Subject: Histogram
Posted by James[1] on Tue, 28 Jun 2005 16:24:17 GMT
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Hi guys !

I have a question regarding histograms in general. Is there a "right"
criteria (e.g. strict matmematical rule, etc..) of chosing the bin size ?
I'm playing with some data and obviously the histogram looks differently
with different bin sizes. Any help and references would be extremely
helpful !

Cheers,
James

Subject: Re: Histogram
Posted by R.G. Stockwell on Fri, 01 Jul 2005 18:37:27 GMT
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"James" <adelante@bigmir.net> wrote in message
news:op.ss286rraljbjj6@pc008427.hq.eso.org...
> Hi guys !
>
> I have a question regarding histograms in general. Is there a "right"
> criteria (e.g. strict matmematical rule, etc..) of chosing the bin size ?
> I'm playing with some data and obviously the histogram looks differently
> with different bin sizes. Any help and references would be extremely
> helpful !
>
> Cheers,
> James

It depends on what question the histogram is supposed to answer.

Obviously larger bins will have a smoother appearance, but
perhaps normalizing the bins, so that it is a density rather than a
mere count would help it look more similar for different bin sizes.

(i.e. divide the count in each bin by the binsize)

Cheers,
bob

Subject: Re: histogram
Posted by David Fanning on Tue, 11 Aug 2009 17:17:05 GMT
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rinceboy writes:

> I'm using IDL to make and overplot histograms of temperature. I create
> the first histogram from my first dataset and plot it. Then I overplot
> another histogram from the second dataset. I use a common binsize of 5
> degreesK for both. My problem is that the bin-bounds don't align e.g.
> for my first histogram, say, a 5K bin is aligned between 20-25K,
> however for the second dataset the 5K bin is aligned between 22-27K.
>
> My question is: how to I have a common bin-alignment between the two
> datasets?

Set the MIN and MAX keywords on the two HISTOGRAM
commands to the same values.

Cheers,

David

--
David Fanning, Ph.D.
Coyote's Guide to IDL Programming (www.dfanning.com)
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: histogram
Posted by rinceboy on Wed, 12 Aug 2009 11:00:16 GMT
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Won't including a max and min unrealisticaly skew the histogram by
introducing false data? e.g. the first dataset ranges between (-50:22)
and the second between (-70:24). By using teh same max and min, say
-70 and 24 then you're biasing both histograms

On Aug 11, 6:17 pm, David Fanning <n...@dfanning.com> wrote:
> rinceboy writes:
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>> the first histogram from my first dataset and plot it. Then I overplot
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> commands to the same values.
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> Cheers,
>
> David
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> --
> David Fanning, Ph.D.
> Coyote's Guide to IDL Programming (www.dfanning.com)
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: histogram
Posted by jameskuyper on Wed, 12 Aug 2009 13:15:42 GMT
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rinceboy wrote:
> Won't including a max and min unrealisticaly skew the histogram by
> introducing false data? e.g. the first dataset ranges between (-50:22)
> and the second between (-70:24). By using teh same max and min, say
> -70 and 24 then you're biasing both histograms

No. All it does is change the boundaries of the bins. Why do you think
that would introduce a bias?

Subject: Re: histogram
Posted by rinceboy on Wed, 12 Aug 2009 14:12:19 GMT
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its just that when I change the max/min limits the histogram changes
shape. But I've realised that its to do with the binsize and thus
alignment with the bin boundaries

Thanks!

On Aug 12, 2:15 pm, James Kuyper <jameskuy...@verizon.net> wrote:
> rinceboy wrote:
>> Won't including a max and min unrealisticaly skew the histogram by
>> introducing false data? e.g. the first dataset ranges between (-50:22)
>> and the second between (-70:24). By using teh same max and min, say
>> -70 and 24 then you're biasing both histograms
>
>

> No. All it does is change the boundaries of the bins. Why do you think
> that would introduce a bias?

Subject: Re: histogram
Posted by Maxwell Peck on Mon, 29 Mar 2010 10:08:53 GMT
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On Mar 25, 4:17 pm, afzu <afzal....@gmail.com> wrote:
> cud anybody help me implement Histogram Equalization using
> Neighborhood Metrics

I'm not exactly what you're doing but take a look at ADAPT_HIST_EQUAL.
From the help:

The ADAPT_HIST_EQUAL function performs adaptive histogram equalization, a form of automatic image contrast enhancement. The algorithm is described in Pizer et. al., "Adaptive Histogram Equalization and its Variations.", Computer Vision, Graphics and Image Processing, 39:355-368. Adaptive histogram equalization involves applying contrast enhancement based on the local region surrounding each pixel. Each pixel is mapped to an intensity proportional to its rank within the surrounding neighborhood. This method of automatic contrast enhancement has proven to be broadly applicable to a wide range of images and to have demonstrated effectiveness.

Regards

Max

Subject: Re: Histogram
Posted by David Fanning on Mon, 11 Oct 2010 13:51:47 GMT
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silje writes:

> I'm trying to get a grip of the Histogram function in IDL, but have
> run into a problem that I don't understand. As you can see from the
> code below I have created an array with six differend elements,but
> when I call HISTOGRAM with a binsize equal to 0.1 then it seems like
> 1.2 and 1.3 is put in the same bin. Why is this?

Because your numbers are falling on the Razor's Edge:

http://www.dfanning.com/math_tips/razoredge.html

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Histogram
Posted by David Grier on Mon, 11 Oct 2010 14:16:08 GMT
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On 10/11/10 9:39 AM, silje wrote:
> Hey!
> I'm trying to get a grip of the Histogram function in IDL, but have
> run into a problem that I don't understand. As you can see from the
> code below I have created an array with six differend elements,but
> when I call HISTOGRAM with a binsize equal to 0.1 then it seems like
> 1.2 and 1.3 is put in the same bin. Why is this?
>
>
> IDL> arr = [1.1,1.2,1.3,1.4,1.5,1.6]
> IDL> print, HISTOGRAM(FLOAT(arr), binsize=0.1)
> 1 2 1 1 1
>
>
> Thanks!
> Best regards Silje

This question hinges on (1) where HISTOGRAM places the origin of
its bins and (2) the representation of floating point numbers.
If you explicitly specify where you want the bins to start, then
HISTOGRAM does what you were expecting:

IDL> print, HISTOGRAM(arr, binsize=0.1, min=1.05)
1 1 1 1 1

The command you tried automatically set the origin of the first bin
to 1.1. Each data point then falls right on the dividing line between
two bins. Which way they should fall is clear in decimal notation.
The answer can be different when the same numbers are represented at
finite numerical precision. Your example exercises this distinction.
Here's why:

IDL> print, 1.1 + 2.*0.1 - 1.3
1.19209e-7

which is not zero. Therefore, your third data point falls into the
second bin because of round-off error.

Doing the same calculation in double precision "solves" the problem
IDL> print, 1.1d + 2.d*0.1d - 1.3d
0.0000000

TTFN,

David

Subject: Re: HISTOGRAM
Posted by on Wed, 23 Jan 2013 11:26:47 GMT
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Den onsdagen den 23:e januari 2013 kl. 12:12:54 UTC+1 skrev dave poreh:
> Folks,
>
> HI,
>
> I am trying to plot:
>
> IDL> hist = HISTOGRAM(x(2,*),MIN = -400, MAX =100, BINSIZE = 4)
>
> % Program caused arithmetic error: Floating illegal operand
>
> Turns out, with cg's everything is ok.
>
> Can you please help me?
>
> Cheers,
>
> Dave

If everything is ok, what do you need help for?

Subject: Re: HISTOGRAM
Posted by Helder Marchetto on Wed, 23 Jan 2013 11:44:27 GMT
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On Wednesday, January 23, 2013 12:12:54 PM UTC+1, dave poreh wrote:
> Folks,

>
> HI,
>
> I am trying to plot:
>
> IDL> hist = HISTOGRAM(x(2,*),MIN = -400, MAX =100, BINSIZE = 4)
>
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>
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>
> Can you please help me?
>
> Cheers,
>
> Dave

I'm not a histogram expert, but I had problems for badly defined BINSIZEs.
If you read cgHistoplot help/definition of binsize you will find:
"I've tried to protect you from most of the bad things"
And:
"While it is pointed out in the HISTOGRAM documentation, it is extremely important that the BINSIZE be of the same data type as the data you are going to calculate the histogram of."

You put in binsize 4. Are your data integers? If not you might have a look at that...

Cheers,
Helder

Subject: Re: HISTOGRAM
Posted by d.poreh on Wed, 23 Jan 2013 13:06:35 GMT
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On Wednesday, January 23, 2013 3:44:27 AM UTC-8, Helder wrote:
> On Wednesday, January 23, 2013 12:12:54 PM UTC+1, dave poreh wrote:
>
>> Folks,
>
>>
>
>> HI,
>
>>
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>
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>
>
>
> You put in binsize 4. Are your data integers? If not you might have a look at that...
>
>
>
> Cheers,
>
> Helder

Thanks Helder,
It was data type problem, and now working:)

Cheers,
Dave