I. Introduction

   NINDRAW is a software tool designed to be used in the creation and
manipulation of graphics for video games. This current version runs on
any IBM PC or compatible with a VGA video card and monitor. It will run
only in the 320 x 200 x 256 VGA mode, and it requires the use of a mouse.

   Any similarity between the title of this program and a popular home
game console manufactured by a big, mean Japanese company is purely
coincidence.

   NINDRAW was written by Ken Beckett for the use of Color Dreams, Inc.

II. Command Line Options

   The following options are available from the DOS command line when
using NINDRAW:

              load program with specified file active.
       -b   use VGA BIOS calls to change palette.
       -m   force "MAKE" of specified file.
       -o   force "MAKE" of specified file with objects.
       -v   display program version.
       -?   display this list of options.

   Examples:

       C>nd game   -start program and load file "game.drw".

       C>nd -mgame   -load file "game.drw", make the files
                   YOURBACK.ASM and DRAWDATA.ASM, and exit
                   back to DOS.
                   NOTE: as of V1.07, if the data in YOURBACK.ASM
                       exceeds 26K, the remainder is written to a
                       file called ALTBACK.ASM.

       C>nd -ogame   -same as above, but include objects in
                   the DRAWDATA.ASM file.

   Note that the '-m' and '-o' options do NOT require VGA.
   For more information on the MAKE process, see section IV.

   NOTE: to avoid the problem of many VGA board BIOSes un-necessarily
       waiting for vertical retrace EVERY time the call to change a
       palette register is made, this program writes directly to the
       VGA hardware to change the palette registers. This works fine
       on IBM VGA ISA-bus boards, ATI VGA, and several others. If

you have any problems, you can try the '-b' option when load-
ing the program, but this might cause the program to run very
slowly when changing palettes (depending upon your specific
board BIOS - the IBM board runs slow, while the ATI board will
work fine in either mode, for example).

III. Keyboard Commands

   This program makes heavy use of the mouse, but also allows the use
of many key sequences for convenience. The commands marked with an
asterisk cannot be operated with the mouse.

   The following key commands are available in this version:

      TAB/SHIFT-TAB   -select next/previous editing mode in editing window.

     *ARROW KEYS   -scroll the item in the editing window (assuming
                    it is larger than the viewing area). The scroll
                    increment is one character (one pixel if in
                    magnify mode).

     *SHIFT ARROWS   -scroll the item in the editing window by
                    increments of one half the window size.

      F1-F4   -select color 0-3 from current sub-palette.

      SHIFT F1-F4   -select sub-palette 0-3 from current palette.

      F5-F6   -select previous/next item in editing window.

      SHIFT-F5/F6   -select first/last item in editing window.

      F7-F8   -select add/delete item in editing window.

      SHIFT-F8   -select delete ALL items of the current mode.

      F9   -select enter search string for item name.

      F10/SHIFT-F10   -select export/export-append current item.

     *CTRL-P   -tag/untag current palette. Palettes are not
                    included in a MAKE if they are not tagged (palette
                    name is displayed as dark grey). Default is tagged.

     *CTRL-T   -tag/untag current item. Items are not included
                    in a MAKE if they are not tagged (item name is
                    displayed as dark grey). Default is tagged.

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*ALT-F1        -re-pick last data picked.

*ALT-F8        -toggle wait for vertical interrupt mode.
               When on, the program will sync to vertical
               retrace to run the flashing palettes as
               accurately as possible.  On slower machines
               this may cause the program to behave sluggishly.
               Also, moving the mouse may cause the palette to
               flash slower.  This mode is always turned on
               automatically when setting the frequency of a
               palette or when running an animation.  The machine
               will beep when the toggle is from off to on.

*ALT-F9        -display VGA palette.

*ALT-F10       -activate NES to VGA color matching window.

 ALT-A         -append ".DRW" and ".VID" files to current data.
               (same as RIGHT button on LOAD)

*ALT-C         -display current time and date (does not update).

 ALT-H         -display HELP information.  *NOT IMPLEMENTED YET*
               (same as LEFT button on HELP)

*ALT-I         -programmer information.

 ALT-L         -load ".DRW" and ".VID" files.
               (same as LEFT button on LOAD)

 ALT-M         -make YOURBACK.ASM and DRAWDATA.ASM files.
               (same as LEFT button on MAKE)
               NOTE: as of V1.07, if the data in YOURBACK.ASM
                 exceeds 26K, the remainder is written to a
                 file called ALTBACK.ASM.

 ALT-O         -make YOURBACK.ASM and DRAWDATA.ASM with objects.
               (same as RIGHT button on MAKE)

 ALT-P         -toggle character/palette number hex display.
               (same as LEFT on hex number)

*ALT-Q         -query available memory status.

*ALT-R         -re-draw the entire screen.

 ALT-S         -save current data to ".DRW" and ".VID" files.
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(same as LEFT button on SAVE)

        *ALT-T   -translate a character in the current item.

         ALT-U   -undo last operation.   *NOT IMPLEMENTED YET*
                    (same as LEFT button on UNDO)

        *ALT-V   -display program version number.

         ALT-X   -exit to DOS.
                    (same as LEFT button on EXIT)

         ALT-Z   -shell out to DOS (type "exit" to return later).
                    (same as RIGHT button on EXIT)

IV. Main Control Window

  You may use the LEFT & RIGHT mouse buttons as follows in this window:

  1) LOAD   - LEFT to load ".DRW" and ".VID" files or
              RIGHT to append to the current data.

  2) SAVE   - LEFT to save current data.

  3) MAKE   - LEFT to create YOURBACK.ASM (contains all
              backgrounds) and DRAWDATA.ASM (contains animations,
              palettes, sprites, and optionally objects).
              RIGHT to include objects in DRAWDATA.ASM.
              You may create only one of the two data files by
              pressing the ESC key when the program prompts for
              the file that you don't want to have written.

  4) HELP   - *NOT IMPLEMENTED YET*

  5) UNDO   - *NOT IMPLEMENTED YET*

  6) EXIT   - LEFT to exit to DOS,
              RIGHT to spawn a DOS shell.

    Note that in the full-screen EXPAND mode, this window is hidden, and
the above functions can only be performed by use of the appropriate key
sequence.

V. Character Set Window

  You may use the LEFT & RIGHT mouse buttons as follows in this window:

1) 0-F,X,LO,HI - use LEFT to select the character set and bank (LO/HI).
           The X set is a temporary or "scratch" set, and is not
           saved by the SAVE function.

2) ARROWS   - LEFT to select previous or next character set.
           RIGHT to select first or last set currently in use.

3) IMPORT   - LEFT to import a single set into the current set.
           RIGHT to import an entire ".VID" file.

4) EXPORT   - LEFT to export a single set to a file.
           RIGHT to export the entire ".VID" file.

5) CLEAR   - LEFT to clear the current set (both LO & HI banks!).
           RIGHT to clear ALL character sets.

6) VID/VRM   - LEFT to toggle between ".VID" and ".VRM" files for
           the IMPORT & EXPORT functions. The ".VRM" files do
           not have 6 byte set headers. To create a ROMable
           file that contains all of your character sets, set
           to ".VRM" mode and use RIGHT on EXPORT.

7) n-HI   - LEFT to toggle between 1-HI and 2-HI modes. 2-HI
           mode allows for easier use of 1 x 2 mode sprites
           and 2 x 2 objects and backgrounds. This mode simply
           changes the way the character set is displayed.

8) "anchor"   - LEFT to toggle anchor mode on/off. When anchor mode
           is on and two character set windows are displayed,
           changing the set with the anchor on will force the
           other window to display the other bank of the same
           set. (the "anchor" is the left one of the two arrow-
           like symbols).

9) "arrow"   - when only one character set window is displayed, LEFT
           to open a second character set window. When two are
           displayed, LEFT on the top window to close the bottom
           window, and LEFT on the bottom window to close the top
           window and bring the bottom window up to the top.

   In the character set section of the window, press and hold the RIGHT
button to "drag" the selection box. Press and release the LEFT button to
"pick" up the data in the drag box (you may also release the RIGHT button at
this time). You may now drop the picked data in the same window, the
second character set window (if active), or the object editing window
(if active). To drop the data, press the LEFT button (this may be done
repeatedly for multiple drops). To discard the picked data, press the

RIGHT button (hold it down to start a new drag).

   If the character set section of the window displays "UNUSED", then the
set is not currently allocated. To allocate the set with the characters set
to a built-in default character, press the LEFT button on the word "UNUSED".
To allocate the set with the characters set to hex numbers representing their
corresponding character numbers, press the LEFT button on "UNUSED".

VI. Object Editing Window

   You may use the LEFT & RIGHT mouse buttons as follows in this window:

   1) item name   - LEFT to cycle between normal and EDIT modes (for
                 animations only).
                 RIGHT to rename the current item.

   2) ARROWS   - LEFT to display previous/next item.
                 RIGHT to display first/last item.
                 When an item is displayed, the palette and character
                 set are always changed to the defaults for the item.

   3) LIST   - LEFT to enter a search string.

   4) ADD   - normal mode: LEFT to add a new item.
                 EDIT mode: LEFT to add a frame after the current one.

   5) DEL   - normal mode: LEFT to delete the current item.
                         RIGHT to delete ALL items.
                 EDIT mode: LEFT to delete the current frame.

   6) EXP   - LEFT to export the item to a text file.

   7) edit mode   - LEFT & RIGHT to cycle through character, object,
                 background, sprite, and animation modes.

   sprites only:

   8) base number - LEFT to enter a new base number.

   animations only:

   9) ani type   - LEFT to change to sprite/object mode with the
                 current frame of the animation as the current
                 sprite/object.

   10) frame name - RIGHT to rename the current animation frame.

11) frame LIST - LEFT to enter a search string.

12) frame # - LEFT on arrows to go to previous/next frame.
          RIGHT on arrows to go to first/last frame.
          LEFT on frame number to go to specific frame.

13) ANI   - LEFT to make animation run/stop.
          Note that while the animation is running, the program
          will sync to vertical retrace to run the animation as
          accurately as possible. On slower machines this may
          cause the program to behave sluggishly. Also, moving
          the mouse may cause the animation to run slower.

14) freq #   - LEFT on arrows to decrease/increase frequency.
          RIGHT on arrows to select min/max frequency.
          LEFT on frequency number to set specific frequency.

editing tools:

15) MAGNIFY   - LEFT to set magnify select mode, or cancel magnify if
          already active. When magnify select mode is set, the
          mouse pointer will appear as a magnifying glass. Set
          the glass over the spot that you wish to magnify and
          press the LEFT button.

16) EXPAND   - LEFT to activate expand mode, or cancel expand if
          already active. RIGHT to activate full-screen expand
          mode, or toggle between normal & full-screen expand.

17) MEMO   - LEFT to toggle memorize flag. When memorize is on,
          changing the palette or character set will cause the
          new settings to be the new defaults for the current
          item. When an item is displayed, the palette and
          character set are always changed to the defaults for
          the item.

18) DRAW   - LEFT to toggle between draw and drag & pick modes.

19) GRID   - LEFT to toggle grid mode on/off (displays character
          boundaries when in magnify mode).

20) FLIP   - LEFT to toggle flip mode on/off. When on, LEFT flips
          characters left-to-right and RIGHT flips top-to-bottom.
          Works only in sprite and character modes.

21) PUT OBJ   - LEFT and hold to pick up the current object (works
          only in background mode. Used to place objects onto
          backgrounds.

In the editing section of the window, press and hold the RIGHT
button to "drag" the selection box. Press and release the LEFT button to
"pick" up the data in the drag box (you may also release the RIGHT button at
this time). You may now drop the picked data elsewhere in the same
window. To release or drop the data, press the LEFT button (you may press
it repeatedly for multiple drops). To discard the picked data, press the
RIGHT button (hold it down to start a new drag).

   You may not drop data in the character set window if it was picked up in
the editing window. Also, you may not drop data in the editing window if the
window is in character mode and the data was picked from another mode. These
limitations may be removed in the future, but this has a low priority.

   When in draw mode, press the LEFT button to draw in the current color
selected in the palette window. Press the RIGHT button to change the
palette of the area under the mouse pointer to the current sub-palette
selected in the palette window.

VII. Palette Window

   You may use the LEFT & RIGHT mouse buttons as follows in this window:

   1) item name   - LEFT to cycle between normal, FREQ (frequency adjust),
                and EDIT (edit flashing palette) modes.
                RIGHT to rename the current palette.
                Note that while in FREQ mode, the program will sync
                to vertical retrace to run the flashing palette as
                accurately as possible. On slower machines this may
                cause the program to behave sluggishly. Also, moving
                the mouse may cause the palette to flash slower.

   2) ARROWS   - normal mode: LEFT to display previous/next palette.
                    RIGHT to display first/last palette.
                FREQ mode: LEFT to increment/decrement frequency.
                    RIGHT to set frequency to min/max.
                    (frequency can only be adjusted for
                     flashing palettes)
                EDIT mode: LEFT to display previous/next frame.
                    RIGHT to display first/last frame.

   3) LIST   - LEFT to enter a search string.

   4) ADD   - normal mode: LEFT to add a new palette.
                EDIT mode: LEFT to add a frame after the current one.
                    RIGHT to add a blinker.

5) DEL   - normal mode: LEFT to delete the current palette.
                        RIGHT to delete ALL palettes.
                EDIT mode: LEFT to delete the current frame.
                        RIGHT to delete a blinker.

   6) EXP   - LEFT to export the palette to a text file.

   In the palette section of the window, press the left button on a sub-
palette number to select a sub-palette. Press the left button on a color
in a sub-palette to select the sub-palette AND select the current color
in the sub-palette.

   To set a color, press and hold the LEFT button on the color (either in
the 64-color selection window OR the current 16-color palette), move the
color to the desired position in the 16-color palette, and release the
LEFT button to drop the color (or press the RIGHT button for multiple
drops).

VIII. Text Window

   The text window is used to display input prompts, status messages, and
error messages. In its default state, it normally displays the program
version number.

   In the full-screen EXPAND mode this window is not shown, but will pop-up
whenever it is needed. If the ALT-Q, ALT-T, or ALT-V keys are used in
this mode, the program will halt and wait for a key press before removing
the window and allowing the program to resume operation.