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Program: pdf_inc.i

Written By: Gordon Campbell - PRO-SYS Consultants Ltd.

Written On: June 2002

Description: Contains function and variable definitions for
generating a PDF document from within Progress

Note: This can only be included once per program

----- Revision History -----

Date:	Author	Change Description
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07/12/02	G Campbell	Initial Release
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09/05/02	G Campbell	Fixed issue regarding the first call to pdf_set_font - wasn't actually setting the font, had to be called twice before accepting changes Fixed annoying 'rebuild' message - caused by inappropriate offset values when producing XREF table
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09/10/02	G Campbell	Due to previous XREF changes, the pdf_load_image and pdf_load_images functions had to change also
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10/14/02	G Campbell	Changed the element setting functions to procedures - older versions of Progress were reaching the 64K Segment issue.
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10/18/02	G Campbell	Added routine called pdf_replace_text and call from appropriate text procedures. Used to handle special characters in text strings.
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10/22/02	G Campbell	As per Steven L. Jellin (sjellin@elcb.co.za)
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Added two procedure pdf_reset_all and
pdf_reset_stream.

11/04/02	G Campbell	As per Julian Lyndon-Smith (jmls@tessera.co.uk)
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Modified the Font/Image import procedures to use
the OS-APPEND command.

02/28/03	G Campbell	As per SourceForge Bug 694886 - Adam Davies (adam.davies@travellink.com.au)
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The basel4 Font "Helvetica" is missing the width of
a character. This means all lookups into the array
are out by one (after about "D" in the ASCII chars).
This causes calls to pdf_text_width to be quite a
long way out.

02/28/03	G Campbell	As per SourceForge Bug 694888 - Adam Davies (adam.davies@travellink.com.au)
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Function pdf_text_width in pdf_inc.i is supposed to
return the width of the passed in text parameter
based on the current font.

It does this by summing each characters width as
defined in an Adobe AFM file for the font (or
hard-coded for basel4 fonts), then dividing by 1000
and multiplying by the point size.

However, rounding is done via INTEGER conversion
after the first division instead of after the
multiplication resulting in poor accuracy.

02/28/03	G Campbell	As per SourceForge Bug 695454 - Steve Southwell
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(ses@bravepointdallas.com)

In pdf_set_Orientation, the pdf stream name was hard-coded to "Spdf.

02/28/03 G Campbell

As per Steve Southwell
(ses@bravepointdallas.com)

Added procedure pdf_text_center. This centers text on a certain X,Y point

03/02/03 G Campbell

As per Adam Davies
(ses@bravepointdallas.com)

Added function pdf_get_NumFittingChars. This function returns the index of the last character that will fit into the specified width. It does this by summing each characters AFM width (as specified in the tt_pdf_font.font_width array) and comparing with the required width (converted into these same units).

03/12/03 G Campbell

Added procedure pdf_link to allow for creation of document links.

03/19/03 G Campbell

As per Steve Southwell
(ses@bravepointdallas.com)

Added procedure pdf_wrap_text to wrap text within a specific column range. Returns a parameter that tells you the last Y position used.

Added function pdf_get_wrap_length.
You can use the function to see how long a piece of text WOULD be if you were to wrap it.

03/29/03 G Campbell

As per Kim Allbritain
(kimatrr@tampabay.rr.com)

pdf_text_width was always returning 0 (zero) when a loaded (non Base) font was being used. To fix this issue I now run the pdf_ParseAFMFile routine as soon as pdf_load_font is called. This also required additional field requirements to TT_pdf_font.

06/23/03 G Campbell

Added ability to define a Rotation Angle. Angles available are 0,90,180 and 270. Also updated code to ensure that TextX and TextY were being set correctly whenever pdf_Text was being created (based on current angle). Reworked placement of routines.

07/02/03 G Campbell

Updated pdf_new_page to include calls to reset Angle and Text X/Y coordinates.

08/18/03 G Campbell

Added pdf_set_BottomMargin and pdf_BottomMargin. This allows us to define a bottom most point when creating a document. If any text goes below the Bottom Margin value (eg: 50) a new page is automatically created. This is useful for converting text documents that don't have any page markers (eg: ASCII chr(12)).

Also, modified pdf_set_TextY to use the BottomMargin to determine if any text elements have (or are) going below the Bottom Margin value. If so, create a new page.

08/18/03 G Campbell

As per Mike Frampton
(MIkeF@sequoiains.com)

Added pdf_watermark procedure. Allows you to create a text watermark (eg: Invoice) that appears on the

first layer of the PDF --- below any rectangles, images etc. Use with caution as you may not get the complete watermark if you overlay with images.

Sample Call:

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RUN pdf_watermark ("Spdf",  
                  "SAMPLE REPORT",  
                  "Courier-Bold",  
                  34,  
                  .5,.5,.14,  
                  300,500).
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08/18/03	G Campbell	As per Herbert Bayer (I think) Herbert Bayer [Herbert.Bayer@bundrinno.de] Added pdf_skipn. This allows you to skip 'n' number of lines. Saves calling pdf_skip numerous times.
08/25/03	G Campbell	Added pdf_TotalPages function. This allows you to include the Total Number of Pages for the document directly into your report. For instance, if you wanted to have 'Page n of x' as your Page footer then you can implement this with pdf_TotalPages(streamname).
08/26/03	G Campbell	Added PageHeader functionality. Similar to the PageFooter functionality previously outlined but for the top of the page.
08/26/03	G Campbell	Updated pdf_xref to use PUT CONTROL and CHR(13) and CHR(10). This is due to compatability issues between UNIX and Windows implementations. Each Xref line must be a certain number of characters and if we use SKIP it will differ based on OS.
08/27/03	G Campbell	Updated pdf_line to include a decimal value for the line thickness.
09/02/03	G Campbell	Updated text drawing components to use pdf_TextY to determine the appropriate line number. Removed use of pdf_CurrentLine. This was causing issues when working with PageFooter.
09/02/03	G Campbell	Started playing with proportional fonts and text placement today. Fixed some issues that were found hoping to accommodate the ability to place proportional fonts correctly. Fixed pdf_text_to to place appropriately but you may notice that the placement seems 'off' compared to Fixed fonts. This is due to the fact that the placement is calculated as -- (Column Position * Width of CHR(32)) minus the pdf_text_width("of appropriate text"). This gives us a placemnt to work to. Also, fixed pdf_text_width to use the entry + 1 to determine the font width -- this is because there is a zero entry in the AFM File which doesn't coincide with ASC value of a character.
09/02/03	G Campbell	Added function pdf_ImageDim to retrieve appropriate dimension values. Valid Dimension input values are "HEIGHT" and "WIDTH". Return 0 if can't find Image name. This is helpful when placing a rectangular box around an image.
09/03/03	G Campbell	As per John Stonecipher (jstone@inpac.com) Added 'Line Weight' parameter to pdf_rect. This allows you to modify the line drawing weight of a rectangle.

09/03/03	G Campbell	<p>Ensured that all calls to pdf_error had the correct funtion or procedure name. This is so that debugging is easier.</p>
09/03/03	G Campbell	<p>Updated pdf_wrap_text to see if any CHR(13) were included in the character string. If so, then automatically do a pdf_skip in the wrap procedure.</p>
09/09/03	G Campbell	<p>Added an extra parameter to pdf_load_font procedure. The additional parameter is used to define character differences. That is, it allows you to re-map specific characters in the AFM file to something else. The format of the DIF file should be:</p> <pre><character number><space>/<PS Character Name><skip></pre> <p>eg:</p> <pre>218 /SF010000</pre> <p>This would change character 218 (Uacute in a cour.afm) file to the Postscript character SF010000 (which is "box drawings light down and right"). These codes can be found at:</p> <p>http://partners.adobe.com/asn/tech/type/opentype/appendices/wgl4.jsp</p> <p>Also, created pdf_font_diff procedure so that you can dynamically re-map characters.</p>
09/09/03	G Campbell	<p>Added pdfSKIP preprocessor. This sets the SKIP to include the appropriate characters when compiled on a given OPSYS. This is to help overcome the OS compatability issues when generating PDFs.</p>
10/14/03	G Campbell	<p>Updated pdf_replace_text to handle back slashes in text fields.</p>
10/28/03	G Campbell	<p>Added logic to determine whether a text line could possibly include the TotalPages function. Hopefully this will help increase the processing speed.</p>
11/10/03	G Campbell	<p>Copied pdf_inc.i to pdf_inc.p and reworked pdf_inc.i to call pdf_inc.p Persistently</p> <p>pdf_inc.i now also has single argument</p> <pre>{1} - can be nothing, THIS-PROCEDURE, or non-blank</pre> <p>If blank, then pdf_inc.p is added as a SUPER procedure to the SESSION handle.</p> <p>If THIS-PROCEDURE, then pdf_inc.p is added as a SUPER Procedure to the THIS-PROCEDURE handle.</p> <p>If neither of those two options are specified then pdf_inc.p is run persistently. All procedural calls must now contain IN h_PDFinc. eg:</p> <pre>RUN pdf_text IN h_PDFinc ("Spdf","Sample").</pre>
12/05/03	G Campbell	<p>Added code per Peter Kiss (peter.kiss@paradyne.be) that checks for pre-existance of PDFinclude Handle.</p>
	G Campbell	<p>Added function declarations for:</p> <pre>pdf_FillRed pdf_FillGreen pdf_FillBlue pdf_LastProcedure</pre>

12/17/03	G Campbell	Added function declaration for pdf_PageRotate
		This function returns the current Rotation angle for pages.
12/18/03	G Campbell	Added function declaration for pdf_get_parameter
		This function allows you to determine the value of a TT_pdf_param (parameter). In future this will replace a lot of other function calls. For example, pdf_Page, pdf_TopMargin, pdf_LeftMargin.
		This one function will return all values. This will also be used in conjunction with the procedure pdf_set_parameter (used to set the values).
01/08/04	G Campbell	Separated the function declaration into their own include file called pdf_func.i. This is so that the functions can be declared in multiple places. For example, pdf_func.i is used here but it is also used in pdftools.p.

06/03/04	G Campbell	renamed pdfextract.i to pdfglobal.i
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07/06/05	G Campbell	removed h_PDFinc variable -- added into pdfglobal.i
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{ pdfglobal.i "NEW SHARED" }

/* PEKI - Find the handle if on the air */
&IF "{1}" = "THIS-PROCEDURE" &THEN
    h_PDFinc = THIS-PROCEDURE.

    DO WHILE VALID-HANDLE(h_PDFinc)
    AND h_PDFinc:PRIVATE-DATA <> 'Persistent PDFinc':
        h_PDFinc = h_PDFinc:NEXT-SIBLING.
    END.

&ELSEIF "{1}" = "" &THEN
    h_PDFinc = SESSION:FIRST-PROCEDURE.

    DO WHILE VALID-HANDLE(h_PDFinc)
    AND h_PDFinc:PRIVATE-DATA <> 'Persistent PDFinc':
        h_PDFinc = h_PDFinc:NEXT-SIBLING.
    END.
&ENDIF

IF NOT VALID-HANDLE(h_PDFinc) THEN DO:

    /* Call pdf_inc.p Persistently */
    RUN {&PDFDIR}pdf_inc.p PERSISTENT
        SET h_PDFinc.

    ASSIGN h_PDFinc:PRIVATE-DATA = 'Persistent PDFinc'.

    &IF NOT PROVERSION BEGINS "8" &THEN
        &IF "{1}" = "THIS-PROCEDURE" &THEN
            IF VALID-HANDLE(THIS-PROCEDURE) THEN THIS-PROCEDURE:ADD-SUPER-PROCEDURE(h_PDFinc).
        &ELSEIF "{1}" = "" &THEN
            IF VALID-HANDLE(SESSION) THEN SESSION:ADD-SUPER-PROCEDURE(h_PDFinc).
        &ENDIF
    &ENDIF
END. /* If Not a valid Handle to PDFinclude */

/* ----- Pre-Define Functions ----- */

{ pdf_func.i h_PDFinc }

/* ----- End of Pre-Define Functions ----- */
```