! This may be wrong or missing', and a red square for 'Something is wrong or missing'.

Libraries

- › For Web Only
- › For Windows Only
- › For both

Libraries for Web only

- › Redaction
- › Dynamic Objects
- › dHTMLX Scheduler
- › Froala Web Editor
- › PDFViewer
- › WebImageZoom
- › Quill Editor
- › QR & Barcode Scanner
- › XSS Sanitizer

Libraries for Windows only

- › cFontDialog
- › Calculator
- › RTF Toolbar
- › TrayIcon
- › VPE
- › Drag and Drop Treeview

Libraries both

- › Graphics
- › Conversions
- › cForAll
- › Security

Redaction

- › Security is very important in a web environment
- › Redaction library brings the security enhancement developed in DataFlex v20 to older versions

Dynamic Objects

- › Process pooling makes the use a dynamic objects without this library almost impossible
- › Is now part of DataFlex v20.x and unless you develop v19.1 applications no longer needed
 - › Remove when migrating to v20

dHTMLX Scheduler

- › Web Scheduler component based on a component from DHTMLX
- › For a demo watch the video at <https://youtu.be/6oNYgjb22g0>
- › For a course go to the Data Access learning center <https://learning.dataaccess.com/courses/web-scheduler-library/>

Web Editors

- › cWebEdit
- › Froala Web Editor
- › Quill Editor

PDF Viewer

- › External component to view PDF documents in a webpage
- › Solves the problem that a browser might decide to download the PDF document instead of displaying

WebImageZoom

- › Allows viewing of images, much like a regular cWebImage - but also allows the user to zoom in or out using the mouse wheel, or pinch gestures on a mobile device.

QR and Barcode Scanner

- › Standalone component that provides a way of scanning a vast number of barcode formats. It is based on Google's ZXing (ZebraCrossing) library and wrapped for easy use in DataFlex WebApps

XSS Sanitizer

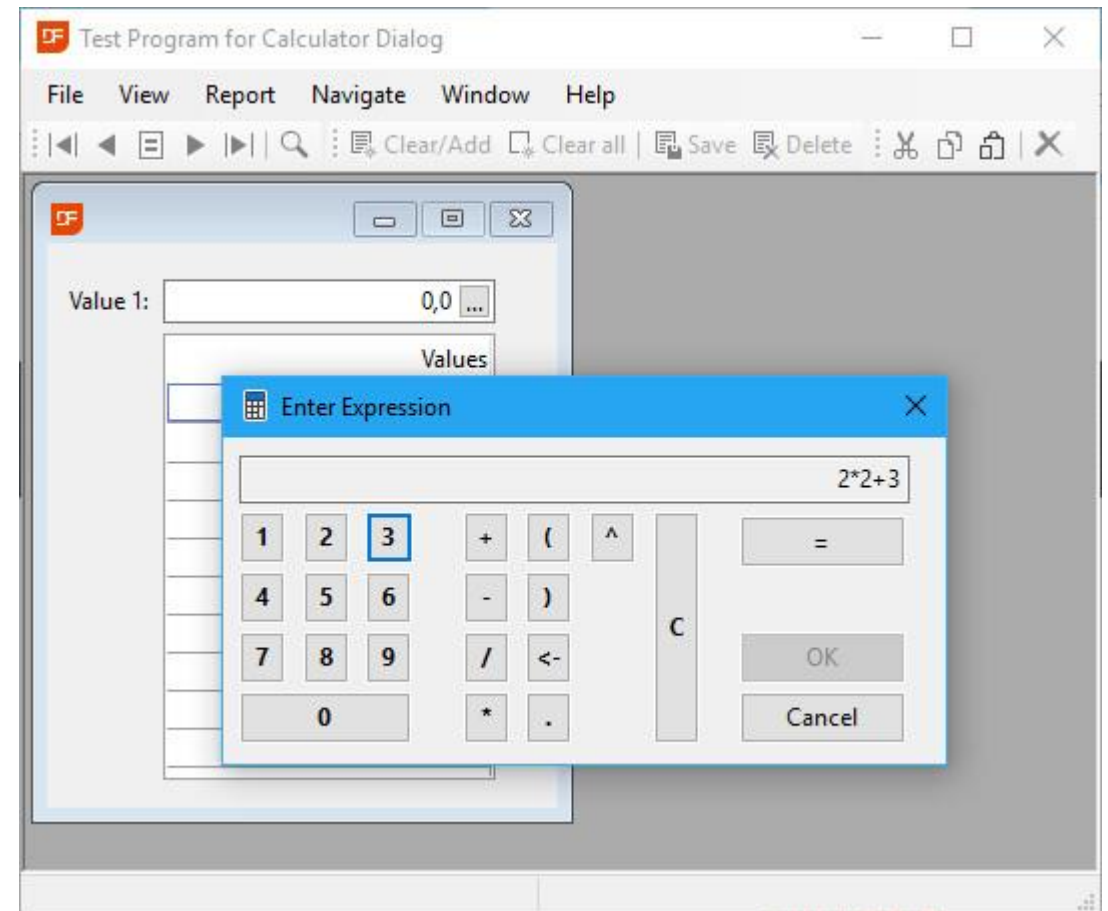
- › Many Web Applications let users to enter freeform text
- › Freeform text entry can be misused to enter malicious HTML and JavaScript
- › This user input shown somewhere else opens the door for Cross-Site Scripting (XSS)
- › To combat this, user input needs to be checked and sanitized
- › Covers most cases
- › Highly configurable what to allow or block

cFontDialog

- › Replacement of Font_Dlg in older version
- › No longer needed in v20.x as the standard version contains the changes in cFontDialog

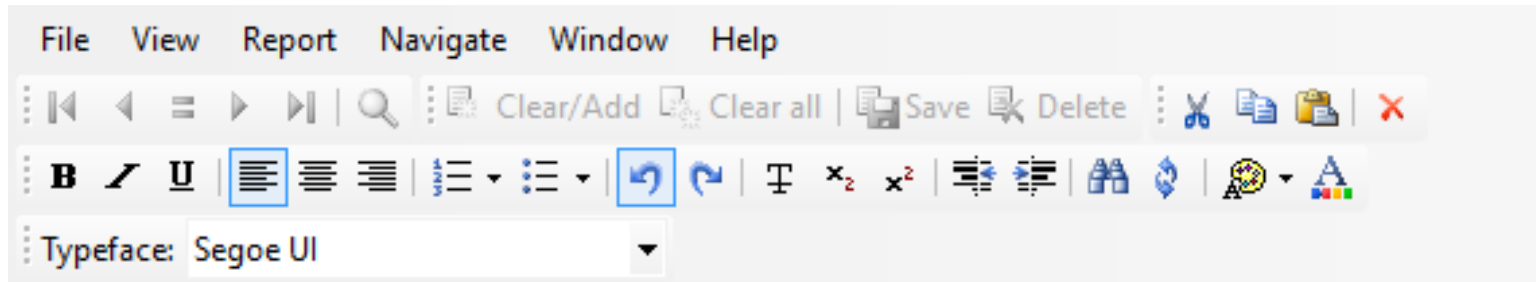
Calculator

- › Dialog with a calculation options



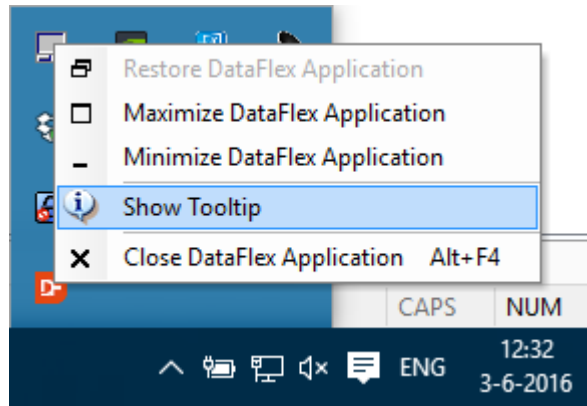
RTF Toolbar

- › CodeJock command bar with all formatting options for a cRichEdit / cDbRichEdit control



Tray Icon

- › Use a CodeJock control to minimize the application to the Windows tray instead of the taskbar



- › You need to purchase CodeJock Suite Controls

VPE

- › Uses Ideal Software's Virtual Print Engine
- › Library is not updated after DataFlex v15
- › DataFlex Reports is our recommended print engine

Graphics

- › Classes to display, convert images not in the standard Windows image formats (BMP, ICO)
 - › TIFF, JPEG, GIF, PNG etc
- › Drawing to canvas functionality
- › EXIF image information functionality
- › Originally for Windows GUI but there is enough code that can be used in Web Applications

Conversions

- › Classes with all kind of conversion functions to convert from a value to another value in the same category.
 - › E.g. Meters to Yards
 - › cAbsoluteViscosityHandler
 - › cAngleHandler
 - › cBitHandler
 - › cEnergyHandler
 - › cHexHandler
 - › cKinematicViscosityHandler
 - › cLengthHandler
 - › cOctHandler
 - › cPowerHandler
 - › cPressureHandler
 - › cTemperatureHandler
 - › cTimeHandler
 - › cVelocityHandler
 - › cVolumeHandler
 - › cWeightHandler

cForAll

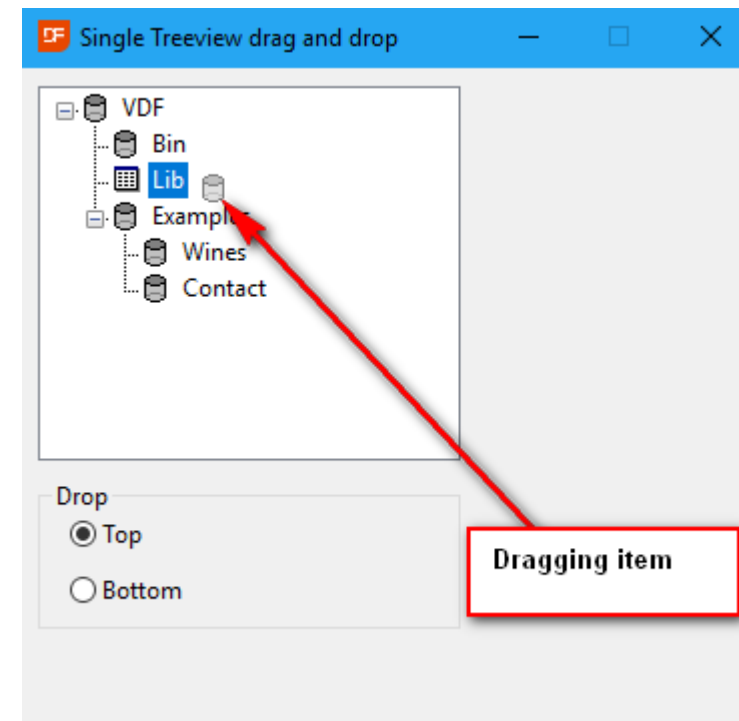
- › Replaces the For_All command
 - › For_All works only on the global buffers
 - › Bypassing the business rules defined in data-dictionaries
- › Can be used with or without DDOs

Security

- › Library developed around LibSodium
- › While very extended it is considered too complex for average applications
- › We developed a replacement called SecMod, a demo of the use can be found in the Plato example

Drag and Drop Treeview

- › Allows dragging of treeview items within the same treeview control or to a different control



Examples

- › Plato
- › Use the web browser
- › PassPhrase
- › Authenticator
- › SHFileOperations

Plato

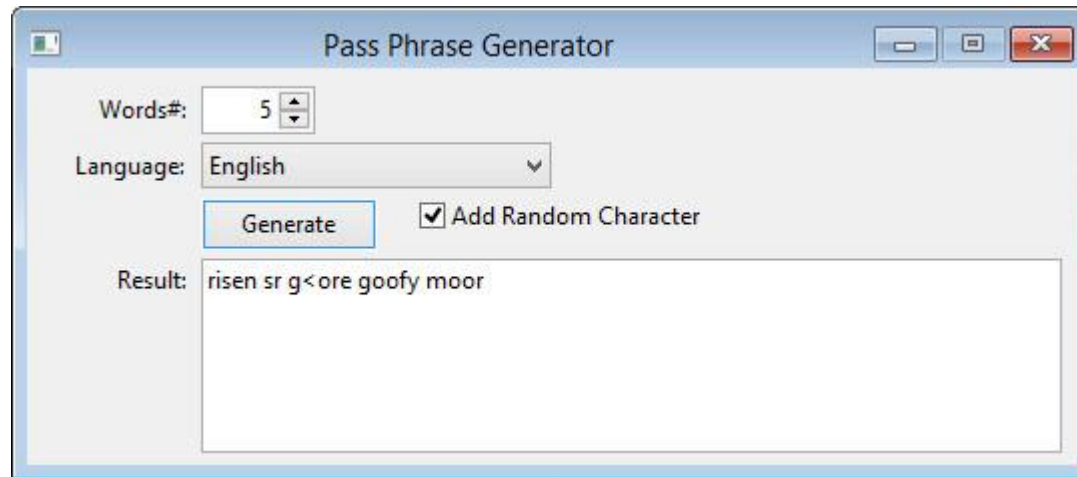
- › Web order system based on a fictitious plating service company with process flow
- › Uses MSSQL as the database
- › Shows a number of (new) techniques such as
 - › Use of DataFlex Reports
 - › cWebTagForms
 - › SQL Executor
 - › SecMod (a security library replacement)
 - › Sending e-mails

Use the web browser

- › Based on the classic cWebComBrowser
- › Outdated per DataFlex 20.1

PassPhrase

- › Passphrases differ from passwords only in length.
 - › Passwords are usually short – six to ten characters
 - › Passphrases are usually much longer -- typically 20 to 40 characters, sometimes more
 - › Their greater length makes passphrases more secure.

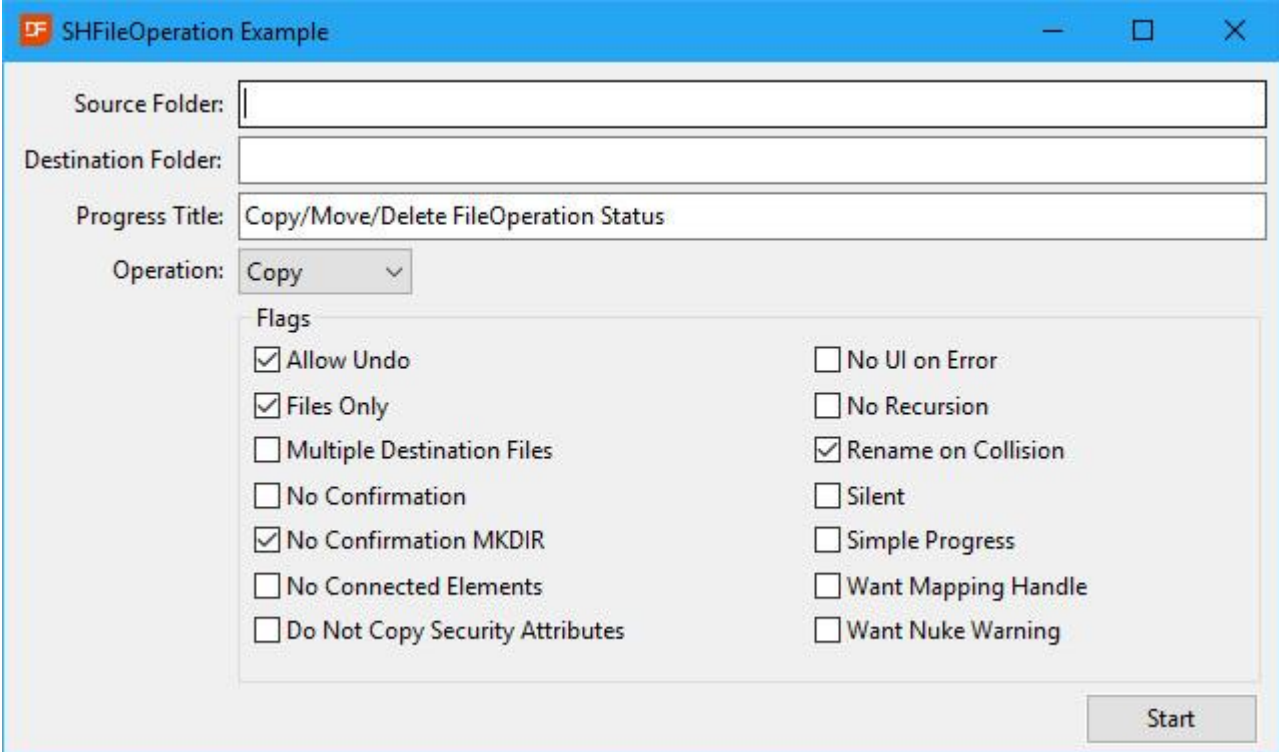


Authenticator

- › More than one way to authenticate a user is becoming important.
 - › Companies like Google and Microsoft use a technology for this that is known as TOTP (Time-base One Time Password)
- › Library and sample app use the TOTP technique
- › Uses a secret string together with the current time and an encryption method to generate a 6 to 8 digits long number (token) that is used as an extra password for login

SHFileOperations

- › Example shows how to use the SHFileOperation Windows API function



The screenshot shows a Windows dialog box titled "SHFileOperation Example". It contains the following fields and options:

- Source Folder: [Empty text box]
- Destination Folder: [Empty text box]
- Progress Title: Copy/Move/Delete FileOperation Status
- Operation: Copy (dropdown menu)
- Flags section with two columns of checkboxes:
 - Checked: Allow Undo, Files Only, No Confirmation MKDIR
 - Unchecked: Multiple Destination Files, No Confirmation, No Connected Elements, Do Not Copy Security Attributes, No UI on Error, No Recursion, Silent, Simple Progress, Want Mapping Handle, Want Nuke Warning
- Start button



Thank you!
Are there any questions?