Bits & Bytes

Arkansas' Premier Computer Club

September 2020 r1

Bella Vista Computer Club - John Ruehle Center

Highlands Crossing Center, 1801 Forest Hills Blvd Suite 208 (lower level), Bella Vista, AR 72715

Website: http://BVComputerClub.org **Email: editor@bvcomputerclub.org**

COVID-19 VIRUS ADJUSTMENTS

During normal times all meetings are on the lower level of the Highlands Crossing Center in Bella Vista. For the month of September we will continue to suspend in-person meetings and classes and conduct on-line meetings using Zoom over the Internet.

To attend a Zoom meeting or class, you need Internet access and a device with the Zoom application installed.

MEETINGS

(Online) Board Meeting: September 14, 6pm, using Zoom

(Online) General Meeting: September 14, 7pm, "**Another Pass at LastPass**", presented by Woody Ogden: Another look at the LastPasss password manager. Zoom meeting access information will be emailed to membership the weekend before. Visitors or Guests may obtain Zoom meeting connection info from our Membership Chair at membership@bvcomputerclub.org .

Genealogy SIG: **CANCELED for September.** (3rd Saturday).

HELP CLINICS

No September Help Clinics at John Ruehle center

Members may request Remote Help on our website at https://bvcomputerclub.org at menu path Member Benefits ►Remote Help .

MEMBERSHIP

Single membership is $25; $10 for each additional family member in the same household. Join by mailing an application (from the web site) with check, or complete an application and pay at any meeting.

It is now also possible to Join or Renew membership on line on our website at https://bvcomputercub.org at menu path Get Involved ►Join/Renew . Payment may be by Credit Card, or, if you have a PayPal account, by whatever means you have defined on PayPal.

CLASSES

None yet scheduled for September

Advance sign up required for each listed class: Contact Grace: email to edu@bvcomputerclub.org, text 469-733-8395, call 479-270-1643, or sign up at the General Meeting. Classes are **free to Computer Club members.** Class access information will be emailed to those signed up for the class the day before class.

Check the monthly calendar and announcements for any last minute schedule changes at http://bvcomputerclub.org .

OFFICER ELECTION

At the August 10 General Meeting, there were no nominations from the floor and the membership elected the following officers to serve from Sept 2020 through August 2021:

President - Joel Ewing
Vice President - Woody Ogden
Secretary – Lori Obrenovich
Treasurer – Ron Moffett

The following Board Member was elected to serve from September 2020 through August 2022:

Board position (2022) – Barbara Maybury

We especially wish to thank our newest officer Lori for agreeing to serve BVCC.

DATE FIELDS IN SPREADSHEETS

By Joel Ewing, Presidnet
Bella Vista Computer Club
president (at) bvcomputerclub.org

Spreadsheet cells that contain text values, currency numeric values, and ordinary numeric values are fairly straight forward. What you see is pretty much what you've got. Text values are essentially any character sequence. Numeric values are limited to digits and a few special characters, with limited formatting options as to how many decimal places should be displayed, and whether a currency symbol should be present.

True date values within a cell are actually "numeric" values as well, but the many date-specific formatting options that control the way they are displayed, including user-customized formats, can display the value in ways that are easily confused visually with ordinary text cell values. It is even possible to have a text value in a cell that looks identical to a formatted date value, but which behaves quite differently; so this can be a source of confusion for many spreadsheet users.

Since visually a date stored in a cell as a text value can be made to appear much the same as a date stored as a date value, why have a special format type for dates? The main reason is that it is very useful to be able to sort spreadsheet columns or rows in date-order. If the dates are represented by text values, proper sorting is only possible for dates in a consistent, all-numeric year-month-day format, like yyyy-mm-dd, which may not be the preferred date appearance. It may also be desirable to have some validity checking that the values actually represent a legitimate date, or to be able to calculate the day offset between two dates. That can be very difficult to do if the date is represented as a text value.

How Date Values are Stored

Examples were checked out using LibreOffice Calc and MS Office 2016 Excel. There are some subtle differences in MS Excel, but the behavior is mostly similar, if not identical, for common usage.

Cell values formatted as dates use sequential integer values internally to represent sequential dates. Comparing Excel 2016 with LibreOffice Calc 6.3.6.2 reveals a date representation difference which is actually a bug in Office 2016: While both represent date 9/1/2020 with 44075 and date 12/31/9999 with 2958465, in Excel 2016, day 1 is 1/1/1900, while by default in LO Calc day 1 is 12/31/1899! How can this be?

It turns out Excel 2016 by default is incorrectly counting 1900 as a leap year, which it is not (1900 is divisible by 4 and 100 but not divisible by 400), and counts 2/29/1900 as a valid day making days before that off by one when viewed by Calc. To fix this bug and keep the same day 1/1/1900 as day 1 could cause valid dates 3/1/1900 and after in all existing Excel spreadsheets to change by one day – probably not a wise choice. Calc designers opted to fix the leap year inconsistency with minimal impact by shifting day 1 to 12/31/1899, so all date calculations would be correct and spreadsheets imported from Excel XLSX formats would only have the 1-day-off problem for valid dates in the range 1/1/1900 to 2/28/1900 (a subtle compatibility issue). As an alternative, if you allow Excel 2016 to do the conversion to ODS format (Calc native format)) by saving a spreadsheet from Excel as an ODS file, it actually does a fairly decent job of resolving dates affected by the bug so that even in the range 1/1/1900 – 2/28/1900 display correctly and only an invalid date 2/29/1900 gets changed (to 2/28/1900).

It turns out another difference between Excel and LO Calc is that Calc will also allow you to represent dates prior to 12/31/1899 by using zero and negative integers internally, although one should understand it would not make sense to use this for dates prior to the adoption of the Gregorian Calendar (which happened on different dates in different countries). Excel 2016 will not accept dates earlier than 1/1/1900 as a date value, and if entered, they are just treated as a text string.

While there are some standard date display formats provided (like "09/01/20"; "09/01/2020"; "Tuesday, September 1, 2020"; "Sep 1, 2020"; etc.) it is also possible to make up your own display format choosing different specifications to display the day-of-the week (Tue, Tuesday), date-of-the-month (1, 01), month (9, 09, Sep, September), and year (20, 2020), in an order of your choice and with various separator symbols. One common date display format not provided by default is the International Standard (ISO) date format , but that can be specified by a custom format of yyyy-mm-dd .

One of the consequences of this numeric internal representation of dates is that arithmetic can be performed on dates: You can add +1 to a date value in a cell to get the next day in sequence; you can subtract two dates to determine the number of days between the dates. Such arithmetic operations are invalid on text fields that just look like a date, the values in cells must actually be formatted as a date. When using a "Fill Series…" action on consecutive cells that are formatted as date values, you also have the option of choosing to increment the the cells in the series by day, month or year component of the date.

Another consequence of internal date representation is that if you use spreadsheet functions that compare two cells containing date values, the values may look the same visually but actually be different and be unequal – for example, both 9/1/2020 and 9/1/1920 when displayed in format mm/dd/yy will display as "09/01/20", but their internal numeric values are different and they will be found unequal.

It is also possible that two cells containing the same date value could be formatted to display differently, so that visually they look different, but will compare as equal and behave identically in formulas. For example, a date of

"9/1/2020" could be formatted as "mmm/dd/yy (Sep/01/20) in one place and as "mmmm" (September) in another, which look very different but would compare equal because both are actually the same numeric value (44075 for 9/1/2020) under the covers.

Entering Date Values

Dates may be entered in the format mm/dd/yyyy, yyyy-mm-dd, mm/dd/yy (but see below caution), or even as mm/dd or some special format you have defined (like "sep 2020"

The forms with a full 4-digit year are safest for any date not in the current year. If the form mm/dd is used the current year will be assumed. If the form mm/dd/yy is used for a date, you could be getting a different year than intended. When only a two-digit year is specified, the program uses a 100-year window to assume what year is meant. For the current version of Calc and for Excel 2016, a 100-year window with a base at 1930 is currently used, so a year of 30 through 99 will be assumed to mean 1930 – 1999, and a year of 00 – 29 will be taken as 2000 – 2029. This window base value could change in future versions of the spreadsheet applications, or it may be a floating window that always includes 9 years into the future, but the rules could change and could be different in Excel than in LibreOffice Calc. You would need to verify that two-digit years are getting the intended year. Note this is only an issue when entering date values. Once entered, the internal representation of the date represents a specific 4-digit year, even if the display format only shows two digits.

With a customized date format of "mmm-yyyy", it is even possible to input a date like 'sep 2020" without specifying a day of month. In that case day 1 ("09/01/2020") will be assumed. Attempting to enter date values with too little information for Calc to be sure it's a date may result in the value being interpreted as a text value or an ordinary numeric value.

Working With Date Values

If (out of curiosity) you want to display the actual numeric value used to represent a date value, the function "VALUE( )" may be used. If cell B23 contains a date value, the formula "=VALUE(B23)" in another cell formatted as numeric will display the integer associated with the date. You can also just change the cell format from "date" to "numeric" to see the associated numeric value, and changing the format back to "date" will re-display the value as a date.

If somehow you get a cell value that was intended to be a date value but which has been stored as a text value, the DATEVALUE( ) function may be used to convert a text version of a date into the corresponding numeric value (which will display as a date if the cell is formatted as a date). Getting dates stored in a cell as text seems to occur most frequently when building spreadsheets from CSV files. The visual clue this has happened is that text values in a spreadsheet cell are by default left-justified, while date and other numeric values are by default right-justified. The other big clue is that sorting a column of text values results in alphabetic ordering while true date values will sort in date order. If a cell "B5" contains a text value version of a date, the formula =DATEVALUE(B5) in another cell formatted as a date will convert the text value to a true date value and display it formatted as a date.

There are spreadsheet functions that will allow you to split out the individual components of a date value (DAY(), MONTH(), YEAR()) and work with those components individually. There is another function DATE() which

allows building a date value by specifying the individual year, month, and day values for the date. For example, if cell B28 contains the date value for 01/14/2012, the function

```
=DATE(YEAR(B28),MONTH(B28),1)-1
```

will generate the date for the first of that month (01/01/2012) and then subtract 1 day to give the last day of the preceding month (12/31/2011).

BVCC FISCAL YEAR 2019 FINANCIAL REPORT

2019-2020 Fiscal Year Ending Income/Expense Report

	September 1, 2019	August 31, 2020	Difference
	$16,878.93	$15,364.45	-$1,514.48
Income			
Dues	$2,360.00	$2,602.98	$242.98
Donations	$289.86	$740.61	$450.75
AARP(Recycle Center)	$2,340.00	$321.00	-$2,019.00
Interest	$160.36	$57.84	-$102.52
Other	$410.00	$781.04	$371.04
Total	$5,560.22	$4,503.47	-$1,056.75
Expenses			
Rent	$4,920.00	$4,920.00	$0.00
Internet	$1,219.63	$1,200.00	-$19.63
Web hosting	$211.38	$150.70	-$60.68
Lab phone	$45.44	$45.44	$0.00
Insurance	$425.00	$425.00	$0.00
Safe Dep Box	$28.00	$28.00	$0.00
Advertising	$65.00	$0.00	-$65.00
Equipment	$0.00	$0.00	$0.00
Supplies	$95.25	$0.00	-$95.25
Software	$0.00	$0.00	$0.00
APCUG dues	$50.00	$50.00	$0.00
Other	$15.00	$0.00	-$15.00
Total	$7,074.70	$6,819.14	-$255.56
Ending Balance	$15,364.45	$13,048.78	
Net Gain/Loss		**-$2,315.67**	**-$2,315.67**