Graphical Enhancements

PxPlus 2019 (v16)

Graphical Enhancements

- New Graphical Features

    - Spell Checker
    - Movable 'Sprite' like buttons
    - Better support for image cropping/rotation on controls
    - Grid improvements
    - Faster way to load lists
    - Drop box selection improvements
    - Mnemonic changes

    - And a NEW charting object

See **Charting 101** **PDF**

Enhanced Buttons

Using Buttons as Sprites

- New Movable and Scalable bitmap buttons
  - Allows buttons to be used to show image or object
  - User can drag buttons
  - Image will be scaled automatically to fit button

- Allows simple display of real-world environments:
  - Restaurant layouts   - Table placements
  - Car park   - Find vehicles
  - Warehouses   - Help locate inventory
  - Hotels   - Display room layout

Enhanced Buttons

Movable Buttons

- Movable buttons can be dragged to a new position
  - Button 'click' event triggers when mouse released
  - New position can be found in either:
    - 'Col and 'Line
    - 'Left and 'Top

- Two ways to make a button moveable
  - On create include OPT="M"
  - Set the 'Moveable button property to 1

Enhanced Buttons

Button Images

- New option to place image Scaled and Behind Text
  - Image will scale to button size
    - Aspect ratio will be preserved
    - Image centered in the button
  - Text, if any, will appear centered on top of image

- Two ways to set image scaled and behind text
  - On create include OPT="C"
  - Set the 'BitmapPosition button property to 5

For image button only use flat transparent buttons (OPT="CTF")

Improved Image Option Support

Imaging Option on Controls

- Control images now support following picture options:
    - Rotate:*angle*   - Rotate image counter clockwise
    - Invert   - Inverse image (black-white)
    - Blackwhite   - Convert image to black and white grayscale
    - Flip:*flip*   - Flip image (Horizontal, Vertical, Both)
    - Crop:*x1:y1:x2:y2*   - Crop the image at specified pixels

Combine rotation, moveable, scaled image buttons to make a sprite

Don't Forget
Image size changes
with rotation!

Ability to Load Data Faster

New 'LoadPoint Option for LIST_BOX and GRID

- Property 'LoadPoint used to define where LOAD data inserted
  - 0   - Data replaces existing data in list
  - >0   - Data inserted at index specified and 'LoadPoint reset to 0
  - -1   - Data appended to existing data in list

New with
PxPlus 2019

  - -2   - Data replaces contents starting at 'Item which will be updated

  - Allows fast and easy loading of lists by sending blocks of data
  - Can be used with background loading

Ability to Load Data Faster

Sample Logic Using 'LoadPoint Option -2

```
  lb=10
  list_box lb,@(40,5,40,20),fmt="[Inv]l10 [Cust]l30",opt="rV",sep=";"
  open (1,iol=*)"invhdr"
  open (2,iol=*)"client"
!
  lb'ItemNeededCtl=100
  lb'itemCount=num(fin(1,"NUMREC"))
!
  while 1
   obtain (0)'BI',*,'EI'
   if ctl=4 or eom=esc then break
   if ctl=100  then gosub Update_list
  wend
!
  end
```

```
Update_list:
   data$=""
   rnoFrom=lb'ItemNeededFrom,  rnoTo=lb'ItemNeededTo
   if rnoFrom=0 or rnoTo=0  then return
!
   for recno=rnoFrom to rnoTo
    read data from "" to iol=iol(1),iol=iol(2,rec=cst$)
     if recno=rnoFrom \
       then read (1,rno=recno,dom=*next) \
       else read (1,end=*break)
     read (2,key=clientid$,rec=cst$,dom=*next)
    data$+=invoicenumber$+";"+cst.ClientName$+sep
   next
!
   lb'loadpoint=-2,  lb'item=rnoFrom
   list_box load lb,data$
   return
```

Previously set 'Item to record number, then changed 'ItemText$ MUCH SLOWER

Grid Control

- Improved handling of locked cells
  - Optional non-locked background color
    - Easier to substitute Grid for List box
  - Enabled copying of locked cell contents

- Automatic adjustment of default Row height based on Font
  - Will not adjust any row whose height = 0

- New 'LockTopRows to exclude rows from sort
- Option to use old-style 'Multi-line' input handling
  - Disables direct entry of ENTER (CR) and Up/Down arrows

Improved Drop Box Handling

Multi-keystroke Searching

- User can type multiple characters to position list
  - Used ONLY to search first character based on entry

  - Multiple characters typed rapidly now searched
    - Characters must be entered within ½ second of each other
    - Maximum of 8 characters

- Supported in regular Drop Box and in Grid

Hover Detection by Co-ordinates

- New option for SETMOUSE directive

> SETMOUSE @(col,line,cols,lines) **^** *ctl_value*

- Will generate the *ctl_value* when mouse moved over region specified
- Ideal for having custom Tips or Hover initiated information

- Works locally and when using WindX
  - Currently not supported by *i*Nomads

Improved Windows Font Handling

Resolved: Windows Default Font Problems

- Default graphical font in Windows is "MS Shell Dlg"

> The default graphical font in Windows is "MS Shell Dlg"
>
> It DOES not really EXIST!

- Using this causes problems with RTF and PDF files
  - Font not found will result in default font being used with unexpected results
  - It's virtually identical to Segoe but sizes slightly different

- PxPlus 2019 maps MS Shell DLG to Segoe for RTF and PDF files

The 'PICTURE' Mnemonic

- New Mode: 'PICTURE'(x,y,x,y,pathname$,*mode*)

Mode	Description	Mode	Description
0	Draw asis, Top left aligned	4	Color blended scale to fit
1	Center and crop within region	5	Scale with aspect ratio, position top left
2	Scale to fit region	6	Scale with aspect ratio and center
3	Tile to fill region	7	Scale to cover, center, and crop

Mode 7 not supported by *PDF*
Uses Mode 6

DireXions 2019

The 'TEXT' Mnemonic

- New formatting option "E"

  - Indicates output with ellipsis (…) if needed
  - May be used for single line 'TEXT' mnemonics (no wrapping)
  - Requires both start and end co-ordinates

```
PRINT    'RECTANGLE'(x,y,x1,y1),
         'TEXT'(x,y,x1,y1,"Some very long text that won't fit", "E"),
```

Some very long text that …

BITMAP Enhancement

Image Files Made Easy

- Simplifying how images are created dynamically
  - *BITMAP* based the image size on LENGTH= and WIDTH= options
    - These options defaulted to Inches or Millimeters
    - Had to set/consider DPI= to establish actual image size

  - Added option to specify px following LENGTH= and WIDTH= options
    - To create a 100x50 image

  > OPEN (HFN) "*BITMAP*;WIDTH=100px;LENGTH=50px"

    - Save FILE (nn) can create BMP, JPG or PNG from this file

New Charting Object

- All new charting object

  - Better, faster, more functional charting through PxPlus object

<div align="center">
More details at Charting 101 PDF
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Additional Resources

The help link(s) below refer to the current on-line help pages. The functionality may have been further updated since the PxPlus 2019 (version 16) release.

- [Button Directive](#)
- [Button Properties](#)
- [LIST_BOX Properties](#)
- [GRID Control](#)
- [Drop Box Control](#)

- [SETMOUSE](#)
- [Picture Mnemonic](#)
- [Text Mnemonic](#)
- [*BITMAP*](#)
- [Plus Charting Utility](#)