SPRITE ANIMATOR V 1.0

written 1995 by
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INSTALLING:
You must have
Windows 3.1/3.11 WITH **Win32s** extensions AND **WinG**
OR
Windows 95 with **WinG**
OR
Windows NT (from V 3.5) with **WinG**

If you don't know what Win32s or WinG is or where you can get them read the chapter "System-requirements".
If you have installed this program you should read the chapter "**Some examples**" for the first steps.

CONTENTS

(1) WHAT IS SPRITE-ANIMATOR ?

For everyone who developes games on PC sprite animation creating/testing for 640*480 / 320*240 video modes is a problem.

With standard paint programs you cannot animate or you have to save many pictures and then make a .AVI with a PCX to AVI converter only for testing the animation.

SPRITE-ANIMATOR is a tool with which you can test your animation **immediantly** after painting the animation. You only need a standard paint program like Corel-Paint and the SPRITE-ANIMATOR . Then you paint the animation (like a walking sprite) on **ONE** picture, each animation-phase in a frame.
After starting SPRITE-ANIMATOR you can have a look at the sprite walking over the background.

(2) FEATURES OF SPRITE-ANIMATOR

- You can use every PCX/BMP graphic program to create the animations
- You can put the frames on the picture the way you like
- Very fast because of 32-Bit and Assembly language graphic routines and WinG
- Dialog-Window for setting the options (like animation picture name,speed,...)
- You can change the speed (in millisecs)/ acceleration during the animation
- Color matching for foreground and background
- 320*240 mode simulation on 640*480 display
- Command-line options for all functions
- WinG-speed test , speed test for assembly-trans-blit, assembly trans-blit with RLE-compression and WinBlit
- Supports top-down and bottom-up bitmaps
- No size restriction of the picture

(3) SYSTEM REQUIREMENTS AND INSTALLING

You need
- PC with Windows 3.1/3.11 AND Win32s extensions
 or Windows 95
 or Windows NT (from V 3.5) I didn't test it under Win NT, but it should run.
- WinG

I**nstalling**: Create an directory and unzip the zip-file.
If you start the program for the first time an .ini file (SPRTEST.INI) will be written in the Windows-directory.

Where can I get Win32s and WinG?
You can get the Windows 3.11/3.1 32-Bit extensions from:
ftp.microsoft.com, /softlib/MSLFiles/PW1118.EXE

You can get the WinG library from:
ftp.microsoft.com, /developr/drg/WinG/WinG10.zip

With the WinG library blitting DIB's to the screen is faster (in most cases twice as fast or much more). Because of that it is important for games/animation programming under Windows.

Known Bugs:
Under Windows 3.11+Win32s there is a little bug: If you change the palette during one session it can be that the rectangle behind the sprite (not the whole background) has got a wrong color. You eleminate this by setting `BitBlit=0` (after `[Animation]`) in the `SPRANIM.INI` file. Under Windows 95 this error doesn't appear.

(4) SOME EXAMPLES

If you first start the program for the first time there should be a simple walking sprite walking at the beach.

The settings for this example:
Animation-picture: GEHEN.PCX
Background-picture: TROPEN.BMP
StartX,Y: 0,300 AcceleratorX,Y: 50,0
Time:100,Keypress off,Change Frame on,Change Postion off
New postion after 5 frames, New frame after 0 positions
First-Frame:0 ,Last-Frame: 0, Play Standard,Óutput-double off
and Match Colors to halftone-palette
During the animation you can change the speed with Cursor-Right/Up (faster)
or with Cursor-Left/Down(slower).

Other example:
Get the settings from above and change :
Animation-picture:HASE2.PCX
Y-Pos: 240,Accelerator-X:5
Time:0,Change Frame on and Change Position on
Set New Postion after ... frames to 0
Select Use Palette from animation picture

Play with the num-pad-keys for changing the X-Y-acceleration.

And the last example:
Animation-picture: BRILLE.PCX
Background: None
StartX,Y: 50,50
Time:300
Play: Ping-Pong
Change Frame:on, Change Position off
Width:320,Height:240 ,Output-double:on

(5) CREATING AN ANIMATED SPRITE

- You need a paint program (like Corel-Draw) which can write .PCX or .BMP files.
- Then you create a frame with enough size for the sprite.
- Copy the frame as often as you need for the animation.
- Draw the animated sprite in the frames
- Save the picture as PCX or BMP and then start SPRITE-ANIMATOR

If you have done something wrong there should be an error- message.

For example if you want to create a walking person with 8 frames, put 8 frames on the picture.

NOTE:
!! The frames MUST have the same size.
!! The transparent color MUST be 0.
!! DO NOT put any pixels outside the frames.
!! The picture must be saved with 256 colors (8-Bit).
!! The first frame is the frame in the left-upper corner and the last frame is the frame in the lower-right corner.

(6) THE COMMAND-DIALOG
If you start SPRITE-ANIMATOR without command-line options a dialog box appears.

With the Start-button you start the animation.
With the Exit-button you leave the program. The options will be written in the INI-file.

File-settings:
With the **Browse**-button after "Animation: " you can select the picture with the animation.
With the **Browse**-button after "Background: " you can select the picture with the background. If you don't wat to have a background please select **None**.

Animation-settings:
Start-Position: The X,Y-coordinate of the sprite at the beginning.
Accelerator-X,Y:The acceleration in X-Y direction (negative values are allowed). This only works if you have **Change-Position** or **New position after ... frames**

selected.

Time: The time between two frames or /and an position-change.

Keypress: With this option selected you have to press the SPACE-bar to change the frame/ position.

Change-Frame:If you select this option the sprite changes the frames. This option cannot be combined with **New frame after ... positions**.

Change-Position:If you select this option the sprite move over the background.This option cannot be combined with **New position after ... frames**.

New position after ... frames:
The position changes after n frames. This option is useful for a walking sprite. If n is zero this option is deactivated.

New frame after ... positions:
The frame changes after n position changes. . If n is zero this option is deactivated.

First frame: The first frame which should be animated.

Last frame: If the value is zero the last frame of the picture is the last frame.

RLE-compression:
With this option the animation is RLE-packed. This increases the speed and decreases the memory consumption.

Play Standard: The animation starts with the first frame and ends with the last frame.

Play Reverse: The animation starts with the last frame and ends with the first frame.

Play Ping-Pong: The animation plays from first to last frame and then from last to first and so on.

Window-settings:

Width: The width of the window. This has only an effect if there is no background-picture loaded (**None**).

Height: The height of the window. This has only an effect if there is no background-picture loaded (**None**).

Background-Col.:Number of the background-color window. This has only an effect if there is no background-picture loaded (**None**).

Output-Double:Stretches the window. This useful to simulate a 320*240 on a 640*480 screen. Please do not select this option if the window will be bigger than the screen.

Color-settings:

Use palette from animation picture:
The window will have the palette of the animation-picture.If you use a background picture it should have the same color palette as the animation-picture.

Copy system colors:
The window will have the palette of the animation-picture. The windows system-colors will be written (colors 0-9 and 245-255) into this palette. This is useful for testing if the palette can be used for maximize performance. Blits with system-palette included under windows are faster.

Match colors to halftone-palette:
If the background picture and the animation picture have got different color palettes you should select this option. The colors will be converted to the WinG-halftone palette. This is fast but the results are not optimized. If you want to have a better quality of a picture which is converted to the halftone-palette read the chapter "Tips for color palette".

Use halftone palette:
The window will have the WinG halftone palette. This is useful for testing if the palette can be used for maximize performance. Blits with system-palette included under windows are faster.

(7) COMMAND-LINE OPTIONS
You can start the program with command line options.

Usage:
SPRITETEST [options] Animation-picture [Background-picture]
n is an integer number and must be directly after the option (e.g. -sx10 NOT -sx 10).

Animation-settings:		default settings
Start-Position: -sx n -sy n		middle of the window
Accelerator-X,Y:	-x n -y n	0,0
Time:	-t n	200
Keypress:	-k	off
Change-Frame:	-tf	off
Change-Position:	-tc	off
New position after ... frames: -nc n		off (0)
New frame after ... positions: -nf n		off (0)
First frame:	-af n	0
Last frame:	-al n	last frame
RLE-compression:	-p	off
Play Standard:	no option	on
Play Reverse:	-r	off
Play Ping-Pong:	- rp	off

Window-settings:		
Width:	-W n	640 or from loaded background-pic
Height:	-H n	480 or from loaded background-pic
Background-Col.	-bc n	0
Output-Double:	-d	off

Color-settings:			
Use palette from animation picture:		no option	set
Copy system colors:	-cw		off
Match colors to halftone-palette:		-cc	off
Use halftone palette:	-ch		off

Note: You cannot combine -nc with -tc and -nf with -tf.

(8) KEYS DURING THE ANIMATION:

If you have started SPRITE-ANIMATOR you can manipulate the animation:

Left-mouse button: Sets a new X-Y position.
Cursor-Right: Increases the time between the frames (+1 millisec).
Cursor-Up: Increases the time between the frames (+50 millisec).
Cursor-Left: Decreases the time between the frames (-1 millisec).
Cursor-Down: Decreases the time between the frames (-50 millisec).
R-Key: Reverse play on/off.
P-KEY: Ping-Pong play on/off.
SPACE-Key: Next frame/postion (only if **Key** is on).
K-Key: **Key** on/off.
O-Key: Shows the orientation which is returned by WinGReccomendDIBFormat.
NUM-PAD (Num-LED on):
2: Decreases the Y-acceleration (-1 pixel).
8: Increases the Y-acceleration (+1 pixel).

4: Decreases the X-acceleration (-1 pixel).
6: Increases the X-acceleration (+1 pixel) .
0: Set X,Y-acceleration to 0

Speed-Test:

F1: 500 blits of the acteur (in millisec) and 500 blits from Screen 2 to Screen 1 for restoring the background with BlitBit
F2: 500 blits with WinG to the Screen.

Notes to the speed-test:
With F1 you can test if it is faster to use RLE-compression(in most cases it is twice as fast and needs half of the memory) or a simply transparent blit. The results can be differing because of the multitasking.

(9) TIPS FOR THE COLOR PALETTE

The palette of the background on the sprites must be the same.

But how to make the same palette?
I highly recommend to use WinG-halftone-palette because you get the best results converting many sprites with different palettes to this palette or converting a 24-Bit image to 8 bit with this palette.
The palette is in the file "HALFTONE.PAL" and can be loaded in a picture converter program like PaintShop Pro 3.0. With PaintShop Pro load the picture select "Colors"-"Load Palette" and "Apply Palette to Image using Error Diffusion/use nearest Color" than you get better results as with the **Match colors to halftone-palette** option.

(10) BOOKS AND SOURCE-CODE

If you don't know how to create cartoon animations I recommend these books:
* How to Draw Cartoon Animation (Blair,P)
* Cartoon Animation - Basic Skills
from Walter Foster Publishing

I don't know if I will make the source code of this programm public but you can get some other source code for sprite animation in the WinG-SDK.

(11) REGISTRATION / THE FUTURE

This program is shareware if you use it you **must** register it.

For removing the boring "Please register" window fill out the registration form, put a 10$ check (or the same amount in an other currency (like DM)) with the registration form in an envelope and send it to:
Nicolay Mausz
Brauweilerhof
56820 Mesenich
Germany
You then get your registration-number with which you can remove the "please register" window.

The future:
I am planning to write a shareware paint program + AVI editor under Windows
(something like DPaint on Amiga).
Your registration will encourage me to release this program and you will have to pay less for

this program.

(12) CONTACTING THE AUTHOR / QUESTIONS

E-Mail: mausz@explorer.uni-trier.de
Address: see above
Fax: Germany - 02673 - 4162
Tel: Germany - 0651-140951

I have a WWW-page but I don't know if it can be accessed from outside:
http://treveris.uni-trier.de/~mausz/index.html

(13) OTHER PRODUCTS FROM FLYING-DOG SOFTWARE

The great Mathematics Program for ages 6-11

This learning program (we have no name for it yet) for mathematics will be released at the end auf 1995.

Features:

* CD-ROM
* over 10 fascinating action mathematics-games
* very exiting story
* tons of cartoon animation
* realistic graphics
* true speech
* amazing sound
* full 32-Bit, runs under Win3.1 and Win95
* runs with WinG
* autostart
* and much more...