Subject: Re: Equivalent of EXCEL LINEST function?
Posted by Med Bennett on Thu, 19 Apr 2001 19:16:22 GMT
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I believe the IDL function is REGRESS or REGRESSION, I haven't checked lately though.

Bruce Bowler wrote:

> I'm probably just having a brain cramp but I can't figure out how to do
> something that seems as simple as the EXCEL function LINEST.
>
> Basically, I have an X vector and a Y vector and I want to find the
> linear "best fit" function, the r^2 of that fit, and the standard errors
> of all the parameters. (I could do it all by writing my own routines,
> but I'm *SURE* that someone has already done it, you know, steal from
> your friends :-)
>
> Thanks!
> Bruce

Subject: Re: Equivalent of EXCEL LINEST function?
Posted by Bruce Bowler on Fri, 20 Apr 2001 18:05:44 GMT
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So it is... now for "stupid question #347" (tm).

How do I turn a vector (which is what I have for x) into an array?

```
help, x
x  float  = array[12345]
help, y
y  float  = array[12345]
weight = replicate(1.0,n_elements(y))
help, weight
weight  float  = array[12345]
result = regress(x,y,weight,/relative_weight)
% REGRESS: Incompatable arrays.
```

Looking at the code for regress, the only condition I violate to cause that message is that my X is only 1 dimenesion, not 2...

Hey it's late Friday and my brain is mush, I can't see straight, and my back hurts, what can I say???

Bruce

Med Bennett wrote:
>
> I believe the IDL function is REGRESS or REGRESSION, I haven't checked
> lately though.
>
> Bruce Bowler wrote:
>
>> I'm probably just having a brain cramp but I can't figure out how to do
>> something that seems as simple as the EXCEL function LINEST.
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>> of all the parameters. (I could do it all by writing my own routines,
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>> your friends :-)
>>
>> Thanks!
>> Bruce

Subject: Re: Equivalent of EXCEL LINEST function?
Posted by Craig Markwardt on Sat, 21 Apr 2001 00:30:05 GMT
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Bruce Bowler <bbowler@bigelow.org> writes:
> So it is... now for "stupid question #347" (tm).
>
> How do I turn a vector (which is what I have for x) into an array?
>
> help, x
> x float = array[12345]
> help, y
> y float = array[12345]
> weight = replicate(1.0,n_elements(y))
> help, weight
> weight float = array[12345]
> result = regress(x,y,weight,/relative_weight)
> % REGRESS: Incompatable arrays.
>
> Looking at the code for regress, the only condition I violate to cause
> that message is that my X is only 1 dimenesion, not 2...

Probably you want to REFORM the vector into an array (= reform(x,1,n))

However using REGRESS may be like killing a fly with a shotgun, a bit
of overkill.

Why not use LINFIT and CORRELATE, which standard IDL functions?

p = linfit(x,y, sigma=dp)   ;; DP are parameter uncertainties
r2 = correlate(x,y)

Done!

Craig

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Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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Subject: Re: Equivalent of EXCEL LINEST function?
Posted by Bruce Bowler on Mon, 23 Apr 2001 20:09:56 GMT
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Craig Markwardt wrote:
> However using REGRESS may be like killing a fly with a shotgun, a bit
> of overkill.
>
> Why not use LINFIT and CORRELATE, which standard IDL functions?
>
> p = linfit(x,y, sigma=dp)   ;; DP are parameter uncertainties
> r2 = correlate(x,y)

Jeopardy style answer...

what is "because the IDL documentation stinks?"

I wanted to regress 2 vectors so I go into the online help in 5.3 (which is what I'm using) and type regress. Up pops the REGRESS function. No where does the REGRESS help mention LINFIT or CORRELATE.

After "rolling my own", I find them and they do (almost) what I want. They don't (like LINEST in excel, or "my own") provide standard errors of the coefficents, the constant and Y estimate and a few other little bits.

Subject: Re: Equivalent of EXCEL LINEST function?
Posted by Craig Markwardt on Mon, 23 Apr 2001 20:46:55 GMT
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Bruce Bowler <bbowler@bigelow.org> writes:
> I wanted to regress 2 vectors so I go into the online help in 5.3 (which
> is what I'm using) and type regress. Up pops the REGRESS function. No
> where does the REGRESS help mention LINFIT or CORRELATE.

I agree, I was a little surprised that the REGRESS docs didn't mention LINFIT, since LINFIT is the degenerate case of one dimension.

> After "rolling my own", I find them and they do (almost) what I want.
> They don't (like LINEST in excel, or "my own") provide standard errors
> of the coefficents, the constant and Y estimate and a few other little
> bits.

Umm, here I think I have to disagree. The SIGMA keyword provides the errors of the coefficients, as my example showed. The R^2 constant is directly from CORRELATE, so I'm not sure your complaint here. And finally,

```
YFIT = A*X + B
```

Sometimes things are simple enough that having a canned procedure to do them is overkill. :-)

Craig

--

Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response