QGIS Application - Bug report #777
crashes with python reference to destroyed objects (e.g exportToWkt() crashes when geom has been deleted)

2007-10-07 08:37 PM - crschmidt -

Status:	Closed		
Priority:	High		
Assignee:			
Category:	Python plugins		
Affected QGIS version:	master	**Regression?:**	No
Operating System:	All	**Easy fix?:**	No
Pull Request or Patch supplied:	No	**Resolution:**	
Crashes QGIS or corrupts data:	Yes	**Copied to github as #:**	10836

Description

When a feature is destroyed, if it has ownership over a geometry, it deletes that geometry. After that point, if one tries to call functions on the geometry, it will return nulls (Linux) or cause a KERN_PROTECTION_FAILURE (OS X).

This can be reproduced by selecting a feature, then typing the following into the Python console:

iface.activeLayer().selectedFeatures()r0.geometry().exportToWkt()

(Sometimes it requires calling it twice to reproduce the crash -- however, it will never return the correct answer.)

The reason for this appears to be that the feature created when it is pulled out of the list is then destoryed before exportToWkt() is called, taking the geometry with it.

A workaround is to instead call geometryAndOwnership(), which tells the feature to not destroy the geometry.

It seems like this problem may actually be exportGeosToWkb -- functions like wkbType() fail in the same way. It's possible that the mGeometry check at the beginning of these functions needs to move before teh exportGeosToWkb(), or that the exportGeosToWkb() needs to more resilient against being deleted.

Related issues:

Related to QGIS Application - Bug report # 10755: Python Console crashes when...	**Closed**	**2014-06-30**
Duplicated by QGIS Application - Bug report # 7228: Incorrect return on bound...	**Closed**	**2013-02-24**
Duplicated by QGIS Application - Bug report # 9185: Crash when perform some c...	**Closed**	**2013-12-09**
Duplicated by QGIS Application - Bug report # 13084: Segfault when accessing ...	**Closed**	**2015-07-06**
Duplicated by QGIS Application - Bug report # 14320: Qgis crashes when trying...	**Closed**	**2016-02-17**

Associated revisions

Revision bd7d9133 - 2016-08-01 08:25 AM - Nyall Dawson

Refine QgsFeature geometry getters/setters

All pointer based methods have been removed.

Now we have only:

```
void setGeometry( const QgsGeometry& geom )
```

and

```
QgsGeometry geometry() const
```

Benefits include avoiding a whole lot of tricky pointer lifetime
issues, potential memory leaks, and finally closing #777, which
has survived for over 9 years!...

Impacts on PyQGIS code:
- no more need for the messy
  g = QgsGeometry(feature.geometry())
  workaround, just use g = feature.geometry() instead
- IMPORTANT: you can no longer test whether a feature has geometry
 using `if f.geometry():`, since QgsFeature::geometry() will
always return an object. Instead, use
 `if not f.geometry().isEmpty():`, or preferably the new method
 `if not f.hasGeometry():`

Fix #777

History

#1 - 2007-10-11 06:03 PM - Martin Dobias

The problem here is in python bindings because the scenario seems to be like this:
 1. get feature
 2. store geometry's reference in Python
 3. feature is deleted (together with geometry)
 4. reference in Python still exists, but the object it's pointing to doesn't

I'm trying to find out how to cope with this correctly...

Martin

#2 - 2008-08-29 02:27 AM - Jürgen Fischer

see also #1248

#3 - 2009-07-30 05:40 AM - Giovanni Manghi

Hi,

what is the status of this issue?

cheers

#4 - 2009-12-01 11:52 PM - Jürgen Fischer

see also #2173

#5 - 2010-06-12 12:24 AM - Paolo Cavallini

Still true?

#6 - 2010-06-12 12:42 AM - Martin Dobias

This haven't been fixed yet

#7 - 2010-07-24 04:29 PM - Giuseppe Sucameli

No crashes in my Ubuntu 9.04, but I never get the correct results.

I tried wkbType() on the same selected geometry a lot of times and I get different (and also strange) results:
0, 16777216, 7, 187101, 92, 143587, ...

#8 - 2011-12-16 01:59 PM - Giovanni Manghi

- Target version changed from Version 1.7.0 to Version 1.7.4

#9 - 2011-12-23 08:09 AM - Giovanni Manghi

- Pull Request or Patch supplied set to No
- Crashes QGIS or corrupts data set to Yes
- Affected QGIS version set to master

#10 - 2012-04-16 06:22 AM - Paolo Cavallini

- Target version changed from Version 1.7.4 to Version 1.8.0

#11 - 2012-09-04 12:03 PM - Paolo Cavallini

- Target version changed from Version 1.8.0 to Version 2.0.0

#12 - 2012-12-30 09:46 AM - Giovanni Manghi

- Priority changed from Low to High

#13 - 2013-02-24 10:19 AM - Matthias Kuhn

Fix in pull request !#436

Not sure if it's the best way to do it.
Maybe a reference counter or the like could also help to overcome this problem. But I'm not sure how easy it is to do mixed ref-counting between python and C++?

#14 - 2014-01-30 11:43 PM - Paolo Cavallini

- Target version changed from Version 2.0.0 to Future Release - High Priority

#15 - 2016-06-22 06:34 AM - Jürgen Fischer

- Assignee deleted (Martin Dobias)

#16 - 2016-08-01 04:23 PM - Nyall Dawson

- Status changed from Open to Closed

Fixed in changeset commit:"bd7d913379b68a8104608b1afab4d380e4edc26b".