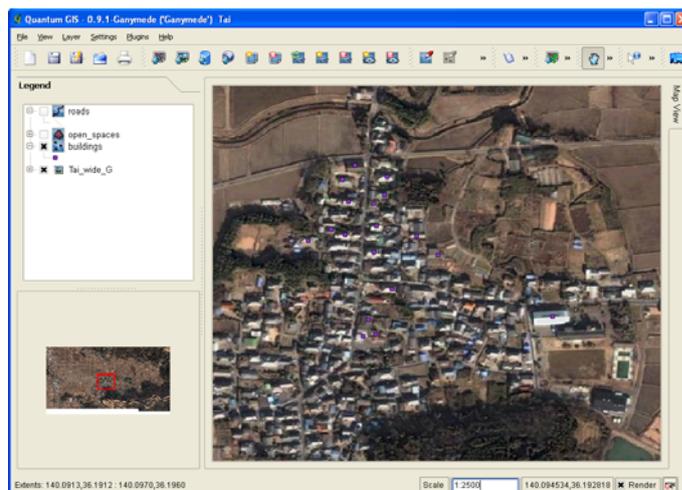
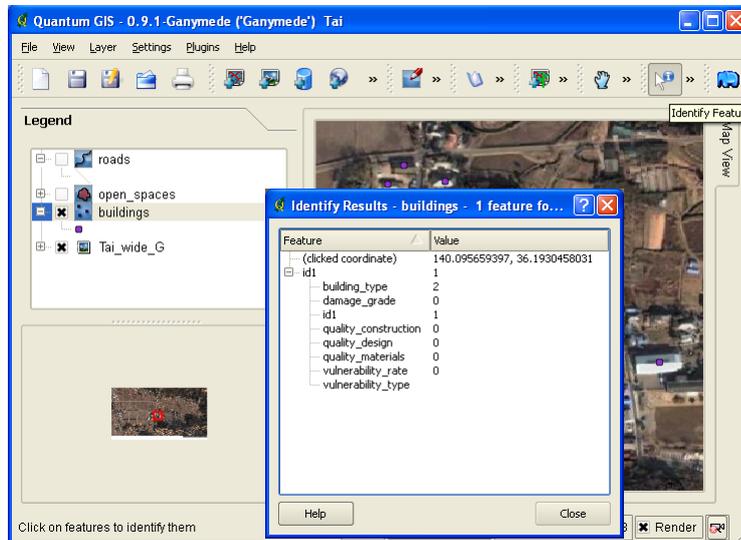


5 Extract the information of location from the geometry column of PostgreSQL table

Open QGIS and load PostGIS layer “buildings” and the raster layer “Tai_wide_G” (optional just to show the basemap).



Click on “Identify Feature” button. Then click on one of the mark on “buildings” layer.



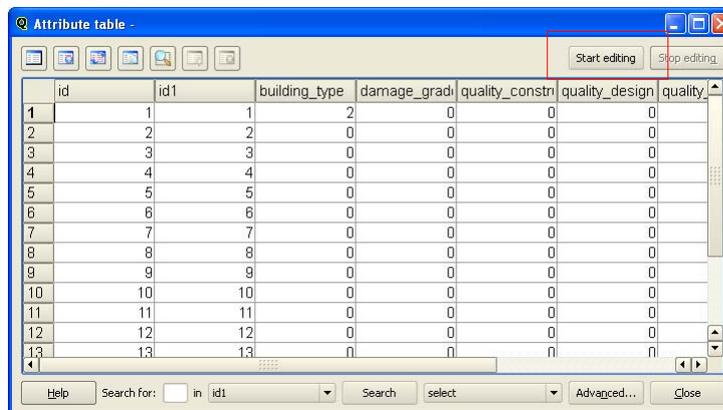
The information of location is shown. However, these values are not independently stored in table but included in “the_geom” column.

Add columns for latitude and longitude to PostGIS layer.

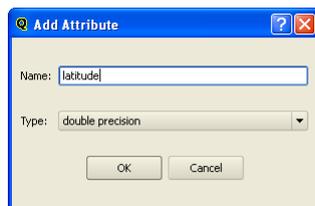
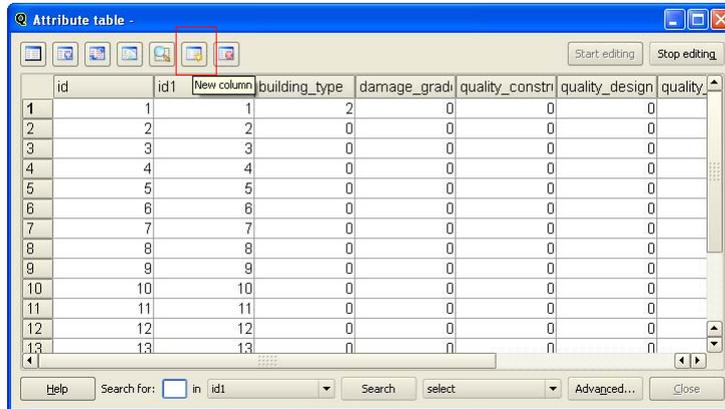


Click on “Open Table” button.

“Attribute Table” opens. Then click on “Start Editing” button.

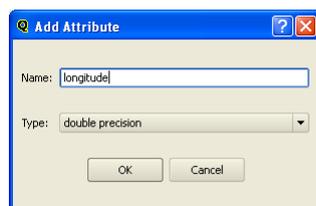


Click on “New Column” button.



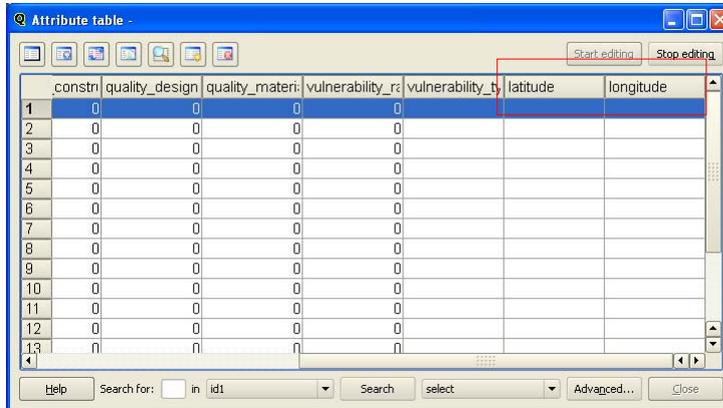
“Add Attribute” dialog opens.
Type in Name “latitude” with Type “double precision”.
Click on “OK”.

Click on “New Column” button of “Attribute Table” again.

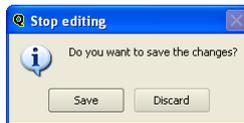


“Add Attribute” dialog opens.
Type in Name “longitude” with Type “double precision”.
Click on “OK”.

Use the horizontal slide bar to verify the addition of two new columns "latitude" and "longitude".



Click "Stop Editing" button.



Click on "Save".
Then click on "Close" button of "Attribute Table".

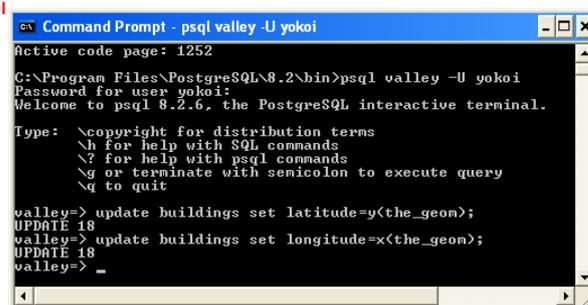
Store the values of latitude and longitude that are extracted from "the_geom" column.

Open "Command Prompt" of PostgreSQL.

Enter the target database:

`psql valley -U yokoi`

Type in the password.



Extract latitude and longitude from "the_geom" column and register them into "latitude" and "longitude" columns.

`update buildings set lat=y(the_geom);`

`update buildings set lon=x(the_geom);`

```

Command Prompt - psqt valley -U yokoi
valley=>
valley=> select id1,latitude,longitude from buildings;
id1 | latitude | longitude
-----|-----|-----
1 | 36.1930492473324 | 140.095648241203
2 | 36.1950089041812 | 140.093114946864
3 | 36.193841033101 | 140.094183845819
4 | 36.1948208571429 | 140.092956591463
5 | 36.1945357778471 | 140.093033834866
6 | 36.1948504969209 | 140.093526696812
7 | 36.1946189111874 | 140.093491068238
8 | 36.1945060873685 | 140.093360430132
9 | 36.1940904206672 | 140.093906734939
10 | 36.1942151206776 | 140.093396058706
11 | 36.1941082349544 | 140.092992268196
12 | 36.1941735540075 | 140.092808187228
13 | 36.1940251016142 | 140.092517220538
14 | 36.1938825873166 | 140.093354492036
15 | 36.1934016015624 | 140.093592015865
16 | 36.192789977702 | 140.093217915834
17 | 36.1928196681807 | 140.093384182514
18 | 36.1930037491484 | 140.093289172983
<18 rows>
valley=>

```

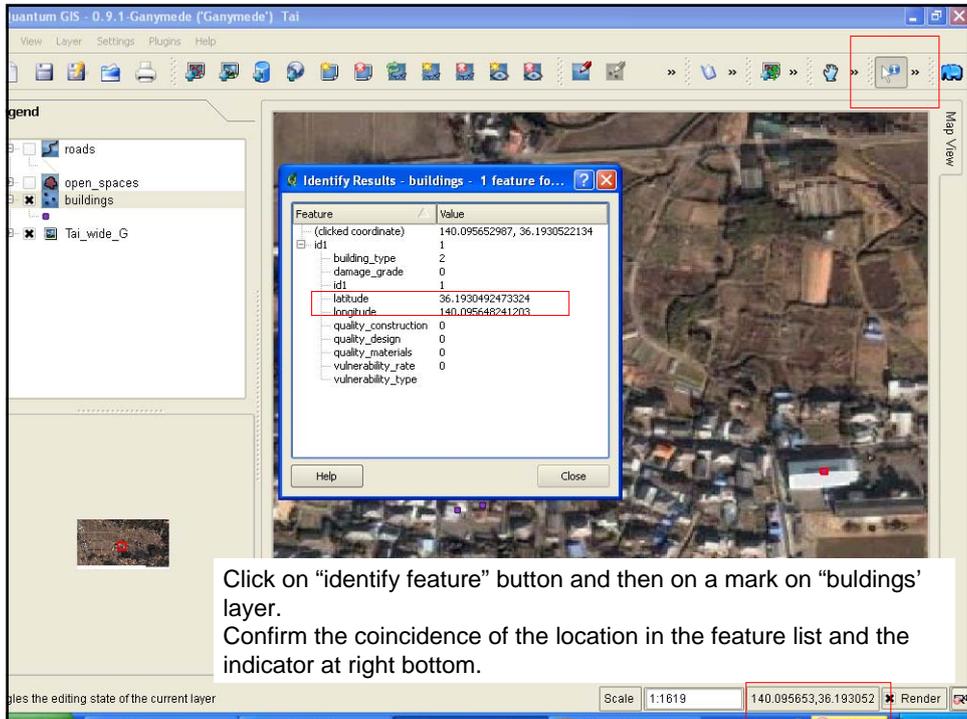
Confirm the data creation:

`select id1,latitude,longitude from buildings;`

Information of location is extracted from “the_geom” column and stored.

Leave from the database using “`¥q`”.

Close “command prompt” using “`exit`”.



Click on “identify feature” button and then on a mark on “buildings” layer.

Confirm the coincidence of the location in the feature list and the indicator at right bottom.

Note: The above slides explain the way to extract (latitude, longitude) of POINT data. It is possible to obtain the values of other coordinates. For example, the following commands provide the values of UTM projection.

```
update buildings set x_utm=x(transform(the_geom,32645));  
update buildings set y_utm=y(transform(the_geom,32645));
```

where "x_utm" and "y_utm" are the name of the columns that are added to the target table beforehand, "32645" denotes EPSG SRID code for PostGIS that corresponds to UTM zone 45N. The information about EPSG SRID can be shown in QGIS. "Setting" - "Project Properties". "Projection" tag, then "Projected Coordinate System" in "Spatial Reference System", then look for your projection system.

POINT data has its own location (latitude, longitude), whereas LINESTRING data and POLYGON data has many pairs of (latitude, longitude) that correspond to their nodes. These can not be stored in columns of fixed number.

Here, the information of coordinates for LINESTRING data and POLYGON data is stored in a column as a text string. It is guessed that these types are exported and imported among GIS software as files of vector layer format (e. g. Shape file) and that rarely the coordinates of their nodes are needed.

Quantum GIS - 0.9.1-Ganymede ('Ganymede') Tai

Identify Results - roads - 1 feature found

Feature	Value
(clicked coordinate)	140.093197838, 36.193539369
road_name	
(Derived)	
Length	0.004 degrees
id1	1
note	
pavement	1
road_category	2
road_name	

Select "roads" a layer of LINESTRING type.
When clicked on QGIS using "identify feature" button, the coordinates of the clicked point is shown.

Add columns for latitude and longitude to PostGIS layer.

Click on "Open Table" button.

"Attribute Table" opens. Then click on "Start Editing" button.

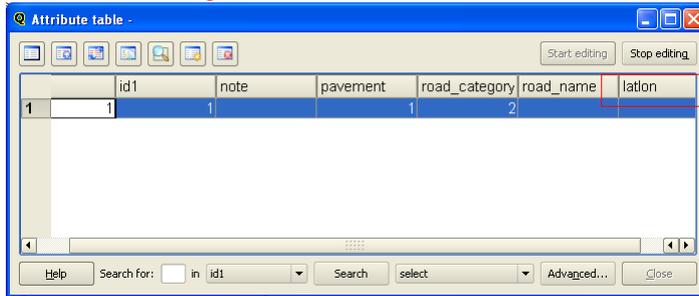
Then, Click on "New Column" button.

id	id1	note	pavement	road_category	road_name
1	1	1		1	2

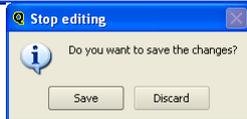


“Add Attribute” dialog opens.
Type in Name “latlon” with Type “text”.
Click on “OK”.

Use the horizontal slide bar to verify the addition of two new columns
“latitude” and “longitude”.



Click “Stop Editing” button.



Click on “Save”.
Then click on “Close” button of “Attribute Table”.

Store the series of (latitude, longitude) that are extracted from “the_geom” column.

Open “Command Prompt” of PostgreSQL.

Enter the target database:

`psql valley -U yokoi`

Type in the password.

```

Command Prompt - psql valley -U yokoi
Active code page: 1252
C:\Program Files\PostgreSQL\8.2\bin>psql valley -U yokoi
Password for user yokoi:
Welcome to psql 8.2.6, the PostgreSQL interactive terminal.
Type: \copyright for distribution terms
      \h for help with SQL commands
      \? for help with psql commands
      \g or terminate with semicolon to execute query
      \q to quit
valley=> update roads set latlon=astext(the_geom);
UPDATE 1
valley=> _

```

Extract the series of pairs (latitude, longitude) from “the_geom” column and register them into “latlon” column as a text string.

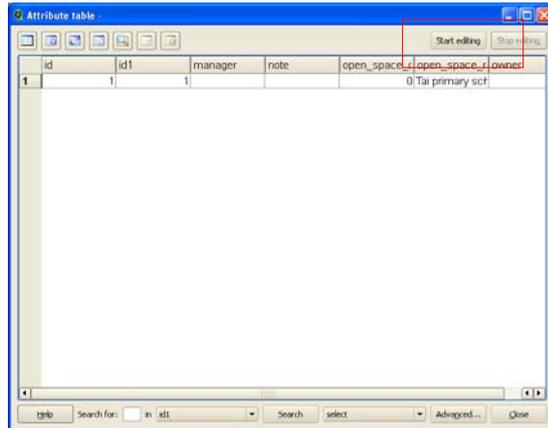
`update roads set latlon=astext(the_geom);`

Add columns for latitude and longitude to PostGIS layer.



Click on "Open Table" button.

"Attribute Table" opens. Then click on "Start Editing" button.

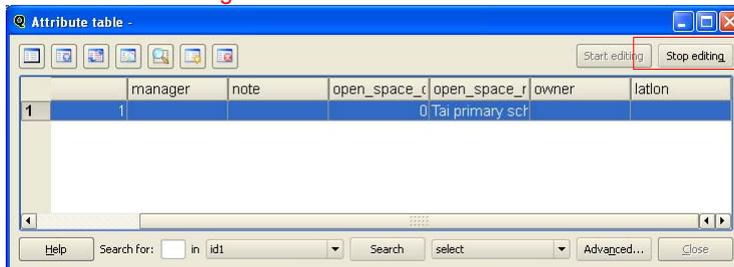


Then, Click on "New Column" button.

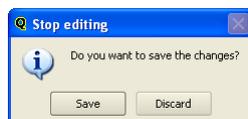


"Add Attribute" dialog opens. Type in Name "latlon" with Type "text". Click on "OK".

Use the horizontal slide bar to verify the addition of two new columns "latitude" and "longitude".



Click "Stop Editing" button.



Click on "Save". Then click on "Close" button of "Attribute Table".

