QGIS Application - Bug report #17681
Negative values for age in expressions

2017-12-12 12:56 PM - Rombert Stapel

Status:	Closed		
Priority:	High		
Assignee:	Sandro Santilli		
Category:	Expressions		
Affected QGIS version:	2.18.14	**Regression?:**	No
Operating System:	Mac OS High Sierra	**Easy fix?:**	No
Pull Request or Patch supplied:	Yes	**Resolution:**	fixed/implemented
Crashes QGIS or corrupts data:	No	**Copied to github as #:**	25578

Description

In calculating the difference between two dates from a long list of starting and ending dates (from medieval period to now), some of the outcomes produce negative values:

DATEfrom DATEto AGE (in days)
1380-01-01 1515-12-31 -37
1100-01-01 1225-12-31 -3689
580-01-01 665-12-31 -18299
1612-01-01 1697-12-31 -18299

Whereas most other dates do provide correct ages (>90%):
1001-01-01 1199-12-31 23339
1814-01-01 2016-12-31 24434

The expression used here is: day(age("DATEto","DATEfrom")). Is this a bug?

Associated revisions

Revision 336995dc - 2017-12-19 07:11 PM - Sandro Santilli

Allow age expression to represent time intervals above 130 years (#5914)

Uses a 64bit integer instead of 32bit one for seconds,
meaning about 584 billions of years rather than 136...

Closes #17681

Includes test

History

#1 - 2017-12-19 08:29 AM - Andreas Neumann

- Priority changed from Normal to High

Seems to be a serious issue to me.

Calculations that provide wrong results are always bad.

#2 - 2017-12-19 08:46 AM - Sandro Santilli

- Assignee set to Sandro Santilli

- Status changed from Open to In Progress

I'm looking at this, starting from the existing unit test tests/src/core/testqgsexpression.cpp (run via output/bin/qgis_expressiontest).
The test in there puts later day first, but I'm not sure yet about the test code semantic:

```
day(age(to_date('2004-03-22'),to_date('2004-03-12')))
```

#3 - 2017-12-19 09:10 AM - Sandro Santilli

I'm guessing it's an overflow of `int` type used to compute seconds between the dates.
The first age you report as working has 4291574400, max integer is 4294967296.
The first non-working age has 6279724800 seconds, so turns to negative.
I'm working on adding an automated test for this.

#4 - 2017-12-19 12:44 PM - Sandro Santilli

- Pull Request or Patch supplied changed from No to Yes

Pull request ready for test: https://github.com/qgis/QGIS/pull/5914
Andreas: can you give that a try ?

#5 - 2017-12-19 07:10 PM - Sandro Santilli

- Status changed from In Progress to Closed

- % Done changed from 0 to 100

Applied in changeset commit:qgis|336995dc30f4409520b65a0007e2cea6966f7599.

#6 - 2018-02-22 11:42 AM - Giovanni Manghi

- Resolution set to fixed/implemented