Allegro Library

What is Allegro?

Allegro is an open source graphic library for game and multimedia programming.

Allegro is a recursive acronym which stands for

Allegro **L**ow **LE**vel **G**ame **RO**utines

It was started by Shawn Hargreaves in the mid-90's but has received contributions from hundreds of people.

Target languages are **C** and **C++**

For full information, see

http://alleg.sourceforge.net

Allegro functionalities

Allegro is a good library: it is fast and has many features. It allows you to do many things, such as:

- creating windows
- reading inputs from the keyboard
- reading inputs from the mouse
- loading data from files
- drawing images
- playing sounds

Allegro versions

Allegro 4
is the classic library, whose API is backwards compatible with the previous versions, back to Allegro 2.0.

Allegro 5
is the latest version, designed to take advantage of hardware accelerators. It is NOT backwards compatible with earlier versions.

Allegro only supports **2D graphics**, but it can be used along with other 3D libraries (e.g., OpenGL and Direct3D).

NOTE: for doing the project Allegro 4 is enough.

Where to find Allegro

Allegro's source code is maintained in a GIT repository:

git://git.code.sf.net/p/alleg/allegro

By default you will be on the 5.1 branch, but you can change the branch from your working tree as follows:

```
git checkout 4.4
```

How to install Allegro

Under Debian:

```
> sudo apt-get install liballegro4.2 liballegro4.2-dev
```

Under Red Hat:

```
> sudo yum install allegro allegro-devel
```

How to compile with Allegro

Source files must contain the directive:

#include <allegro.h>

NOTE: these are not apostrophes but grave accents (ALT 96)

Compiling and linking

> gcc test.c -o test `allegro-config --libs`

- compile test.c
- produce test as output file
- links with the Allegro library

Execution

> ./test

Initializing Allegro

allegro_init() initializes graphics data structures

allegro_exit() closes the graphic mode and returns in text mode

set_gfx_mode(GFX_AUTODETECT, w, h, vw, vh)

Enters the graphic mode (full screen) with resolution (w, h). If vw and vh are non zero, it defines a larger virtual screen with extra dimensions (vw, vh).

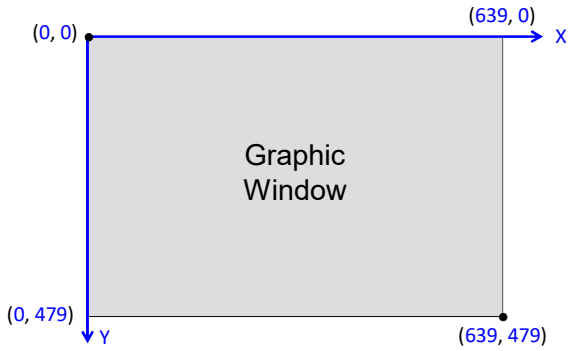
set_gfx_mode(GFX_AUTODETECT_WINDOWED, w, h, 0, 0)

Same as the previous function, but in a window.

Valid screen dimensions include:
320 x 240, 640 x 480, 800 x 600 and 1024 x 768.

Graphic coordinates

set_gfx_mode(GFX_AUTODETECT_WINDOWED, 640, 480, 0, 0);



Colors

Before entering the graphic mode with **set_gfx_mode**, you should set the color depth using:

set_color_depth(n)

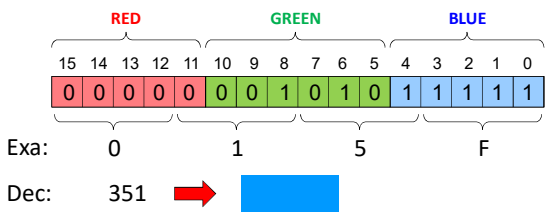
Specifies the number n of bits to be used for colors. Possible values of n are:

- 8 (default) 256 colors - standard VGA
- 15 RGB: 5 bits for each component
- 16 RGB: 5-red, 6-blue, 6-green
- 24 RGB: 8 bits for each component (slow, not aligned)
- 32 RGB: 8 bits for each component (faster, aligned)

Colors

- 15, 16, 24, 32-bit modes are called truecolor modes, because a color is directly represented by the corresponding number.

For example, in 16-bit mode, we have:



Making colors

color = **makecol**(red, green, blue);

Combines the RGB components (in the range [0, 255]) and returns an integer representing the corresponding color code to be used in the drawing functions.

color = **getpixel**(screen, x, y);

Returns the color code corresponding to the pixel at position (x, y) on the screen.

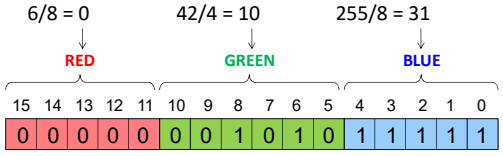
r = **getr**(color); g = **getg**(color); b = **getb**(color);

These functions can be used to decompose the color value returned by getpixel into its RGB components.

Colors

```
int   r, g, b;        // range [0, 255]
int   color;
      r = 6; g = 42; b = 255;
      color = makecol(r, g, b);
```

NOTE: In 15- and 16-bit modes, most significant bits are considered for the color.



Colors

- In the 8-bit mode (standard VGA) colors are treated as indexes of a table of 256 elements, (**color palette**), containing the RGB values in the range [0, 63].

Allegro defines the following types:

RGB a **struct** of 3 **unsigned char**.

PALETTE an array of 256 **RGB** entries.

For example, you can define:

```
RGB black = {0,  0,  0 };
RGB white = {63, 63, 63};
RGB green = {0,  63, 0 };
RGB grey  = {32, 32, 32};
```

	R	G	B
0			
1			
2			
3			
4			
⋮			
255			

Standard VGA

In the 8-bit mode, the first 16 colors in the palette are:

0	black	8	dark gray
1	blue	9	light blue
2	green	10	light green
3	cyan	11	light cyan
4	red	12	light red
5	magenta	13	light magenta
6	brown	14	yellow
7	light gray	15	white

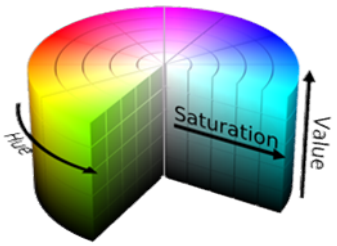
clear_to_color(screen, 14)

clear the screen making all pixels yellow.

RGB vs. HSV

HSV (Hue, Saturation, Value) is a color representation meant to be more intuitive than RGB, mapping color values into a cylinder:

Value represents the perceived luminance in relation to saturation.



RGB vs. HSV

Allegro provides the following functions to convert colors between the two representations:

```
int     r, g, b;        // RGB components
float   h, s, v;        // HSV components
```

rgb_to_hsv(r, g, b, &h, &s, &v);

Converts a color from **RGB** to **HSV**: (r, g, b) values range in [0, 255], h is from 0 to 360, s and v are from 0 to 1.

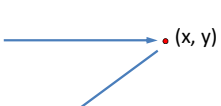
hsv_to_rgb(h, s, v, &r, &g, &b);

Converts a color from **HSV** to **RGB**: (r, g, b) values range in [0, 255], h is from 0 to 360, s and v are from 0 to 1.

Drawing functions

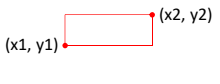
putpixel(screen, x, y, col);

col = **getpixel**(screen, x, y);



line(screen, x1, y1, x2, y2, col);

rect(screen, x1, y1, x2, y2, col);



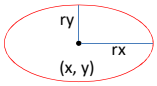
rectfill(screen, x1, y1, x2, y2, col);

Drawing functions

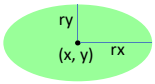
circle(screen, x, y, r, col);

circlefill(screen, x, y, r, col);

ellipse(screen, x, y, rx, ry, col);

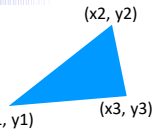


ellipsefill(screen, x, y, rx, ry, col);



Drawing functions

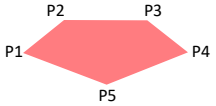
triangle(screen, x1, y1, x2, y2, x3, y3, col);



P1 P2 P3 P4 P5

int points[10] = {100, 200, 200, 100, 400, 100, 500, 200, 300, 300};

polygon(screen, 5, points, col);



polygon(screen, 4, points, col);

Drawing functions

Draws a red disc with radius R:

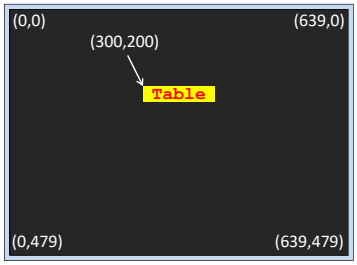
```
#define  RADIUS 50                    // disc radius

int  main()
{
int  x = 100, y = 100, col = 4;       // RED color

     allegro_init();
     install_keyboard();

     set_color_depth(8);              // VGA mode (8 bits)
     set_gfx_mode(GFX_AUTODETECT,640,480,0,0);
     clear_to_color(screen, 0);       // black background

     circlefill(screen, x, y, RADIUS, col);

     readkey();                       // wait for any key
     allegro_exit();
     return 0;
}
```

Text functions

textout_ex(screen, font, s, x, y, col, bg);

writes string s from coordinates (x,y) with color col and background bg. If bg = -1, background is made transparent.

textout_ex(screen, font, "Table", 300, 200, 12, 14);

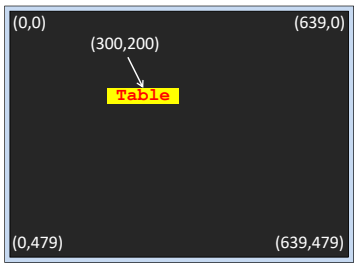


Text functions

textout_centre_ex(screen, font, s, x, y, col, bg);

like **textout_ex**, but the coordinates (x,y) are interpreted as the center of the string, rather than the left edge.

textout_centre_ex(screen, font, "Table", 300, 200, 12, 14);



Printing variables

Combining **sprintf** with **textout_ex** we can write anything in graphic mode.

sprintf(s, "format", var, ...);

like printf, but puts the output in string s.

The following code prints **3.14** starting from coordinate (5,8) with red color (4) on transparent background (-1):

```
char  s[20];
float x = 3.14159;

      sprintf(s, "x = %5.2f\n", x);
      textout_ex(screen, font, s, 5, 8, 4, -1);
```

prints only two digits after the decimal point

Keyboard functions

install_keyboard() install the keyboard manager

keypressed()

returns a positive value (true) if there are characters in the keyboard buffer, or zero (false) otherwise. This function does not block the program execution.

a = **readkey**()

returns an integer coding the next character found in the keyboard buffer. If there are no characters. It blocks the execution until a key is pressed.

readkey

```
int   a;
char  ascii, scan;

      a = readkey();

      ascii = a & 0xFF;
      scan  = a >> 8;
```

scancode	ASCII code
high byte	low byte

The ASCII code is a code of 7 bits identifying the pressed character.

The scancode is a code of 1 byte identifying the key pressed or released. Such a code is the same for all PCs and it is independent of the symbol printed on the keyboard. Its most significant bit is 0 if the key is pressed, 1 if it is released.

A useful input function

The following function waits for a key pressed and extracts the corresponding ascii code and scan code:

```
void   get_keycodes(char *scan, char *ascii)
{
int    k;

       k = readkey();    // block until a key is pressed
       *ascii = k;       // get ascii code
       *scan = k >> 8;   // get scan code
}
```

Scancode Keys

KEY_A … KEY_Z	KEY_0 … KEY_9	KEY_F1 … KEY_F12	
KEY_ESC,	KEY_TAB,	KEY_BACKSPACE	
KEY_ENTER	KEY_SPACE	KEY_END	KEY_HOME
KEY_LEFT	KEY_RIGHT	KEY_UP	KEY_DOWN
KEY_LSHIFT	KEY_RSHIFT	KEY_ALT	KEY_ALTGR
KEY_LCONTROL	KEY_RCONTROL	KEY_PGUP	KEY_PGDN

key[] array of flags automatically updated by Allegro.

For instance, **key[KEY_ESC]** is 1 (true) if the ESC key is pressed, 0 (false) otherwise.

Exiting by pressing ESC

The following code draws some pixels of random color in random points of the screen, until the ESC key is pressed:

```
int   x, y, col;
char  c;

      srand(time(NULL));

      do {
          x = rand()%XMAX;
          y = rand()%YMAX;
          col = rand()%16;
          putpixel(screen, x, y, col);

      } while (!key[KEY_ESC]);
```

Another useful function

The following function reads a string from the keyboard and displays the echo in graphic mode at position (x,y), color c and background b:

```
void   get_string(char *str, int x, int y, int c, int b)
{
char   ascii, scan, s[2];
int    i = 0;

       do {
           get_keycodes(&scan, &ascii);
           if (scan != KEY_ENTER) {
               s[0] = ascii;       // put ascii in s for echoing
               s[1] = '\0';
               textout_ex(screen, font, s, x, y, c, b); // echo
               x = x + 8;
               str[i++] = ascii;  // insert character in string
           }
       } while (scan != KEY_ENTER);
       str[i] = '\0';
}
```

Reading variables

In graphic mode, numeric data must be first read as a string and then converted into variables using **sscanf**.

sscanf(s, "format", var, …);

like scanf, but reads data from string s and stores them according to parameter format in the subsequent variables.

In graphic mode, the string s can be read using the function **get_string()** previously shown.

NOTE: **get_keycodes()** and **get_string()** are NOT Allegro functions and must be explicitly defined.

Reading variables

The following code reads a float from the keyboard and stores it in the variable x:

```
char   str[20];       // string for data input
float  x;             // float to be read as input

  textout_ex(screen, font, "x: ", 10, 30, 3, 0);  // prompt
  get_string(str, 34, 30, 3, 0);    // read data with echo
  sscanf(str, "%f", &x);      // convert string into float
```

Mouse functions

install_mouse() installs the Allegro mouse manager, which updates the following global variables:

mouse_x	mouse **x** coordinate
mouse_y	mouse **y** coordinate
mouse_b	state of the buttons: bit 0 ⇒ Left button; bit 1 ⇒ Right button; bit 2 ⇒ Middle button

Mouse functions

The following code draws a yellow trace when we press the left button of the mouse, until the ESC key is pressed:

```
int   x, y;
int   col = 14;          // yellow color

      install_keyboard();
      install_mouse();
      do {
          if (mouse_b & 1) {
              x = mouse_x;
              y = mouse_y;
              putpixel(screen, x, y, col);
          }

      } while (!key[KEY_ESC]);
```

Mouse functions

enable_hardware_cursor()

The mouse cursor is drawn by the operating system (not by Allegro). This way is faster, but some Allegro functions cannot be used.

show_mouse(screen)	displays the mouse on the screen.
show_mouse(NULL)	disables the mouse visualization.

position_mouse(x, y)	set the mouse to the specified screen position. It does not work if hardware cursor is enabled.

Mouse functions

NOTE:
Mouse visualization can interfere with graphics functions, hence when drawing graphics it is better to disable mouse visualization using **scare_mouse()** and **unscare_mouse()**:

```
      if (mouse_b & 1) {
            x = mouse_x;
            y = mouse_y;
            scare_mouse();
            putpixel(screen, x, y, col);
            unscare_mouse();
      }
```

Changing the mouse icon

set_mouse_sprite(myicon)	replace the mouse icon with the specified BITMAP.
set_mouse_sprite_focus(x, y)	set the mouse focus at the specified position (x, y).

```
BITMAP* mic;

        // load the new icon from file
        mic = load_bitmap("newicon.bmp", NULL);

        // set the new icon and focus
        set_mouse_sprite(mic);
        set_mouse_sprite_focus(MFX, MFY);

        position_mouse(MX0, MY0);
        show_mouse(screen);
```

Bitmaps

Allegro functions are not restricted to write to the screen; they can write to a **bitmap**.

A **bitmap** is block of memory used as a virtual screen with a given width and height.

To create a bitmap you have to:

1. create a pointer to the BITMAP type defined in Allegro;
2. allocate the memory using **create_bitmap**.

```
BITMAP  *buffer;      // pointer to the bitmap
int     width = 640;
int     height = 480;

        buffer = create_bitmap(width, height);
```

Using bitmaps

When a **bitmap** is created, it is not empty (black), so it needs to be initialized:

```
clear_bitmap(buffer);
clear_to_color(buffer, color);
```

They clear the bitmap with color 0, or with a given color.

Then, a **bitmap** can be written like the screen. For example:

```
putpixel(buffer, x, y, color);
circle(buffer, x, y, r, color);
line(buffer, x1, y1, x2, y2, color);
```

Bitmap dimensions

Once created, the dimensions of a **bitmap** can be accessed through its pointer by reading the corresponding fields of the BITMAP structure:

`buffer->w`	contains the bitmap width
`buffer->h`	contains the bitmap height

The dimensions of the **screen** bitmap can be accessed by:

`SCREEN_W`	contains the screen width
`SCREEN_H`	contains the screen height

Destroying bitmaps

After usage, the bitmap memory can be de-allocated by:

```
destroy_bitmap(buffer);
```

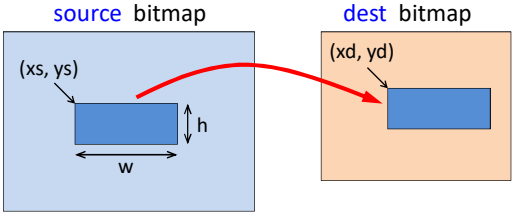
The operating system automatically reclaims bitmap memory on exit, so you do not need to call **destroy_bitmap** on every bitmap that has been created or loaded.

However, it is very important to call **destroy_bitmap** on temporary bitmaps created within functions, otherwise the application may run out of memory.

Copying bitmaps

```
blit(source, dest, xs, ys, xd, yd, w, h);
```

BLIT stands for "**BL**ock **I**mage **T**ransfer", hence this function copies a rectangular area of the source bitmap to the dest bitmap:



Copying bitmaps

In this example, a buffer is first created with the same size of the screen. Then, we can draw everything on the buffer and then copy it to the screen:

```
BITMAP *buf;       // pointer to the buffer

   buf = create_bitmap(SCREEN_W, SCREEN_H);

   // after writing something on the bitmap
   // you can copy it on the screen by

   blit(buf, screen, 0, 0, 0, 0, buf->w, buf->h);
```

This technique, known as **double buffering**, is used to avoid flickering due to the video refresh mechanism.

Sprites

A **sprite** is a small bitmap that is part of a bigger bitmap.

If you have a file called fish.bmp, you can load the image into a bitmap using **load_bitmap**:

fish.bmp

BITMAP ***load_bitmap**(**char** *filename, NULL);

It creates a bitmap (allocating memory) and writes it with the contain of the specified file. It returns the pointer to the bitmap, or NULL if there is an error. The second argument is a pointer to the color palette, but can be set to NULL if not used.

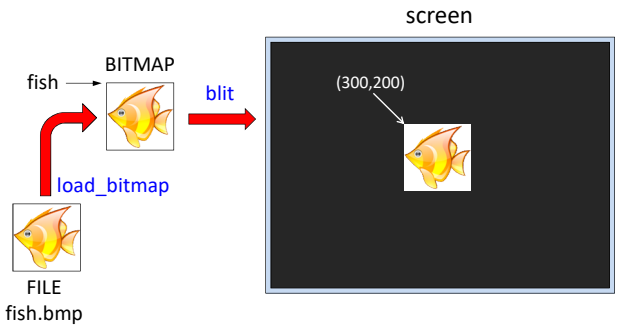
Loading sprites

The following code loads a sprite from the file fish.bmp and displays it on the screen at position (x, y):

```
BITMAP *fish;      // pointer to bitmap
int    x = 300;
int    y = 200;

   fish = load_bitmap("fish.bmp", NULL);

   if (fish == NULL) {
       printf("file not found\n");
       exit(1);
   }

   blit(fish, screen, 0, 0, x, y, fish->w, fish->h);
```

Loading sprites

The result of the previous piece of code is the following:



Saving sprites

int **save_bitmap**(**char** *file, **BITMAP** *bmp, **RGB** *pal);

Saves a sprite pointed by bmp and the corresponding palette pal into the specified file.

```
BITMAP   *bmp;
PALETTE  pal;

   get_palette(pal);   // get current palette

   mysprite = create_bitmap(width, height);

   // draw something in mysprite

   save_bitmap("mysprite.bmp", mysprite, pal);
```

Handling transparency

In many cases, we would like some pixels of the sprite to be transparent, so we can see the background scene:

Handling transparency

```
draw_sprite(screen, fish, x, y);
```

Draws the fish bitmap on the screen at position (x, y).

It is similar to **blit**(fish, screen, 0, 0, x, y, fish->w, fish->h), but it uses a masked drawing mode where transparent pixels are skipped, so the background image will show through the masked parts of the sprite.

- In 8-bit (VGA) mode, transparent pixels are marked by **0**.
- In truecolor modes they are marked with the color makecol(255, 0, 255), corresponding to **bright pink**.

How to make pink background

This code loads a sprite with white background, converts white pixels into pink, and saves the new sprite into a file:

```
BITMAP   *fish, *fishp;          // pointers to bitmap
PALETTE   pal;                   // color palette
int      x, y, c;
int      pink, white;

         white = makecol(255, 255, 255);
         pink  = makecol(255,   0,   255);

         fish  = load_bitmap("fish.bmp", NULL);
         fishp = create_bitmap(fish->w, fish->h);

         for (x=0; x<fish->w; x++)
              for (y=0; y<fish->h; y++) {
                   c = getpixel(fish, x, y);
                   if (c == white) c = pink;
                   putpixel(fishp, x, y, c);
              }
         get_palette(pal);
         save_bitmap("fishp.bmp", fishp, pal);
```

How to make pink background

If the background is not perfectly white, you can convert the colors in HSV and replace them depending on the value V:

```
int      x, y, c;
int      pink;
float    hue, sat, val;

         for (x=0; x<fish->w; x++)
              for (y=0; y<fish->h; y++) {

                   c = getpixel(fish, x, y);
                   rgb_to_hsv(getr(c), getg(c), getb(c),
                              &hue,    &sat,    &val);

                   val = val * 255;
                   if (val >= 240) c = pink;
                   putpixel(fishp, x, y, c);
              }

         get_palette(pal);
         save_bitmap("fishp.bmp", fishp, pal);
```

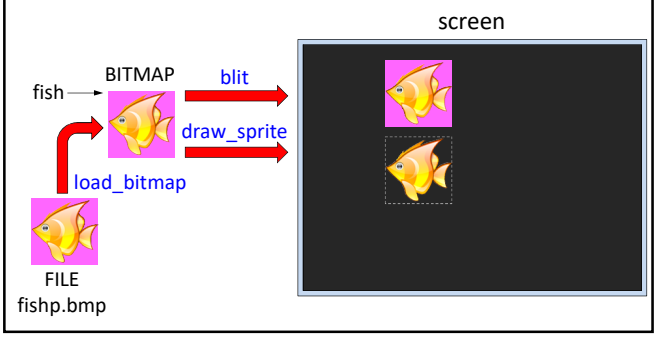
Visualizing sprites

The following code loads the sprite from the file fishp.bmp and displays it on the screen in two different modes:

```
BITMAP *fish;     // pointer to bitmap
int    x = 300;
int    y = 50;

   fish = load_bitmap("fishp.bmp", NULL);
   if (fish == NULL) {
       printf("file not found\n");
       exit(1);
   }

   blit(fish, screen, 0, 0, x, y, fish->w, fish->h);
   draw_sprite(screen, fish, x, y+200);
```

Handling transparency

Here is the result: while **blit** prints all pixels as they are, **draw_sprite** interprets pink pixels as transparent.



Other functions on bitmaps

```
draw_sprite_v_flip(bmp, sprite, x, y);
draw_sprite_h_flip(bmp, sprite, x, y);
draw_sprite_vh_flip(bmp, sprite, x, y);
```

They are similar to **draw_sprite**, but in addition flip the image vertically, horizontally, or both, respectively.

```
stretch_sprite(bmp, sprite, x, y, width, height);
```

It is similar to **draw_sprite**, but stretches the image to the specified width and height.

Other functions on bitmaps

rotate_sprite(bmp, sprite, x, y, angle);

It draws the sprite image on the bitmap. The image is first placed with its top-left corner at the specified position, then rotated by the specified angle around its centre.

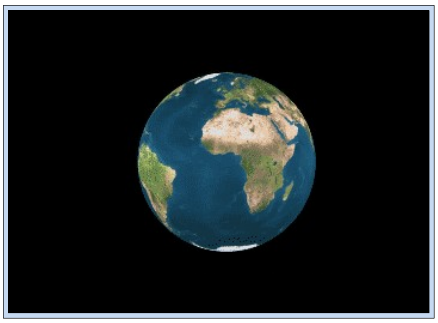
For efficiency reasons, the angle is specified as a fixed point number, where 256 is equal to a full circle.

Conversion can be done by **itofix**(n) or **ftofix**(x). Positive angles correspond to clockwise rotations. For example the following function makes a clockwise rotation of 45 degrees:

```
rotate_sprite(screen, fish, x, y, itofix(32));
```

Sprite sequences

Playing cyclic sequences of sprites can make effects like this:



Sprite sequences

The following code draws a new sprite every period in a cyclic sequence of N images:

```
#define N   12              // number of images

BITMAP   *earth[N];         // array of bitmap pointers
char     filename[N][20];   // array of strings of 20 chars
int      i;

         for (i=0; i<N; i++)    // load images
              earth[i] = load_bitmap(filename[i], NULL);

         i = 0;
         while (1) {
             draw_sprite(screen, earth[i], x, y);
             i = (i+1)%N;
             wait_for_period(task_index);
         }
}
```

Playing sound

Allegro allows you to play two types of audio files:

- wave files (consisting in a sequence of audio samples);
- MIDI files (consisting in a sequence of MIDI commands).

To do that, you have to initialize the sound module:

int **install_sound**(**int** digi, **int** midi, **const char** *cfg_path);

Initializes the sound module. The first two parameters are normally DIGI_AUTODETECT and MIDI_AUTODETECT. This allows the user to select different values with the setup utility. The cfg_path parameter is only present for compatibility with previous versions of Allegro and has no effect, so can be set to 0.
It returns 0 if the sound is successfully installed, -1 on failure.

Playing samples

SAMPLE ***load_sample**(**const char** *filename);

Loads a sequence of audio samples from the specified file, allocates into memory and returns its pointer. It supports both mono and stereo WAV and mono VOC files, in 8 or 16-bit formats, as well as formats handled by functions register_sample_file_type().

int **play_sample**(**SAMPLE** *s,
int vol, **int** pan, **int** freq, **int** loop);

Plays sample s at the specified volume, pan, and frequency. Volume and pan values range from 0 (min/left) to 255 (max/right). Frequency value is relative: 1000 represents the frequency that the sample was recorded at, 2000 is twice this, etc. If loop is not zero, the sample will repeat until you call stop_sample(), and can be manipulated while it is playing by calling adjust_sample().

Playing samples

int **adjust_sample**(**SAMPLE** *s,
int vol, **int** pan, **int** freq, **int** loop);

Alters the parameters of a sample while it is playing. You can alter the volume, pan, and frequency, and can also clear the loop flag, which will stop the sample when it next reaches the end of its loop. The parameters are same as those used in play_sample(). If the sample is not playing it has no effect.

void **set_volume**(**int** digi_volume, **int** midi_volume);

Specifies volumes for both digital samples and MIDI playback, as integers from 0 to 255. A negative value leaves it unchanged.

void **stop_sample**(**SAMPLE** *s);

Stops playing a sample.

Playing samples

The following code loads the file "tune.wav" and start playing it.

```
SAMPLE *sample;

       allegro_init();
       install_sound(DIGI_AUTODETECT, MIDI_AUTODETECT, 0);

       sample = load_sample("tune.wav");
       if (tune == NULL) {
            printf("ERROR ON LOADING WAVE FILE\n");
            exit(1);
       }

       play_sample(sample, 255, 128, 1000, 0);
```

Playing MIDI

To play MIDI files you first need to do the following:

1. Download the file:
   http://www.eglebbk.dds.nl/program/download/digmid.dat
2. Copy it into the directory of your program
3. Rename it into patch.dat

Playing MIDI

MIDI *load_midi(const char *filename);

Loads a MIDI file, allocates it into memory ad returns its pointer, or NULL on error. Remember to free this MIDI file later to avoid memory leaks. It handles both Type 0 and Type 1 MIDI formats.

- In Type 1 file parts are saved on different tracks in the sequence.
- In Type 0 file everything is merged onto a single track.

int play_midi(MIDI *m, int loop);

Starts playing the specified MIDI file, first stopping whatever music was previously playing. If the loop flag is set to non-zero, the data will be repeated until replaced with something else, otherwise it will stop at the end of the file. Passing a NULL pointer will stop whatever music is currently playing. It returns non-zero if an error occurs.

Playing MIDI

The following code loads the file "tune.mid" and start playing it.

```
MIDI   *tune;

       allegro_init();
       install_sound(DIGI_AUTODETECT, MIDI_AUTODETECT, 0);

       tune = load_midi("tune.mid");
       if (tune == NULL) {
            printf("ERROR ON LOADING MIDI\n");
            exit(1);
       }

       play_midi(tune, 0);
```

Playing MIDI

void midi_out(unsigned char *data, int length);

Streams a block of MIDI commands into the player, allowing you to trigger notes over the MIDI file that is currently playing.

void load_midi_patches();

Forces the MIDI driver to load the entire set of patches ready for use. It has to be called before sending any program change messages via the midi_out() command.

void stop_midi();

Stops playing a midi sequence. It has the same effect as play_midi(NULL, 0).