

QGIS Application - Bug report #19844

Flaw in qgsround() in some circumstances

2018-09-13 08:22 PM - Andrea Giudiceandrea

Status:	Closed	
Priority:	High	
Assignee:	Nyall Dawson	
Category:	Map Tools	
Affected QGIS version:	3.3(master)	Regression?: Yes
Operating System:	unspecified	Easy fix?: No
Pull Request or Patch supplied:		Resolution:
Crashes QGIS or corrupts data:		Copied to github as #: 27668
Description		
<p>qgsround() is defined in qgis.h (since 3.0) as</p> <pre>inline double qgsRound(double number, double places) { int scaleFactor = std::pow(10, places); return static_cast<double>(static_cast<qlonglong>(number * scaleFactor + 0.5)) / scaleFactor; }</pre> <p>and it seems only used by QgsUnitTypes:: scaledDistance and scaledArea which are used in turn by QgsUnitTypes/QgsDistanceArea formatDistance/formatArea and then by the homonymous ones of QgsMeasureDialog and QgsMapToolIdentify.</p> <p>It seems to me that there is a flaw in qgsRound which leads to inconsistent results of the Measure Tool in QGIS 3. (See the difference underlined in red in the screenshot at https://agjudiceandrea.github.io/QGIS330_3.PNG between segment length and total length values respectively rounded by QLocale().toString() and by formatDistance through qgsRound).</p> <p>In fact, 'scaleFactor' is declared as Int and thus it can store up to the 9th power of 10, consequently the rounding provides incorrect results from the 9th decimal place onwards.</p> <p>In QGIS 2.18 this problem is not present, since both formatDistance and formatArea rely on QString().arg(), which works similarly to QLocale().toString(), to round measurements, instead of on qgsRound() (which is also defined differently in 2.18 API).</p> <p>For further information: http://osgeo-org.1560.x6.nabble.com/QGIS-Developer-On-precision-in-qgsRound-3-3-0-master-td5377378.html and https://github.com/qgis/QGIS/pull/7836#issuecomment-419718554</p>		

Associated revisions

Revision f9015f38 - 2018-09-19 01:01 AM - Nyall Dawson

Make qgsRound more tolerant to large values

Fixes #19844

History

#1 - 2018-09-14 06:31 PM - Giovanni Manghi

- Priority changed from Normal to High

#2 - 2018-09-18 08:22 AM - Nyall Dawson

- Assignee set to *Nyall Dawson*
- Status changed from *Open* to *In Progress*

#3 - 2018-09-19 01:00 AM - Nyall Dawson

- % Done changed from *0* to *100*
- Status changed from *In Progress* to *Closed*

Applied in changeset commit:qgis|f9015f38a4283ff652d3253fbf062d5368497525.