QGIS Application - Bug report #14494
geometry.intersection() does not work properly in this case

2016-03-15 04:40 AM - Jesus Irigoyen

Status:	Closed			
Priority:	Normal			
Assignee:				
Category:	Geometry			
Affected QGIS version:	2.8.0	**Regression?:**	No	
Operating System:		**Easy fix?:**	No	
Pull Request or Patch supplied:		**Resolution:**	end of life	
Crashes QGIS or corrupts data:	No	**Copied to github as #:**	22469	

Description

When we try to intersect two linestring as shown in attached figure, we get a QGis.WKBUnknown geometry just because LString1 and LString2 do not intersect in a singular geometry but in a collection of geometries. As shown in the attached figure, the geometryCollection should be compound by two LineStrings and a Point.

But if LString2 starts inside the first segment of LString1 we get two Points and a LString as the result of the geometryCollection which is wrong.

History

#1 - 2016-03-15 04:48 AM - Jesus Irigoyen

- File bug.svg added

When we try to intersect two linestring as shown in attached picture, we get a QGis.WKBUnknown geometry just because LString1 and LString2 do not intersect in a singular geometry but in a collection of geometries. As shown in the attached figure, the geometryCollection should be compound by two LineStrings and a Point.

But if LString2 starts inside the first segment of LString1 we get two Points and a LString as the result of the geometryCollection which is wrong.

#2 - 2016-03-15 05:59 AM - Maximilian Krambach

AFAIK, the intersection works at vertices only
(a "line" intersection is created if at least two vertices of Line A and two vertices of line B intersect).

Thus, in your example, the left line intersects only once, resulting in a "point intersection". If the red line starts at a vertex of the blue line, the intersection would be a line.

#3 - 2016-03-15 08:15 AM - Jesus Irigoyen

- File bug1-1.svg added

- File bug1-2.svg added

Ok, it makes sense. After your explanation I have tried with the bug1-1.svg attached image and the result is: a Point and a Line where there should be two Points and a Line. However with file bug1-2.svg the result is a Point and two lines.

#4 - 2016-03-18 04:24 AM - Maximilian Krambach

- File nointersect.jpg added

Okay, I was partially wrong. The intersection also works on non-vertices, but only if line1 crosses line2. If they only touch, it seems to be the "vertex only" issue. I attached an example with vertices marked, which results in no geometry instead of a multiline.

#5 - 2016-04-09 10:07 AM - Giovanni Manghi

- Status changed from Open to Feedback

- Target version deleted (Future Release - High Priority)

better post the code as text, not in as an image, thanks.

#6 - 2016-05-23 05:38 AM - Giovanni Manghi

- Status changed from Feedback to Open

#7 - 2016-05-23 06:32 AM - Jukka Rahkonen

I would suggest to use WKT instead of images for easier reproducing. For example:
line 1:
LINESTRING (-40 340, 60 340, 100 260, 160 340, 300 340, 340 260, 360 380, 500 380)
line 2:
LINESTRING (-40 420, 0 340, 40 340, 100 380, 160 340, 200 380, 320 380, 360 420, 400 380, 460 380, 500 440)

Expected result:
GEOMETRYCOLLECTION (POINT (160 340), LINESTRING (0 340, 40 340), LINESTRING (400 380, 460 380))

#8 - 2017-05-01 01:05 AM - Giovanni Manghi

- Regression? set to No

- Easy fix? set to No

#9 - 2019-01-29 09:14 AM - Loïc BARTOLETTI

- Description updated

- Status changed from Open to Feedback

Do you still have this problem, I just tested with QGIS 3.4 and GEOS 3.6:

```
> g1 = QgsGeometry.fromWkt("LINESTRING ( -40 340, 60 340, 100 260, 160 340, 300 340, 340 260, 360 380, 500 380 )")
> g2 = QgsGeometry.fromWkt("LINESTRING ( -40 420, 0 340, 40 340, 100 380, 160 340, 200 380, 320 380, 360 420, 400 380, 460 380, 500 440 )")
> g1.intersection(g2)
<QgsGeometry: GeometryCollection (Point (160 340),LineString (0 340, 40 340),LineString (400 380, 460 380))>
```

#10 - 2019-03-09 03:12 PM - Giovanni Manghi

- Resolution set to end of life

- Status changed from Feedback to Closed

End of life notice: QGIS 2.18 LTR

Source:

http://blog.qgis.org/2019/03/09/end-of-life-notice-qgis-2-18-ltr/

Files

bug.pdf	6.4 KB	2016-03-15	Jesus Irigoyen
bug.svg	22.1 KB	2016-03-15	Jesus Irigoyen
bug1-1.svg	7.78 KB	2016-03-15	Jesus Irigoyen
bug1-2.svg	8.29 KB	2016-03-15	Jesus Irigoyen
nointersect.jpg	46.5 KB	2016-03-18	Maximilian Krambach