Versioning and tracking changes of vector data

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Data

- Where?
  - GIS data
- When?
  - Now?
- Who?
  - ???

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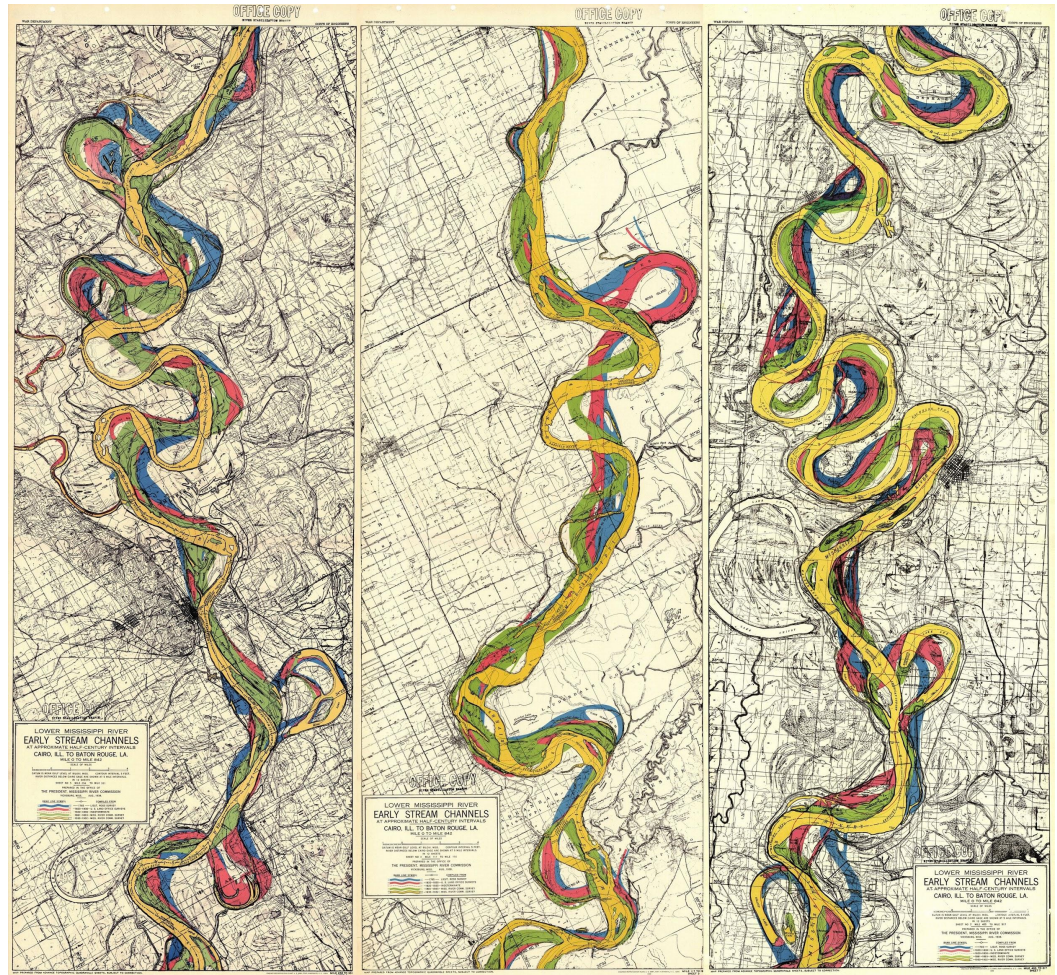CONSULTING

Meta-data

Data about data

- Is boring!
- Difficult to:
  - Capture
  - Manage
  - Discover

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Changing data

Harold Fisk, 1944. Map of courses of the Mississippi River (1765-1932) - via BLDGBLOG

Problems to solve

Problem...what problem?!

- Changelog
  - Geometry
  - Database
- Audit trails
  - Source of changes
- Managing data
  - Avoid duplication
- Collaborative work
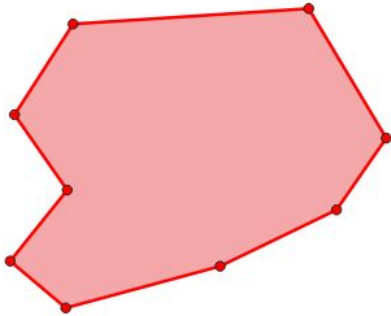- Data conflict resolution

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Geodiff

1. Start with a base vector
2. Modify data (geometry + database)
3. Changes:

```
geodiffinfo createChangeset
vector2 vector1 changeset.json
```

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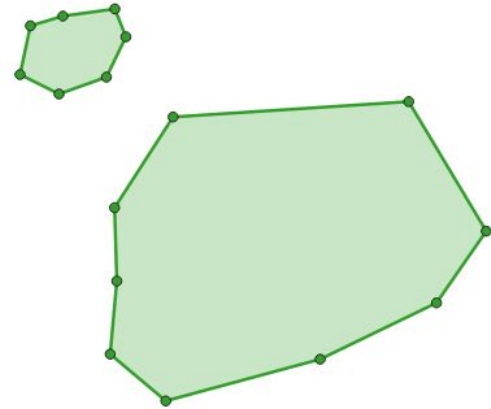
Detecting changes

Polygon 1

Name
poly1

Polygon 2

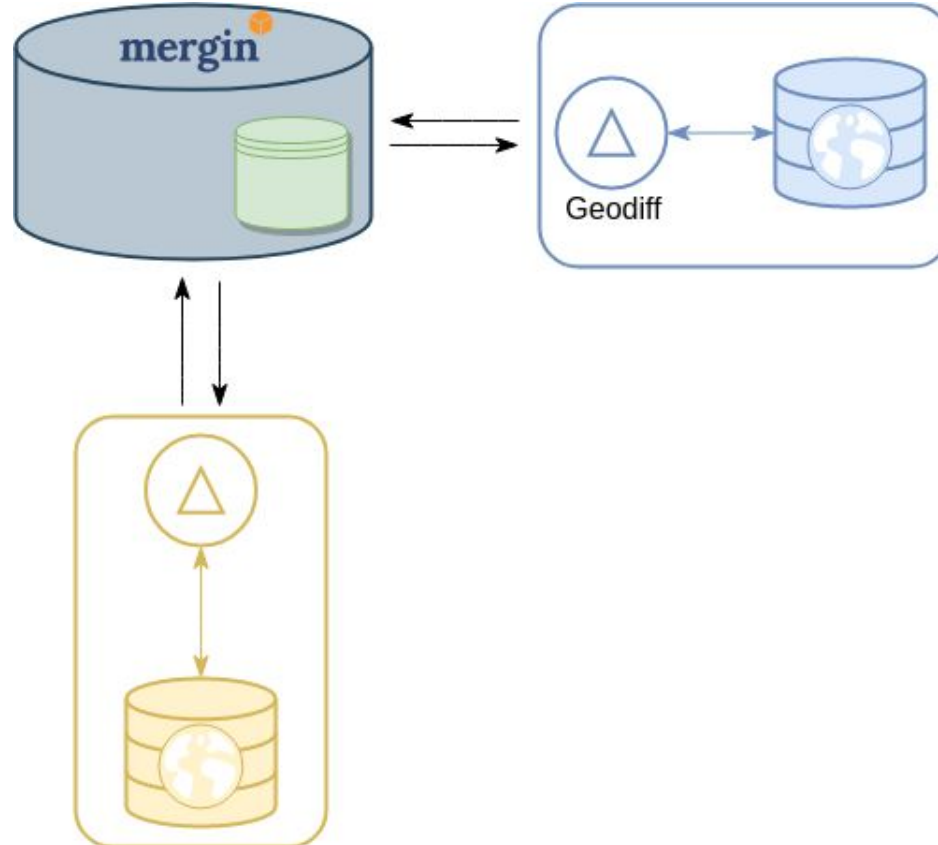| Name |
| --- |
| poly1b |
| poly2 |

Detecting Changes

```
"table": "vector1",
"type": "update",
"changes": [
  {
      "column": 0,
      "old": "1",
      "new": null
  },
  {
      "column": 1,
      "old": "MultiPolygon (((547334.3077 166204.2467, 544773.8624
      169867.1059, 547618.8017 174276.7618, 559069.6821 175023.5583,
      562839.2266 168729.1302, 560421.0283 165244.0797, 554766.7115
      162505.8256, 547263.1843 160478.8064, 544560.492 162754.7578,
      547334.3077 166204.2467)))",
      "new": "MultiPolygon (((544882.5701 166301.1835, 544773.8624
      169867.1059, 547618.8017 174276.7618, 559069.6821 175023.5583,
      562839.2266 168729.1302, 560421.0283 165244.0797, 554766.7115
      162505.8256, 547263.1843 160478.8064, 544560.492 162754.7578,
      544882.5701 166301.1835)))"
  },
  {
      "column": 2,
      "old": "poly1",
      "new": "poly1B"
```

```
"table": "vector1",
"type": "insert",
"changes": [
  {
      "column": 0,
      "old": null,
      "new": "2"
  },
  {
      "column": 1,
      "old": null,
      "new": "MultiPolygon (((542262.4611 179180.7554, 540684.0822
      178707.2417, 540179.001 176339.6733, 542073.0557 175392.646,
      544377.4889 176213.403, 545324.5162 178170.5929, 544787.8674
      179527.9987, 542262.4611 179180.7554)))"
  },
  {
      "column": 2,
      "old": null,
      "new": "poly2"
```

Geodiff: client and server side

Mergin

- Handle changes (server-side)
- Storage
- Authentication/authorization
- User-friendly interface
- Data sharing

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Data usage

Currently using 497.64 MB / 1000.00 MB   49%   Need more storage?

Projects (6)

CREATE   DELETE

	Name ↑	Last Update	Size
☐	**default**	🔒☁ 4 days ago	4.62 MB
☐	**Demo**		
☐	**From template**		
☐	**geomob**		

Projects > saber > tif_growing > history   ↻

Project History

Version	Created	Author	➕	🗑	✏	✖
v4	Tue, 08 Oct 2019 06:54:46 GMT	martinv	0	0	1	0
v3	Mon, 07 Oct 2019 13:09:32 GMT	martinv	0	0	1	0
v2	Mon, 07 Oct 2019 11:20:11 GMT	martinv	0	0	1	0
v1	Mon, 07 Oct 2019 11:09:45 GMT	martinv	7	0	0	0
v27	Fri, 04 Oct 2019 08:55:22 GMT	saber	0	0	1	0
v26	Fri, 04 Oct 2019 08:54:57 GMT	saber	0	0	1	0

Projects > saber > geomob > history > v10

Version

v10

Author

saber

Created

Tue, 08 Oct 2019 17:00:42 GMT

Files changes:

✏ Modified (1)

survey.gpkg: 136.00 kB

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Example use case

Mergin in action

For data collection from surveyors

Sources of changes:

- Desktop application (QGIS)
- Mobile (https//inputapp.io)

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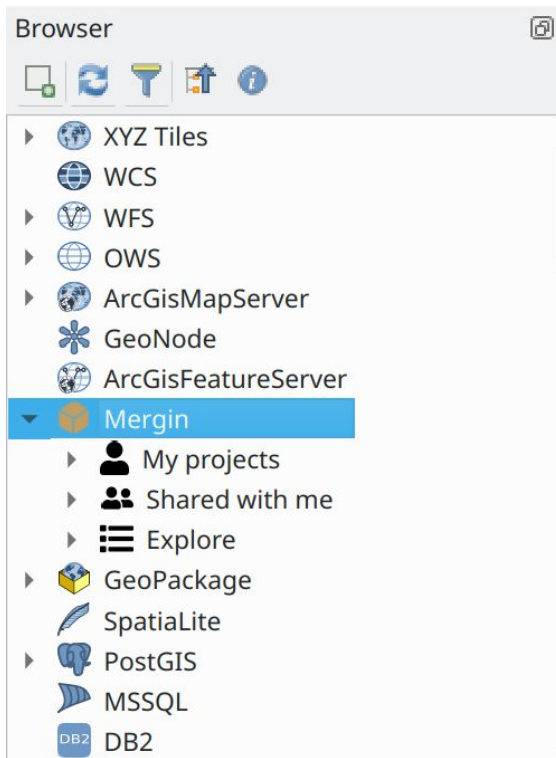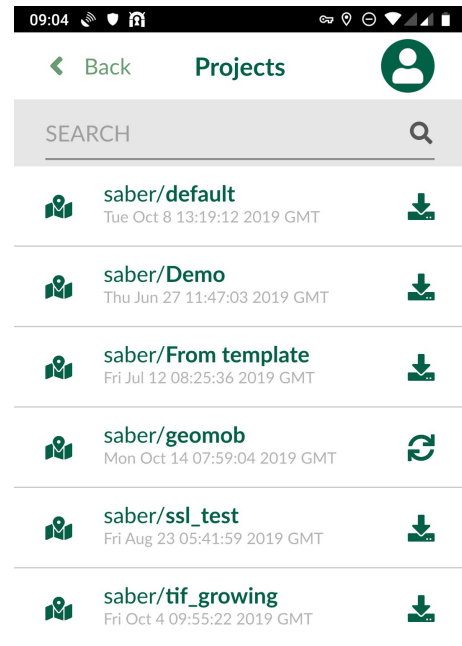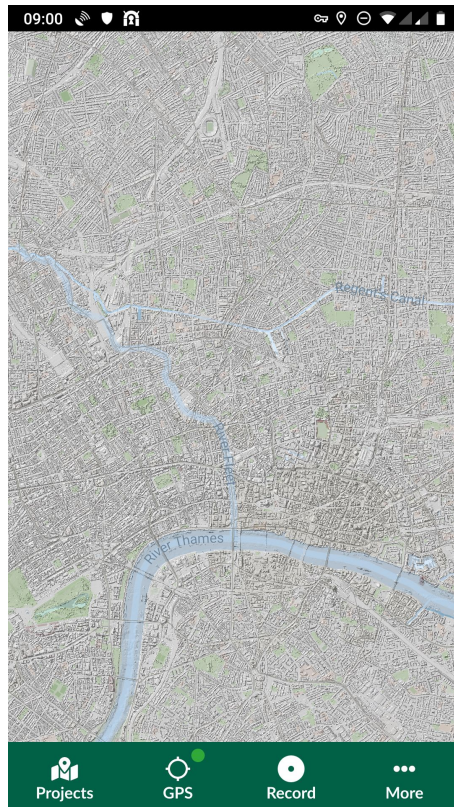CONSULTING
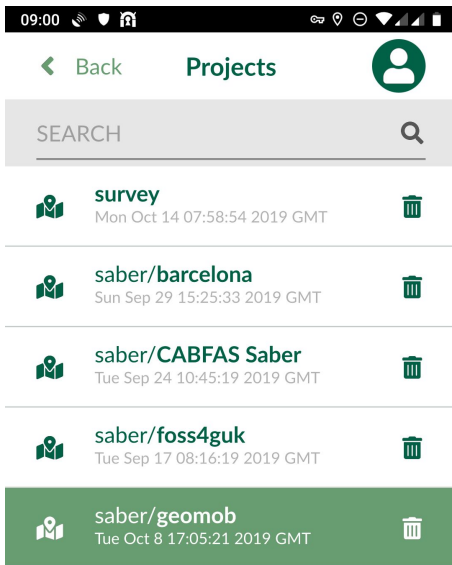
Using Mergin - data collection
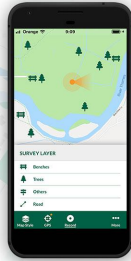
Mergin client: QGIS

Data from QGIS desktop

Mergin client in Input app

Added values

Using Mergin for field work

- Offline editing
- Versioning of non-geospatial data
- Easy synchronisation of datas

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Remaining features

- Visual presentation of changelogs
- Support for more formats

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