NAME

xil_histogram_get_nbands, xil_histogram_get_nbins, xil_histogram_get_limits, xil_histogram_get_values, xil_histogram_get_info – histogram attributes

SYNOPSIS

```
#include <xil/xil.h>

unsigned int xil_histogram_get_nbands ( XilHistogram histogram);

void xil_histogram_get_nbins ( XilHistogram histogram,
        unsigned int *nbins);

void xil_histogram_get_limits ( XilHistogram histogram,
        float *low_value,
        float *high_value);

void xil_histogram_get_values (XilHistogram histogram,
        unsigned int *data);

void xil_histogram_get_info ( XilHistogram histogram,
        unsigned int *nbands,
        unsigned int *nbins,
        float *low_value,
        float *high_value);
```

DESCRIPTION

These routines read the values of histogram attributes and the intensity-level information stored in the histograms. Histograms are used to obtain information about the distribution of pixel values in an image. Create histograms with **xil_histogram_create**(3).

xil_histogram_get_nbands() returns the number of bands represented by the *histogram.* For example, a histogram with three bands can be thought of as a cube of data, with each axis representing a single band.

xil_histogram_get_nbins() fills in a user-supplied array, *nbins,* with values representing the number of *histogram* bins for each histogram band.

xil_histogram_get_limits() fills in user-supplied arrays, *low_value* and *high_value,* with floating point numbers that represent the value of the first bin and last bin in each band.

xil_histogram_get_values() fills in the user-supplied array, *data,* with the unsigned integer values that make up the histogram data. The data are aligned so that values along the first band's axis are contiguous.

xil_histogram_get_info() combines the function of other attribute functions. *nbands* is filled with the number of bands in the histogram; *nbins* is filled with the number of bins per band, one for each band. *low_value* and *high_value* are arrays that contain the low and high values for each band.

ERRORS

For a complete list of XIL error messages by number, consult Appendix B of the *XIL Programmer's Guide.*

EXAMPLES

Create an array to hold the histogram data and retrieve the data:

```
XilHistogram histogram;
unsigned int nbands;
unsigned int *bins, *data;
int i, total_entries;

nbands = xil_histogram_get_nbands (histogram);
bins = (unsigned int*) malloc(nbands * sizeof(unsigned int));
xil_histogram_get_nbins (histogram, bins);
total_entries = 1;
for (i=0; i<nbands; i++)
        total_entries *= bins[i];
data = (unsigned int*) malloc(total_entries * sizeof(unsigned int));
xil_histogram_get_values(histogram, data);
```

SEE ALSO

xil_histogram(3), **xil_histogram_create**(3), **xil_histogram_destroy**(3).