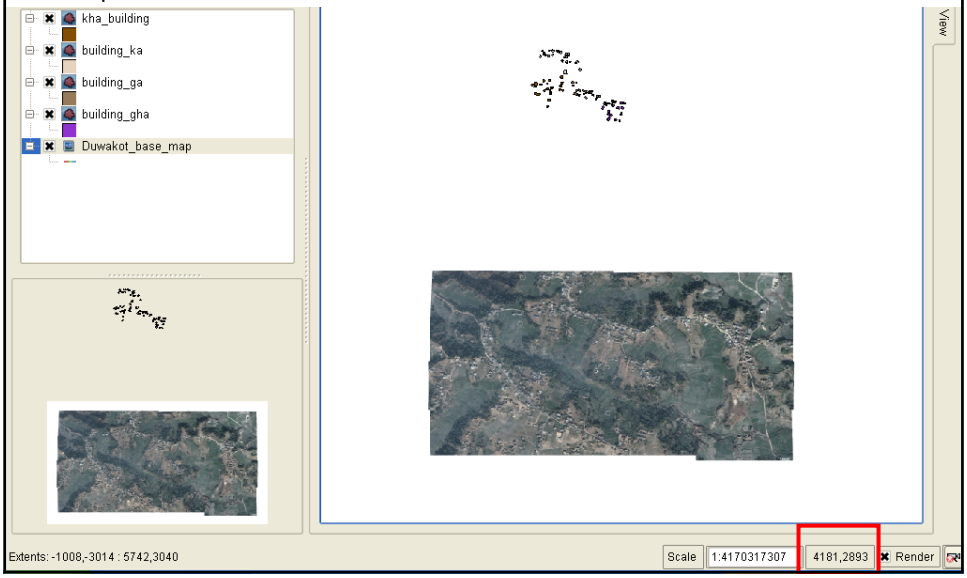
Example 1: Duwakot-Nepal

A field survey of the vulnerability of buildings was conducted by the students of the area Changnarayan, Duwakot in Kathmandu Valley, Nepal under the guidance of the researchers of Nepal Engineering Collage (NEC). A georeferenced satellite image for Basemap and the check sheet for the evaluation of buildings and houses were provided to the students. Identification numbers of buildings were noted on the check sheets and on Basemap.
Buildings in Basemap were digitized afterward by the researchers of NEC and saved in four Shape files. Namely the surveyed area was divided in four sub-areas. The information noted on the check sheets were joined in four Worksheets of MicroSoft Excel™.
Then, they are saved in a CD and sent to IISEE.

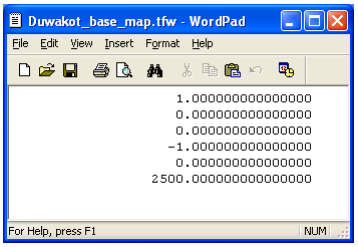
These data are used in this example.

First, four Shape files and Basemap stored in CD are browsed using QGIS. The coordinates at right bottom shows that these are digitized on Basemap with Pixel coordinates. Namely the .tfw file provided with Basemap was not used for the digitizing task. Besides, the vector objects stored in Shape files are not on the area covered by Basemap.



There are at least two ways to define Pixel coordinates. In one way the origin (0.,0.) is set at the upper left corner, the horizontal axis right, the vertical axis upward. In another way, the origin (0.,0.) is set at the lower left corner.
Basemap *.tif file without associated *.tfw file is interpreted by QGIS in the former one, whereas it seems that the latter one was used for digitizing task when these Shape files were made.

Second, a temporal *.tfw file is created using WordPad as shown below. This forces QGIS to follow the latter way mentioned above.

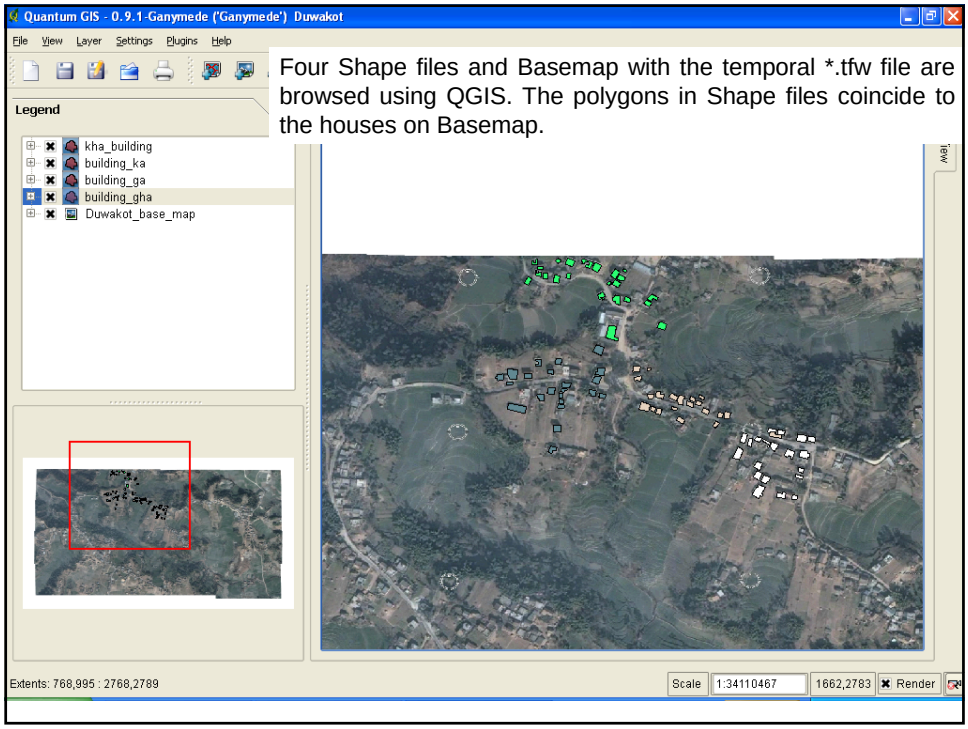


Basemap *.tif has size 4500X2500 Pixels.

Format of .tfw file:

X-scale (length for a pixel along X-axis)
X-rotation angle
Y-rotation angle
-Y-scale (negative sign & length for a pixel along y-axis)
X-value of the center of the pixel at the top left corner
Y-value of the center of the pixel at the top left corner

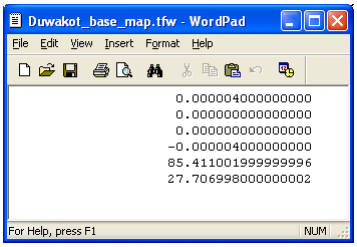
(Decimal point at the 21st column.)



Four Shape files and Basemap with the temporal *.tfw file are browsed using QGIS. The polygons in Shape files coincide to the houses on Basemap.

Transform Basemap from pixel coordinate to wgs84.

Duwakot_base_map.tif was georeferenced already when it had been created. The corresponding *.tfw file is available and shown below.



The georeferencing information given there is

Origin:

Longitude: 85.411002 deg.

Latitude: 27.706998 deg.

res: 0.000004 deg. both for longitude and Latitude

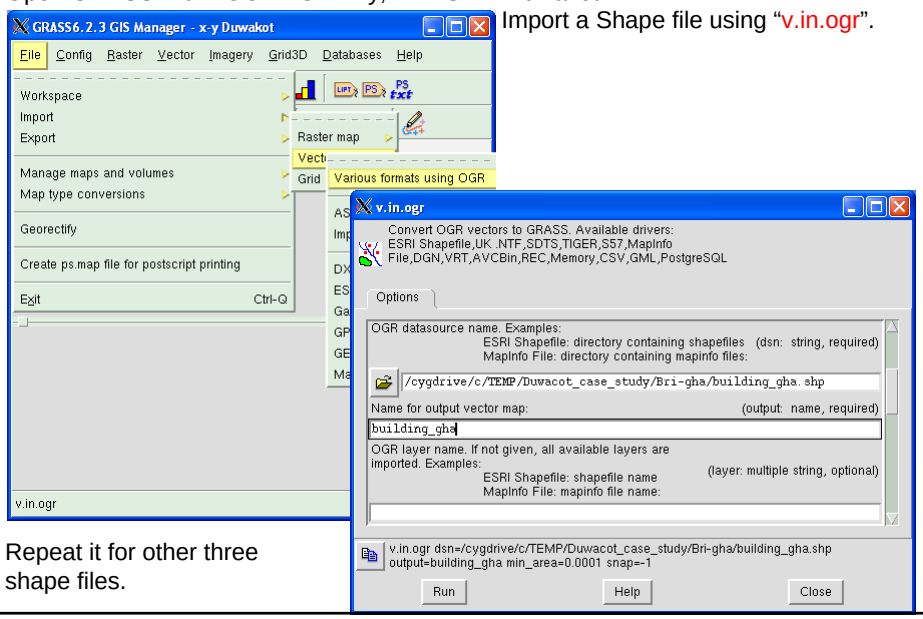
Then, the coordinates of the four corners are as shown below. ( ) denotes geographical coordinates, whereas < > shows pixel coordinates.

(85.411, 27.707) <0.0,0.0>	(85.429, 27.707) <4500.0,0.0>
(85.411, 27.697) <0.0, -2500.0>	(85.429, 27.697) <4500.0, -2500.0>

Transform the vector maps from pixel coordinate to wgs84.

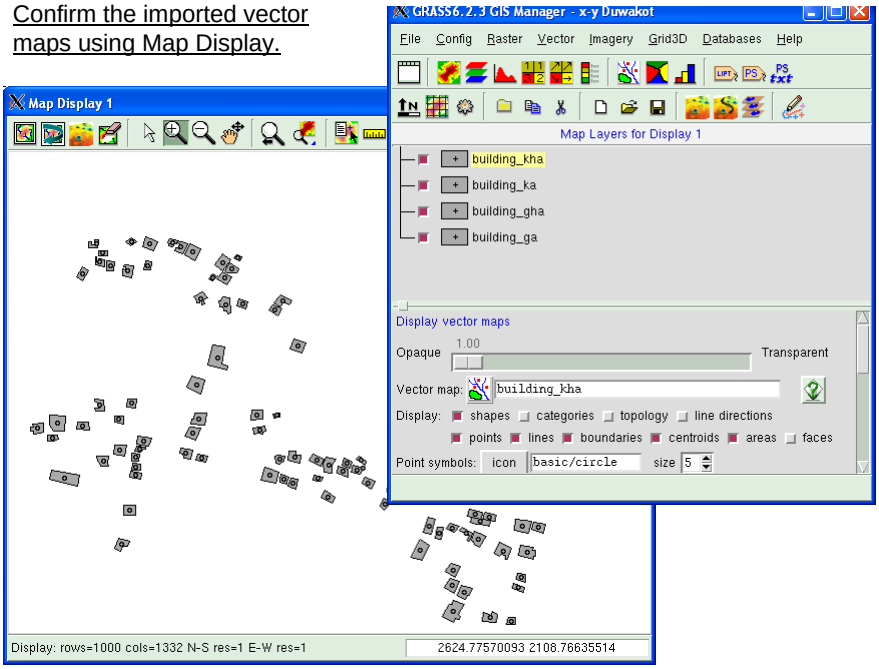
Open GRASS with LOCATION=x-y, MAPSET=Duwakot.

Import a Shape file using "v.in.ogr".



Repeat it for other three shape files.

Confirm the imported vector maps using Map Display.

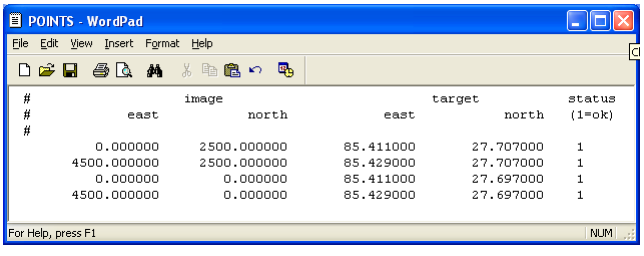


Create “POINTS” file using WordPad.

The four corners of Basemap have the following coordinates. Values in (,) denote the geographycal coordinates in wgs84, whereas those in < , > in Pixel coordintes.

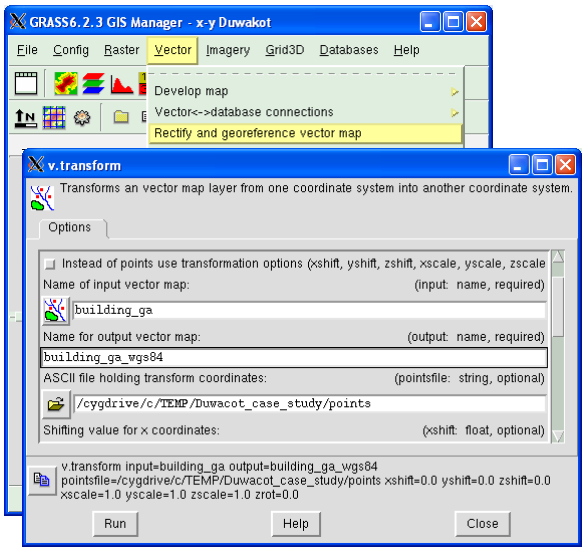
(85.411, 27.707) <0.0,0.0>	(85.429, 27.707) <4500.0,0.0>
(85.411, 27.697) <0.0, -2500.0>	(85.429, 27.697) <4500.0, -2500.0>

“POINTS” file contains these values as shown below. Coordinate transform is performed using them.

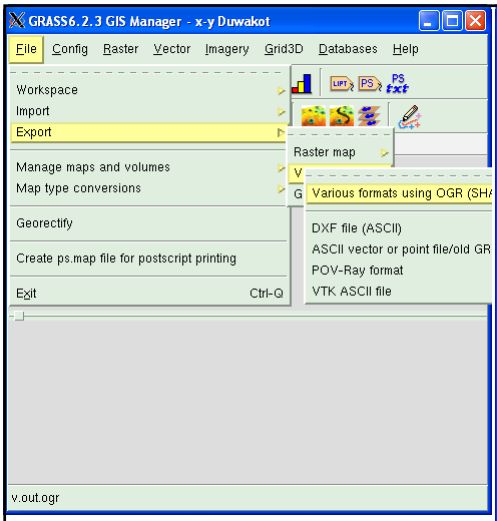


Conduct coordinates transform using “v.transform”.

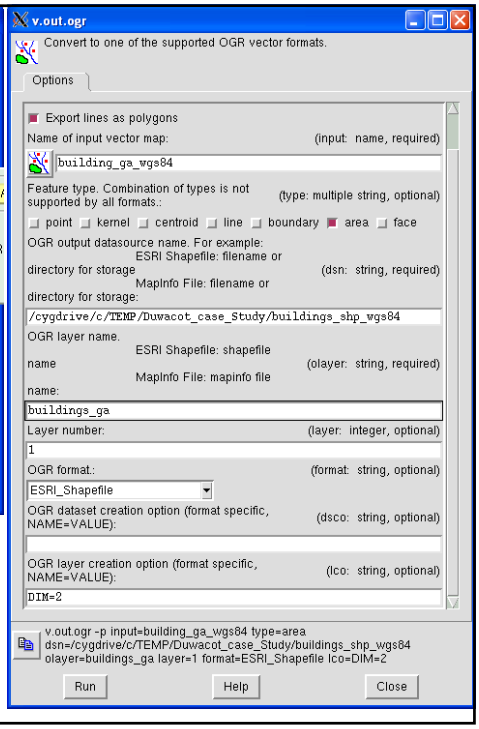
“POINTS” file created in the previous slide is used for transformation.



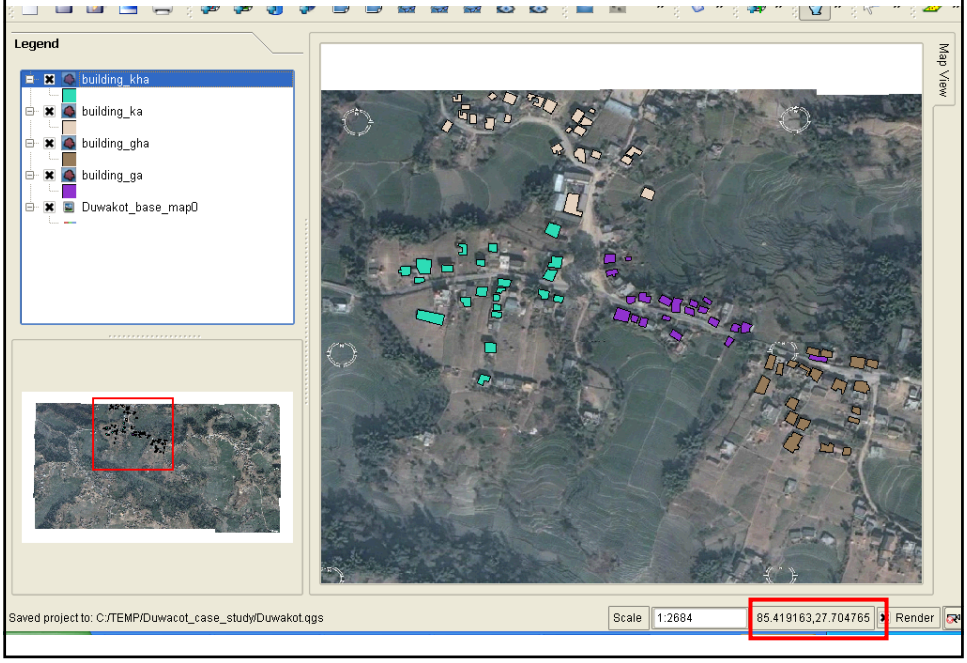
Repeat it for other three vector maps.



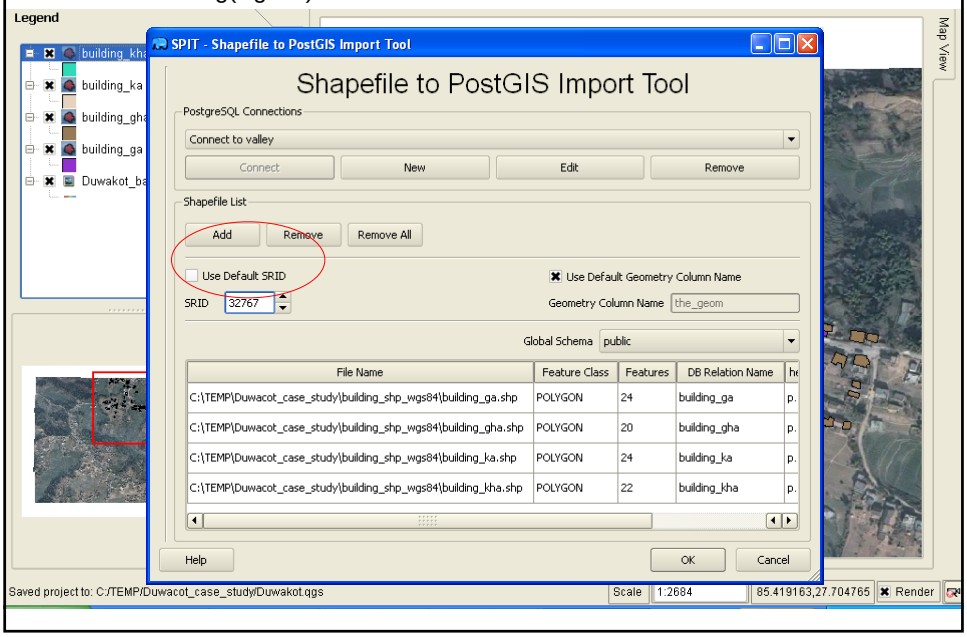
Export four vector maps to Shape file using “v.out.ogr” in order to have the interim back up files.
Exit from GRASS.



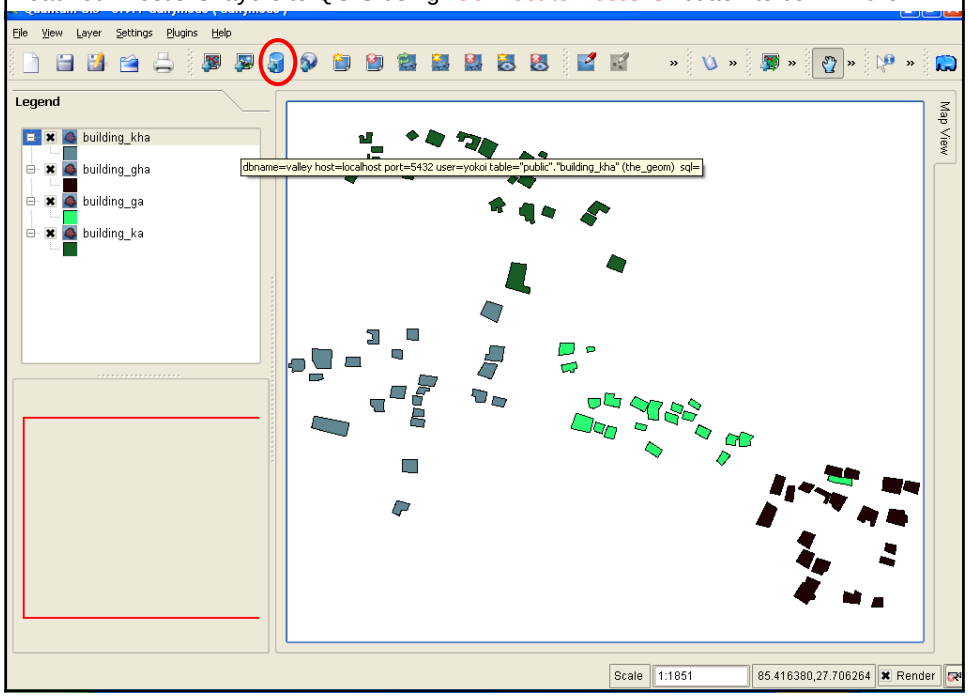
Load four Shape files in wgs84 together with Basemap in wgs84 on QGIS to confirm their spacial correspondence. Remove them after confirmation.



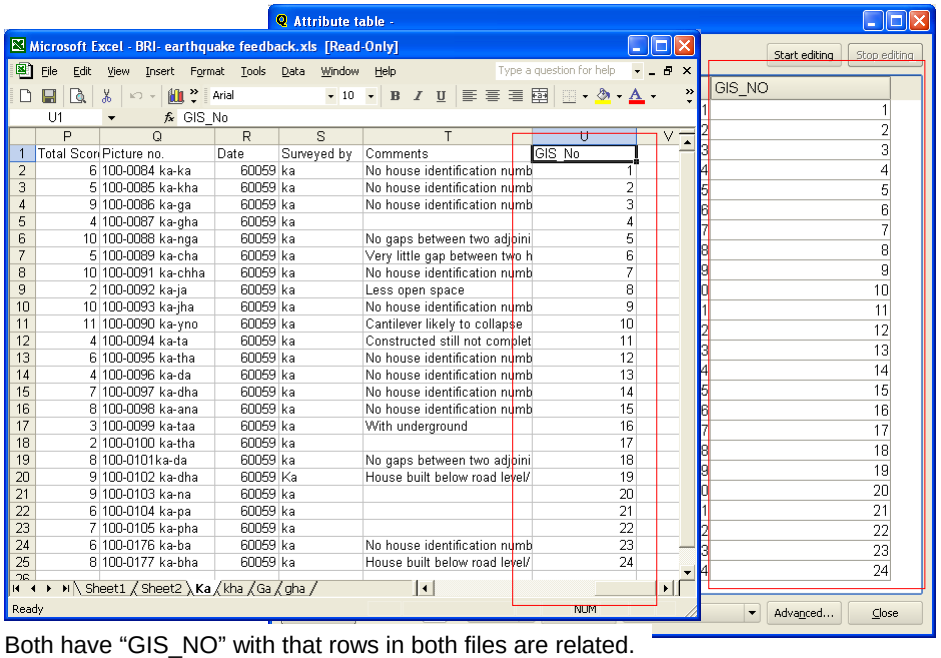
Import four Shape files in wgs84 together to Database "valley" of PostgreSQL using "SPIT" plugin of QGIS. Don't use the default SRID but 32767 that is same as SRID of LOCATION=lat-long(wgs84) of GRASS



Load four PostGIS layers to QGIS using “Connect to PostGIS” button to confirm them.

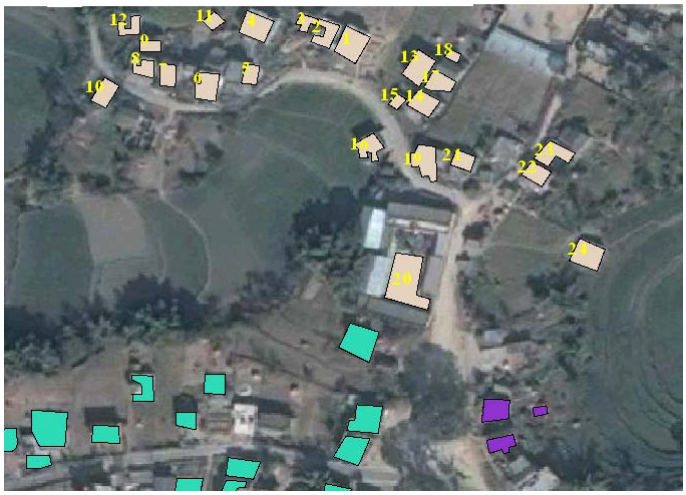


Vector layer: building_ka (Attribute Data in Excel Worksheet & building_ka.shp)



	P	Q	R	S	T	U
1	Total Scor	Picture no.	Date	Surveyed by	Comments	GIS_No
2	6	100-0084 ka-ka	60059	ka	No house identification numb	1
3	5	100-0085 ka-kha	60059	ka	No house identification numb	2
4	9	100-0086 ka-ga	60059	ka	No house identification numb	3
5	4	100-0087 ka-gha	60059	ka		4
6	10	100-0088 ka-nga	60059	ka	No gaps between two adjoini	5
7	5	100-0089 ka-cha	60059	ka	Very little gap between two h	6
8	10	100-0091 ka-chha	60059	ka	No house identification numb	7
9	2	100-0092 ka-ja	60059	ka	Less open space	8
10	10	100-0093 ka-jha	60059	ka	No house identification numb	9
11	11	100-0090 ka-yno	60059	ka	Cantilever likely to collapse	10
12	4	100-0094 ka-ta	60059	ka	Constructed still not complet	11
13	6	100-0095 ka-tha	60059	ka	No house identification numb	12
14	4	100-0096 ka-da	60059	ka	No house identification numb	13
15	7	100-0097 ka-dha	60059	ka	No house identification numb	14
16	8	100-0098 ka-ana	60059	ka	No house identification numb	15
17	3	100-0099 ka-taa	60059	ka	With underground	16
18	2	100-0100 ka-tha	60059	ka		17
19	8	100-0101ka-da	60059	ka	No gaps between two adjoini	18
20	9	100-0102 ka-dha	60059	Ka	House built below road level/	19
21	9	100-0103 ka-na	60059	ka		20
22	6	100-0104 ka-pa	60059	ka		21
23	7	100-0105 ka-pha	60059	ka		22
24	6	100-0176 ka-ba	60059	ka	No house identification numb	23
25	8	100-0177 ka-bha	60059	ka	House built below road level/	24

Both have “GIS_NO” with that rows in both files are related.



"building_ka" layer

Microsoft Excel - att_ka.csv

File Edit View Insert Format Tools Data Window Help

A1 id1

id1	Serial_No	GIS_ID	Total_Sco	House_ow	Age_of_hc	Occupants	House_us	House_Ty	Height	Shape	Elevation	Openings	Cracks	Repair_Ma	Roof	Falling_Ha	Comments
1	15	1	6	Mahesh Kh	7	4	Personal	WCB	2 storeg	Rectangul	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever	No house identificatic
2	16	2	5	Narayan Pi	5	12	Rent	WMB	2 storeg	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever	No house identificatic
3	22	3	9	Narayan Pi	60	5	Personal	WEU	2 storeg	Square	Symmetric	<30%	Minor crac	Good state	Thatch roc	Cantilever	No house identificatic
4	23	4	4	Mani Neup	12	5	Personal/F	WCB	2 storeg	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever/	Falling hazards
5	24	5	10	Mani Neup	24		Others	WEM	3 storeg an	Square	Symmetric	<30%	No cracks	Good state	CGI roofin	Cantilever	No gaps between two
6	8	6	5	Radhika Ne	7	9	Rent	WCB	2 storeg	Square	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever	Very little gap between
7	9	7	10	Annapurna	53	8	Personal	WEU	3 storeg an	Square	Symmetric	<30%	No cracks	Good state	CGI roofin	Cantilever	No house identificatic
8	10	8	2	Akur Prasa	3	4	Personal	WCB	1 storeg	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever	Less open space
9	11	9	10	Ram Krishi	30	4	Personal	WEU	3 storeg an	Square	Symmetric	<30%	Minor crac	Lacking M	CGI roofin	Cantilever	No house identificatic
10	12	10	11	Ganesh Ne	75	5	Personal	WEU	2 storeg	Square	Symmetric	<30%	Minor crac	Poor main	Thatch roc	Cantilever	Cantilever likely to co
11	13	11	4	Pradhumn	8	4	Personal	PCB	3 storeg an	Square	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever	Constructed still not c
12	14	12	6	Santosh Ni	13	6	Personal	WMB	2 storeg	Square	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever	No house identificatic
13	17	13	4	Ram Chan	8	7	Personal	WCB	2 storeg	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever	No house identificatic
14	18	14	7	Ravi Rimal	20	3	Personal	WEM	2 storeg	Square	Symmetric	<30%	No cracks	Good state	CGI roofing		No house identificatic
15	19	15	8	Ram Chan	6		Cowshed	WEU	1 storeg	Square	Symmetric	<30%	No cracks	Poor main	CGI roofin	Cantilever	No house identificatic
16	20	16	3	Maya Ranj	6	1	Personal/F	PCB	2 storeg	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever	With underground
17	21	17	2	Umesh Ne	5	5	Personal	PCB	1 storeg	Square	Symmetrical		No cracks	Good state	Slab caste	Falling hazards	
18	2	18	8	Hari Prasa	18	8	Personal	WCM	2 storeg	Rectangul	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever	No gaps between two
19	1	19	9	Bal Bahad	73	2	Personal	WEU	2 storeg	Square	Symmetric	< 30%	No cracks	Good state	CGI roofin	Cantilever	House built below roa
20	3	20	9	Changunar	58	480	Communit	WMM	2 storeg	Others	Asymmetri	<30%	No cracks	Good state	CGI roofin	Cantilever	
21	4	21	6	Dev Maya	20	7	Personal	WMB	1 storeg	Rectangul	Symmetric	> 30%	No cracks	Good state	Slab caste	Cantilever	
22	5	22	7	Hem Kuma	30	7	Personal	WEU	2 storeg	square	Symmetric	<30%	No cracks	Good state	CGI roofin	Cantilever	
23	6	23	6	Goverden I	3	3	Personal	WMB	2 storeg	Square	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever	No house identificatic
24	7	24	8	Atmaram M	15	6	Personal	WMB	3 storeg an	Square	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever	House built below roa

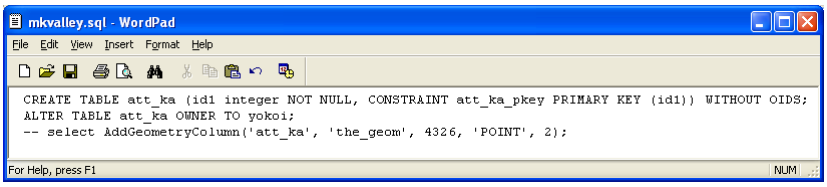
att_ka

Ready NUM

csv file "att_ka.csv" modified from the given Excel Worksheet "ka".

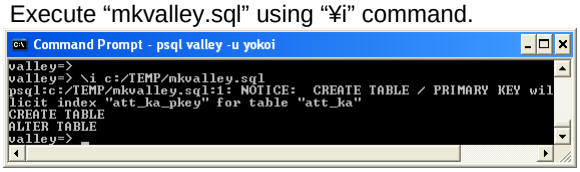
Create a table to store the attributes imported from csv file.

Edit the sql batch file “mkvalley.sql” as follows.



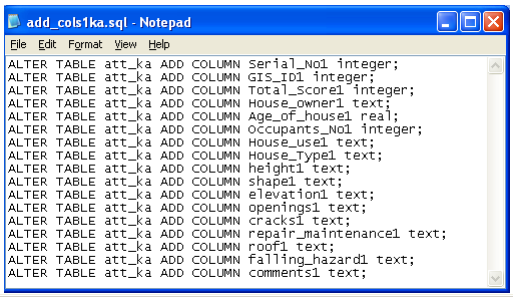
Double “-” at the beginning of the third lines denote “This line is a comment”. This line is ignored at executing the sql batch file.

Open “Command Prompt” of PostgreSQL for the database “valley”, user “yokoi” and its password.
Execute “mkvalley.sql” using “¥i” command.



Note:It is possible to achieve the same result by executing PostgreSQL commands in “mkvalley.sql” one by one by manual typing or copy & paste from “mkvalley.sql”.

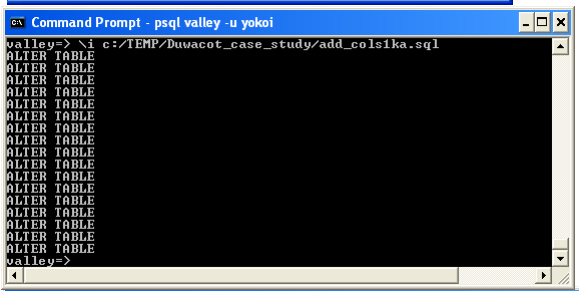
Store the attributes into the created table.



Edit the sql batch file “add_cols1ka.sql” using WordPad as shown in the top figure.

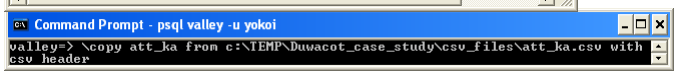
Execute it using “¥i” command as shown in the middle figure.

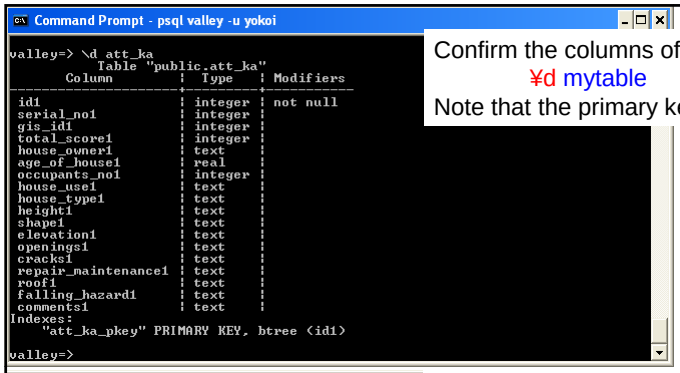
¥i mysqlfile



Then, copy the attributes from “att_ka.csv” file to table as shown in the bottom figure.

¥copy mytable FROM mycsvfile WITH CSV HEADER





Confirm the columns of the table “att_ka”.

¥d mytable

Note that the primary key is set at “id1”.

Confirm the contents of the table “att_ka”.

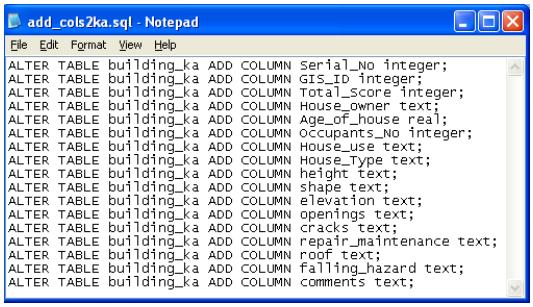
select column1,column2 from mytable

For this slide column1=gis_id1

column2=house_owner1

Add columns to the table of the Shape file to store the attributes.

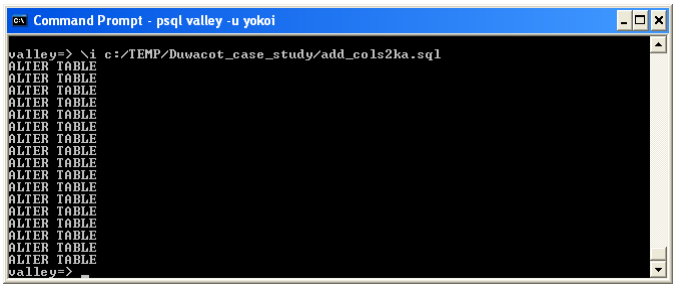
“building_ka” has geometry and ID only.



Edit the sql batch file “add_cols2ka.sql” using WordPad as shown in the top figure.

Execute it using “¥i” command as shown in the middle figure.

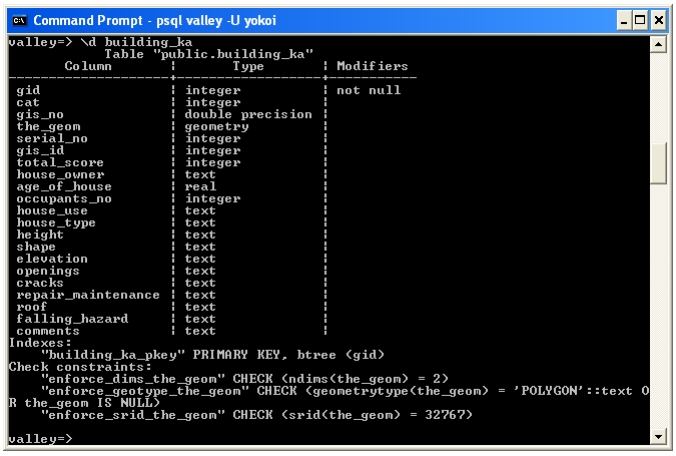
¥i mysqlfile



Confirm the columns of the table
“building_ka”.

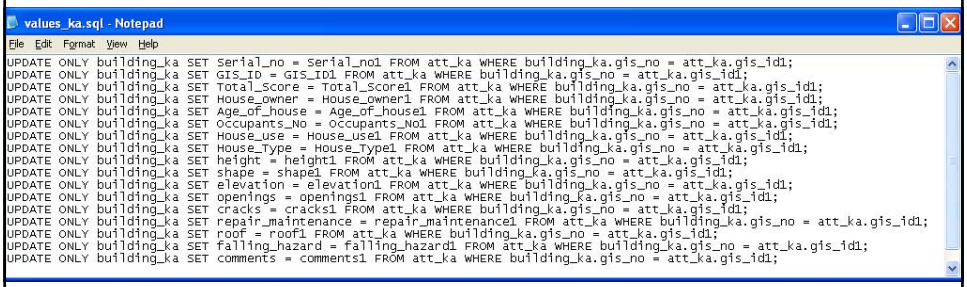
¥d mytable

Note that the primary key is set at “gid”.



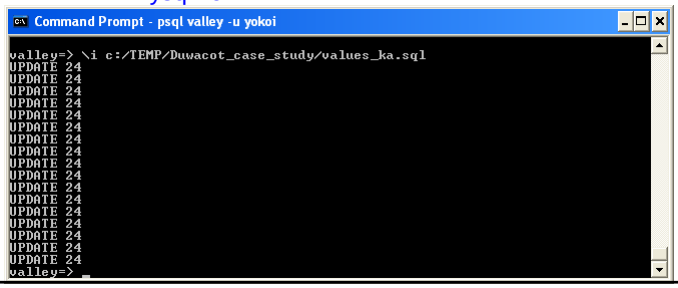
Copy the corresponding attribute values from “att_ka” to “building_ka”.

Edit the sql batch file “values_ka.sql” using WordPad as shown below.

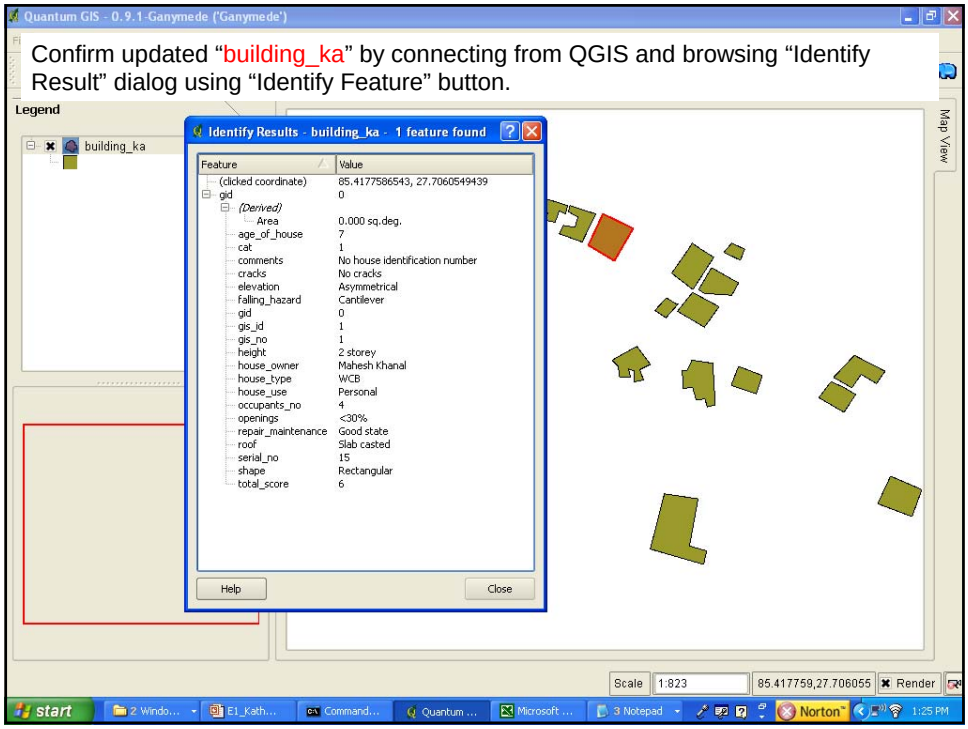


Execute it using “¥i” command as shown below.

¥i mysqlfile



Now, “building_ka” has attributes and geometry together.



Change PRIMARY KEY.

Primary key is set to "gid" and changed to "serial_no" here.

```
Command Prompt - psql valley -U yokoi
valley=> alter table only building_ka drop constraint building_ka_pkey;
ALTER TABLE
valley=> alter table building_ka add constraint building_ka_pkey primary key (se
rial_no);
NOTICE:  ALTER TABLE / ADD PRIMARY KEY will create implicit index "building_ka_p
key" for table "building_ka"
ALTER TABLE
```

```
Command Prompt - psql valley -U yokoi
valley=> alter table building_ka drop column gid;
ALTER TABLE
valley=> alter table building_ka drop column cat;
ALTER TABLE
valley=> alter table building_ka drop column gis_no;
ALTER TABLE
valley=> \d building_ka
        Table "public.building_ka"
       Column        |   Type   | Modifiers
---------------------+----------+-----------
 the_geom            | geometry |
 serial_no           | integer  | not null
 gis_id              | integer  |
 total_score         | integer  |
 house_owner         | text     |
 age_of_house        | real     |
 occupants_no        | integer  |
 house_use           | text     |
 house_type          | text     |
 height              | text     |
 shape               | text     |
 elevation           | text     |
 openings            | text     |
 cracks              | text     |
 repair_maintenance  | text     |
 roof                | text     |
 falling_hazard      | text     |
 comments            | text     |
Indexes:
    "building_ka_pkey" PRIMARY KEY, btree (serial_no)
Check constraints:
    "enforce_dims_the_geom" CHECK (ndims(the_geom) = 2)
    "enforce_geotype_the_geom" CHECK (geometrytype(the_geom) = 'POLYGON'::text O
R the_geom IS NULL)
    "enforce_srid_the_geom" CHECK (srid(the_geom) = 32767)

valley=>
```

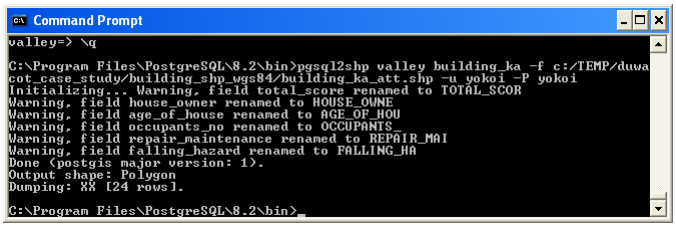
Drop the constraint PRIMARY KEY once and set it again to "serial_no".

Drop the columns "gid", "cat" and "gis_no" that are not used later.

Then, confirm "building_ka" again.

Export to Shape file for interim back up using “pgsql2shp”.

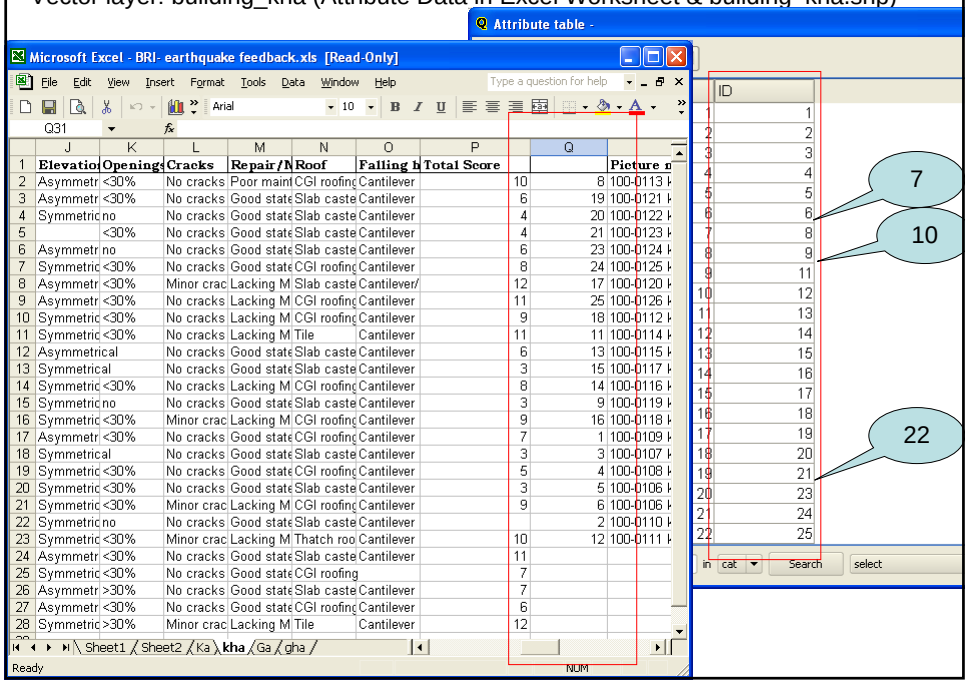
Quit from “Command Prompt” of PostgreSQL using “¥q”.



Pgsql2shp mydatabase mytable –f myshpfile –u myusername –P mypassword

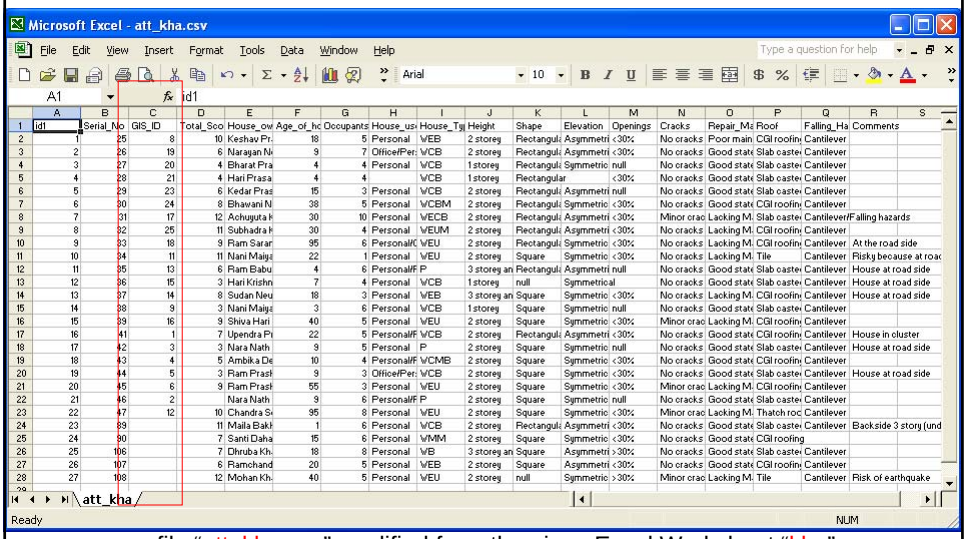
Note that long column names are shorten automatically.

Vector layer: building_kha (Attribute Data in Excel Worksheet & building_kha.shp)



For this vector layer, Shape file has 22 “GIS_NO”, whereas Excel worksheet does not have column entitled in it but does have the Q-th column without name that has 22 rows. Both of them skip “7”, ”10” and “22”.
Therefore, it seems probable that these can be used as ID to relate the geometry in Shape file and the attributes in Excel Worksheet.

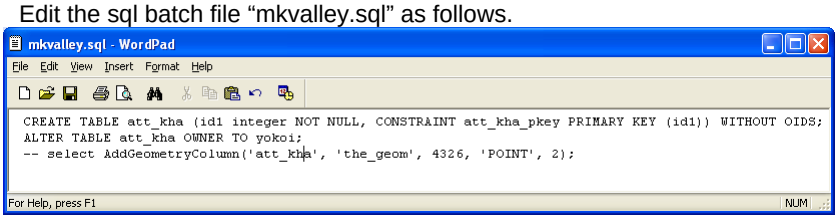
“building_kha” layer



csv file “att_kha.csv” modified from the given Excel Worksheet “kha”.
The column name “GIS_ID” is added to the Q-th column without name in the three slides before.

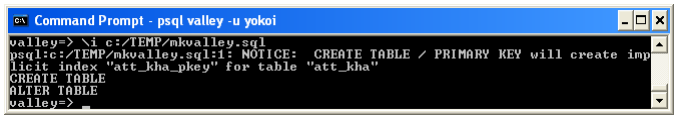
Create a table to store the attributes imported from csv file.

Edit the sql batch file “mkvalley.sql” as follows.



Double “-” at the beginning of the third lines denote “This line is a comment”. This line is ignored at executing the sql batch file.

Open “Command Prompt” of PostgreSQL for the database “valley”, user “yokoi” and its password.
Execute “mkvalley.sql” using “¥i” command.



Note:It is possible to achieve the same result by executing PostgreSQL commands in “mkvalley.sql” one by one by manual typing or copy & paste from “mkvalley.sql”.

add_cols1kha.sql - Notepad

File Edit Format View Help

```
ALTER TABLE att_kha ADD COLUMN Serial_No1 integer;
ALTER TABLE att_kha ADD COLUMN GIS_ID1 integer;
ALTER TABLE att_kha ADD COLUMN Total_Score1 integer;
ALTER TABLE att_kha ADD COLUMN House_owner1 text;
ALTER TABLE att_kha ADD COLUMN Age_of_house1 real;
ALTER TABLE att_kha ADD COLUMN Occupants_No1 integer;
ALTER TABLE att_kha ADD COLUMN House_use1 text;
ALTER TABLE att_kha ADD COLUMN House_Type1 text;
ALTER TABLE att_kha ADD COLUMN height1 text;
ALTER TABLE att_kha ADD COLUMN shape1 text;
ALTER TABLE att_kha ADD COLUMN elevation1 text;
ALTER TABLE att_kha ADD COLUMN openings1 text;
ALTER TABLE att_kha ADD COLUMN cracks1 text;
ALTER TABLE att_kha ADD COLUMN repair_maintenance1 text;
ALTER TABLE att_kha ADD COLUMN roof1 text;
ALTER TABLE att_kha ADD COLUMN falling_hazard1 text;
ALTER TABLE att_kha ADD COLUMN comments1 text;
```

Edit the sql batch file "add_cols1kha.sql" using WordPad as shown in the top figure.

Execute it using "¥i" command as shown in the middle figure.

¥i mysqlfile

Command Prompt - psql valley -u yokoi

```
valley=> \i c:/TEMP/Duwacot_case_study/add_cols1kha.sql
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
valley=>
```

Confirm the table "att_kha".

Command Prompt - psql valley -U yokoi

```
valley=> \d att_kha
          Table "public.att_kha"
       Column        |  Type   | Modifiers
---------------------+---------+-----------
 id1                 | integer | not null
 serial_no1          | integer |
 gis_id1             | integer |
 total_score1        | integer |
 house_owner1        | text    |
 age_of_house1       | real    |
 occupants_no1       | integer |
 house_use1          | text    |
 house_type1         | text    |
 height1             | text    |
 shape1              | text    |
 elevation1          | text    |
 openings1           | text    |
 cracks1             | text    |
 repair_maintenance1 | text    |
 roof1               | text    |
 falling_hazard1     | text    |
 comments1           | text    |
Indexes:
    "att_kha_pkey" PRIMARY KEY, btree (id1)

valley=>
```

Then, copy the attributes from "att_kha.csv" file to table as shown in the bottom figure.

¥copy mytable FROM mycsvfile WITH CSV HEADER

Command Prompt - psql valley -U yokoi

```
valley=> \copy att_kha from c:\TEMP\Duwacot_case_study\csv_files\att_kha.csv wit
h csv header
valley=>
```

Add columns to the table of the Shape file to store the attributes.

"building_kha" has geometry and ID only.

add_cols2kha.sql - Notepad

```
ALTER TABLE building_kha ADD COLUMN Serial_No integer;
ALTER TABLE building_kha ADD COLUMN GIS_ID integer;
ALTER TABLE building_kha ADD COLUMN Total_Score integer;
ALTER TABLE building_kha ADD COLUMN House_owner text;
ALTER TABLE building_kha ADD COLUMN Age_of_house real;
ALTER TABLE building_kha ADD COLUMN Occupants_No integer;
ALTER TABLE building_kha ADD COLUMN House_use text;
ALTER TABLE building_kha ADD COLUMN House_Type text;
ALTER TABLE building_kha ADD COLUMN height text;
ALTER TABLE building_kha ADD COLUMN shape text;
ALTER TABLE building_kha ADD COLUMN elevation text;
ALTER TABLE building_kha ADD COLUMN openings text;
ALTER TABLE building_kha ADD COLUMN cracks text;
ALTER TABLE building_kha ADD COLUMN repair_maintenance text;
ALTER TABLE building_kha ADD COLUMN roof text;
ALTER TABLE building_kha ADD COLUMN falling_hazard text;
ALTER TABLE building_kha ADD COLUMN comments text;
```

Edit the sql batch file "add_cols2kha.sql" using WordPad as shown in the top figure.

Execute it using "¥i" command as shown in the middle figure.

¥i mysqlfile

Command Prompt - psql valley -U yokoi

```
valley=> \i c:/TEMP/Duwacot_case_study/add_cols2kha.sql
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
valley=>
```

Confirm the columns of the table "building_kha".

¥d mytable

Note that the primary key is set at "gid" and srid(the_geom) is set "-1". The latter means that the information of coordinates used at georeferencing is not attached to the table yet.

Command Prompt - psql valley -U yokoi

```
valley=> \d building_kha
      Table "public.building_kha"
       Column       |   Type    | Modifiers
--------------------+-----------+-----------
 gid                | integer   | not null
 cat                | integer   |
 id                 | integer   |
 the_geom           | geometry  |
 serial_no          | integer   |
 gis_id             | integer   |
 total_score        | integer   |
 house_owner        | text      |
 age_of_house       | real      |
 occupants_no       | integer   |
 house_use          | text      |
 house_type         | text      |
 height             | text      |
 shape              | text      |
 elevation          | text      |
 openings           | text      |
 cracks             | text      |
 repair_maintenance | text      |
 roof               | text      |
 falling_hazard     | text      |
 comments           | text      |
Indexes:
    "building_kha_pkey" PRIMARY KEY, btree (gid)
Check constraints:
    "enforce_dims_the_geom" CHECK (ndims(the_geom) = 2)
    "enforce_geotype_the_geom" CHECK (geometrytype(the_geom) = 'POLYGON'::text O
R the_geom IS NULL)
    "enforce_srid_the_geom" CHECK (srid(the_geom) = 32767)

valley=>
```

Copy the corresponding attribute values from “att_kha” to “building_kha”.

Edit the sql batch file “values_kha.sql” using WordPad as shown below.

values_kha.sql - Notepad

File Edit Format View Help

```
UPDATE ONLY building_kha SET Serial_no = Serial_no1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET GIS_ID = GIS_ID1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET Total_Score = Total_Score1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET House_owner = House_owner1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET Age_of_house = Age_of_house1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET Occupants_No = Occupants_No1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET House_use = House_use1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET House_Type = House_Type1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET height = height1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET shape = shape1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET elevation = elevation1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET openings = openings1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET cracks = cracks1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET repair_maintenance = repair_maintenance1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET roof = roof1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET falling_hazard = falling_hazard1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
UPDATE ONLY building_kha SET comments = comments1 FROM att_kha WHERE building_kha.id = att_kha.gis_id1;
```

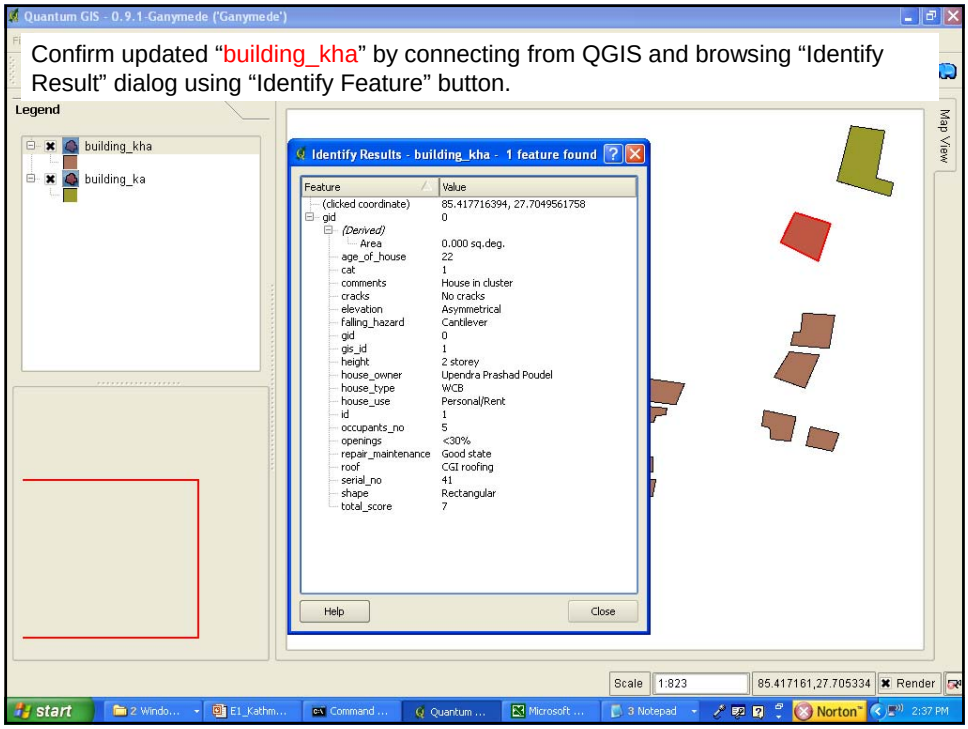
Execute it using “¥i” command as shown below.

¥i mysqlfile

Command Prompt - psql valley -U yokoi

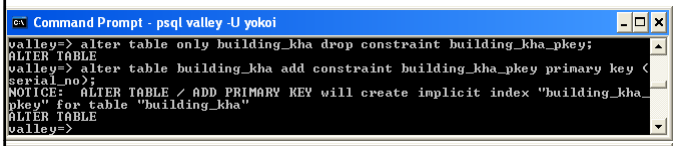
```
valley=> \i c:/TEMP/Duwacot_case_study/values_kha.sql
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
valley=>
```

Now, “building_kha” has attributes and geometry together.

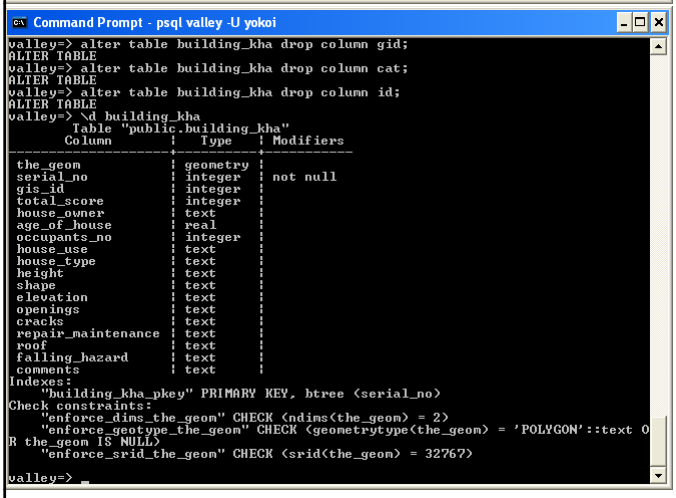


Change PRIMARY KEY.

Primary key is set to “gid” and changed to “serial_no” here.



Drop the constraint PRIMARY KEY once and set it again to “serial_no”.

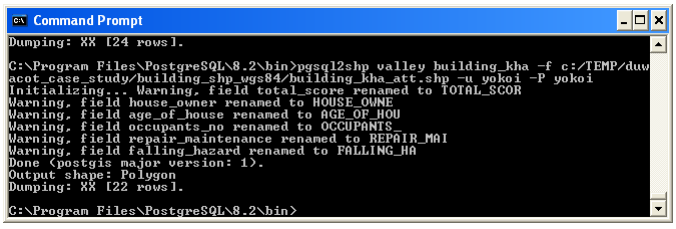


Drop the columns “gid”, “cat” and “gis_no” that are not used later.

Then, confirm “building_kha” again.

Export to Shape file for interim back up using “pgsql2shp”.

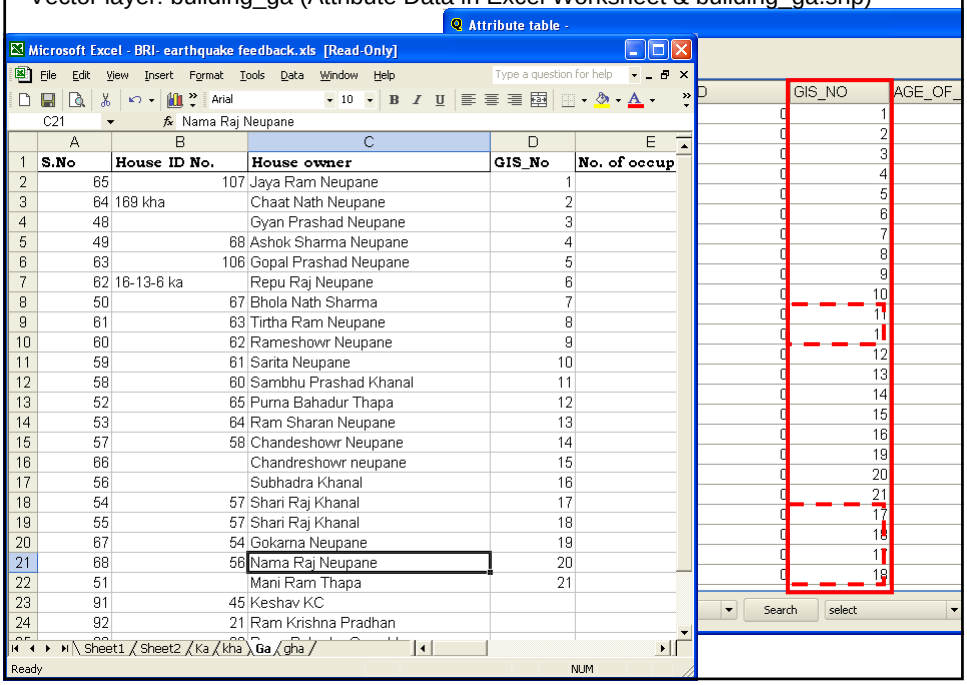
Quit from “Command Prompt” of PostgreSQL using “¥q”.



Pgsql2shp mydatabase mytable –f myshpfile –u myusername –P mypassword

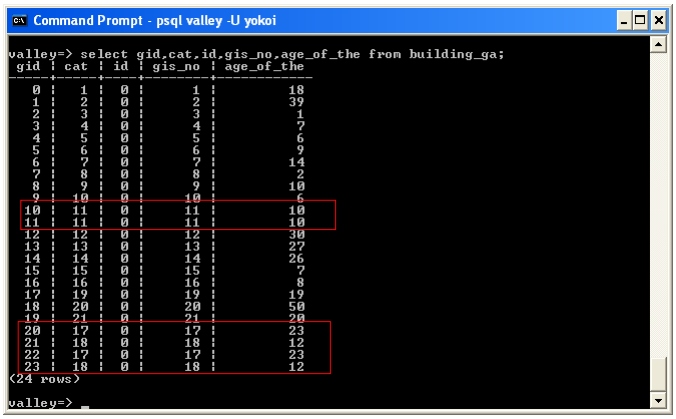
Note that long column names are shorten automatically.

Vector layer: building_ga (Attribute Data in Excel Worksheet & building_ga.shp)



	A	B	C	D	E
1	S.No	House ID No.	House owner	GIS_No	No. of occup
2	65	107	Jaya Ram Neupane	1	
3	64	189 kha	Chaat Nath Neupane	2	
4	48		Gyan Prashad Neupane	3	
5	49	68	Ashok Sharma Neupane	4	
6	63	106	Gopal Prashad Neupane	5	
7	62	16-13-6 ka	Repu Raj Neupane	6	
8	50	67	Bhola Nath Sharma	7	
9	61	63	Tirtha Ram Neupane	8	
10	60	62	Rameshowr Neupane	9	
11	59	61	Sarita Neupane	10	
12	58	60	Sambhu Prashad Khanal	11	
13	52	65	Purna Bahadur Thapa	12	
14	53	64	Ram Sharan Neupane	13	
15	57	58	Chandeshowr Neupane	14	
16	66		Chandreshowr neupane	15	
17	56		Subhadra Khanal	16	
18	54	57	Shari Raj Khanal	17	
19	55	57	Shari Raj Khanal	18	
20	67	54	Gokarna Neupane	19	
21	68	56	Nama Raj Neupane	20	
22	51		Mani Ram Thapa	21	
23	91	45	Keshav KC		
24	92	21	Ram Krishna Pradhan		

For this vector layer, both of Shape file and Excel worksheet have the column entitled “GIS_NO”. The former has 24 rows but “11”, “17” and “18” are duplicated and then in total 21 rows. The latter has 21 rows.
Therefore, it seems probable that these “GIS_ID” relates the geometry in Shape file and the attributes in Excel Worksheet.



gid	cat	id	gis_no	age_of_the
0	1	0	1	18
1	2	0	2	39
2	3	0	3	1
3	4	0	4	7
4	5	0	5	6
5	6	0	6	9
6	7	0	7	14
7	8	0	8	2
8	9	0	9	10
9	10	0	10	6
10	11	0	11	10
11	11	0	11	10
12	12	0	12	30
13	13	0	13	27
14	14	0	14	26
15	15	0	15	7
16	16	0	16	8
17	19	0	19	19
18	20	0	20	50
19	21	0	21	20
20	17	0	17	23
21	18	0	18	12
22	17	0	17	23
23	18	0	18	12

"building_ga" layer. GIS_NO is shown together. "11", "17" and "18" are duplicated.

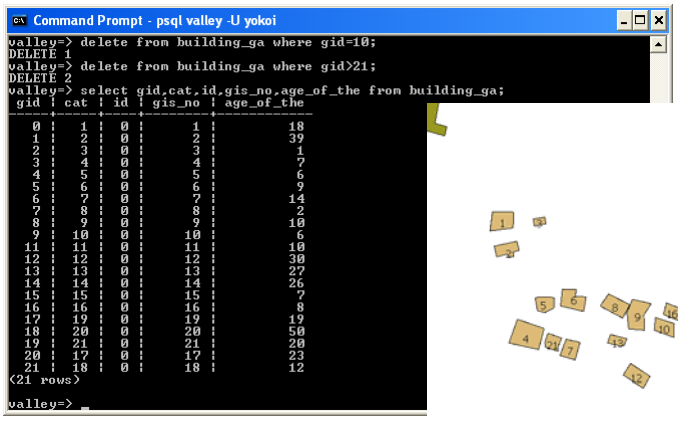
The duplicated rows are deleted from "building_ga". The selection of one of the duplicated rows to be deleted is "Try and Error" checking the result of delete using QGIS.

Delete the row "gid"=10 ("GIS_NO"=11)

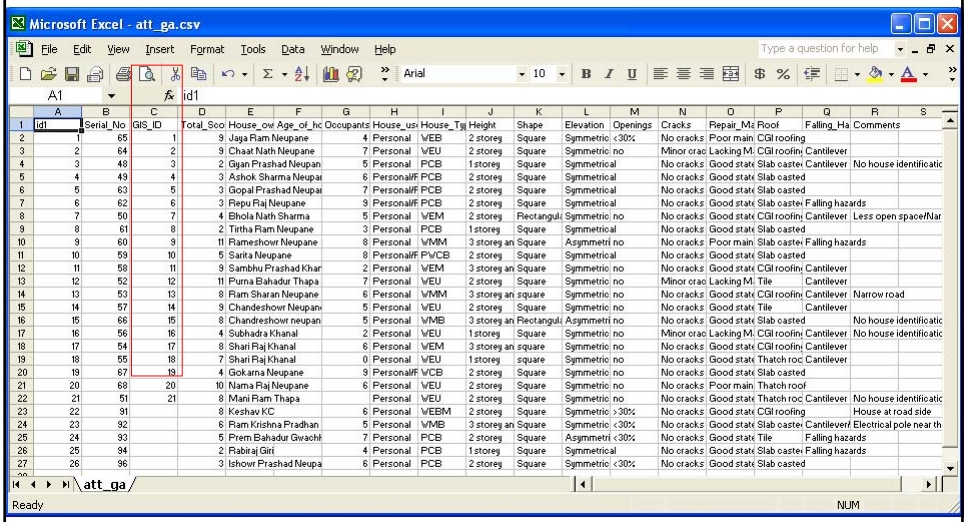
```
delete from building_ga where gid=10;
```

Delete the rows "gid"=22, 23 ("GIS_NO"=17, 18)

```
delete from building_ga where gid>21;
```



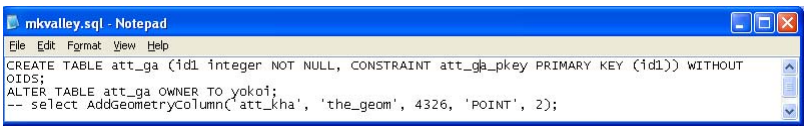
```
Command Prompt - psql valley -U yokoi
valley=> delete from building_ga where gid=10;
DELETE 1
valley=> delete from building_ga where gid>21;
DELETE 2
valley=> select gid,cat,id,gis_no,age_of_the from building_ga;
 gid | cat | id | gis_no | age_of_the
-----+-----+----+--------+------------
   0 |   1 |  0 |      1 |         18
   1 |   2 |  0 |      2 |         39
   2 |   3 |  0 |      3 |          1
   3 |   4 |  0 |      4 |          7
   4 |   5 |  0 |      5 |          6
   5 |   6 |  0 |      6 |          9
   6 |   7 |  0 |      7 |         14
   7 |   8 |  0 |      8 |          2
   8 |   9 |  0 |      9 |         10
   9 |  10 |  0 |     10 |          6
  11 |  11 |  0 |     11 |         10
  12 |  12 |  0 |     12 |         30
  13 |  13 |  0 |     13 |         27
  14 |  14 |  0 |     14 |         26
  15 |  15 |  0 |     15 |          7
  16 |  16 |  0 |     16 |          8
  17 |  19 |  0 |     19 |         19
  18 |  20 |  0 |     20 |         50
  19 |  21 |  0 |     21 |         20
  20 |  17 |  0 |     17 |         23
  21 |  18 |  0 |     18 |         12
(21 rows)

valley=>
```



csv file “att_ga.csv” modified from the given Excel Worksheet “ga”.
The rows of the column entitled “GIS_ID” that have not values can not be used. Then, “serial_no”=“92”, “93”, “94”, “96” are not available.

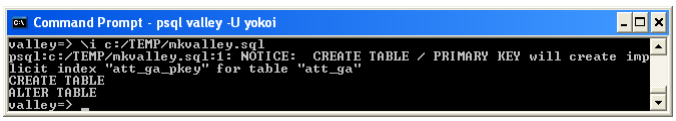
Create a table to store the attributes imported from csv file.

Edit the sql batch file “mkvalley.sql” as follows.

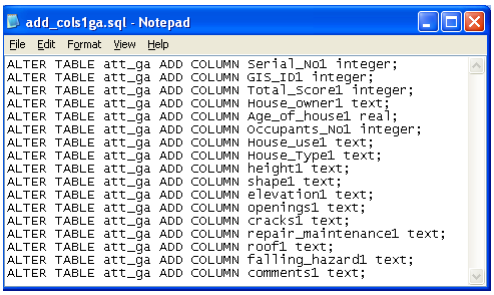


Double “-” at the beginning of the third lines denote “This line is a comment”. This line is ignored at executing the sql batch file.

Open “Command Prompt” of PostgreSQL for the database “valley”, user “yokoi” and its password.
Execute “mkvalley.sql” using “¥i” command.



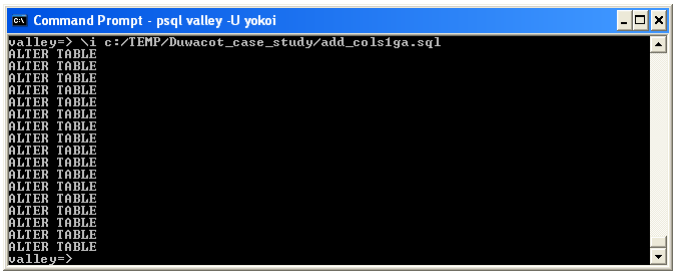
Note:It is possible to achieve the same result by executing PostgreSQL commands in “mkvalley.sql” one by one by manual typing or copy & paste from “mkvalley.sql”.



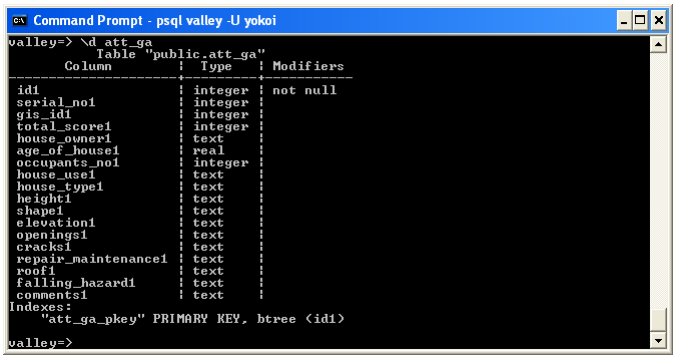
Edit the sql batch file "add_cols1ga.sql" using WordPad as shown in the top figure.

Execute it using "¥i" command as shown in the middle figure.

¥i mysqlfile

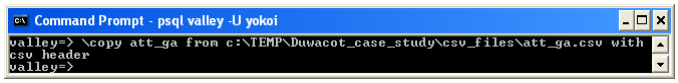


Confirm the table "att_ga".



Then, copy the attributes from "att_ga.csv" file to table as shown in the bottom figure.

¥copy mytable FROM mycsvfile WITH CSV HEADER



Add columns to the table of the Shape file to store the attributes.

"building_ga" has geometry and ID only.

add_cols2ga.sql - Notepad

```
ALTER TABLE building_ga ADD COLUMN Serial_No integer;
ALTER TABLE building_ga ADD COLUMN GIS_ID integer;
ALTER TABLE building_ga ADD COLUMN Total_Score integer;
ALTER TABLE building_ga ADD COLUMN House_owner text;
ALTER TABLE building_ga ADD COLUMN Age_of_house real;
ALTER TABLE building_ga ADD COLUMN Occupants_No integer;
ALTER TABLE building_ga ADD COLUMN House_use text;
ALTER TABLE building_ga ADD COLUMN House_Type text;
ALTER TABLE building_ga ADD COLUMN height text;
ALTER TABLE building_ga ADD COLUMN shape text;
ALTER TABLE building_ga ADD COLUMN elevation text;
ALTER TABLE building_ga ADD COLUMN openings text;
ALTER TABLE building_ga ADD COLUMN cracks text;
ALTER TABLE building_ga ADD COLUMN repair_maintenance text;
ALTER TABLE building_ga ADD COLUMN roof text;
ALTER TABLE building_ga ADD COLUMN falling_hazard text;
ALTER TABLE building_ga ADD COLUMN comments text;
```

Edit the sql batch file "add_cols2ga.sql" using WordPad as shown in the top figure.

Execute it using "¥i" command as shown in the middle figure.

¥i mysqlfile

Command Prompt - psql valley -U yokoi

```
valley=> \i c:/TEMP/Duwacot_case_study/add_cols2ga.sql
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
ALTER TABLE
valley=>
```

Confirm the columns of the table "building_ga".

¥d mytable

Note that the primary key is set at "gid" and srid(the_geom) is set "-1". The latter means that the information of coordinates used at georeferencing is not attached to the table yet.

Command Prompt - psql valley -U yokoi

```
valley=> \d building_ga
        Table "public.building_ga"
       Column        |   Type    | Modifiers
---------------------+-----------+-----------
 gid                 | integer   | not null
 cat                 | integer   |
 id                  | integer   |
 gis_no              | integer   |
 age_of_the          | integer   |
 the_geom            | geometry  |
 serial_no           | integer   |
 gis_id              | integer   |
 total_score         | integer   |
 house_owner         | text      |
 age_of_house        | real      |
 occupants_no        | integer   |
 house_use           | text      |
 house_type          | text      |
 height              | text      |
 shape               | text      |
 elevation           | text      |
 openings            | text      |
 cracks              | text      |
 repair_maintenance  | text      |
 roof                | text      |
 falling_hazard      | text      |
 comments            | text      |
Indexes:
    "building_ga_pkey" PRIMARY KEY, btree (gid)
Check constraints:
    "enforce_dims_the_geom" CHECK (ndims(the_geom) = 2)
    "enforce_geotype_the_geom" CHECK (geometrytype(the_geom) = 'POLYGON'::text O
R the_geom IS NULL)
    "enforce_srid_the_geom" CHECK (srid(the_geom) = 32767)

valley=>
```

Copy the corresponding attribute values from “att_ga” to “building_ga”.

Edit the sql batch file “values_ga.sql” using WordPad as shown below.

values_ga.sql - Notepad

File Edit Format View Help

```
UPDATE ONLY building_ga SET Serial_no = Serial_no1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET GIS_ID = GIS_ID1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET Total_Score = Total_Score1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET House_owner = House_owner1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET Age_of_house = Age_of_house1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET Occupants_No = Occupants_No1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET House_use = House_use1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET House_Type = House_Type1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET height = height1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET shape = shape1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET elevation = elevation1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET openings = openings1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET cracks = cracks1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET repair_maintenance = repair_maintenance1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET roof = roof1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET falling_hazard = falling_hazard1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
UPDATE ONLY building_ga SET comments = comments1 FROM att_ga WHERE building_ga.gis_no = att_ga.gis_id1;
```

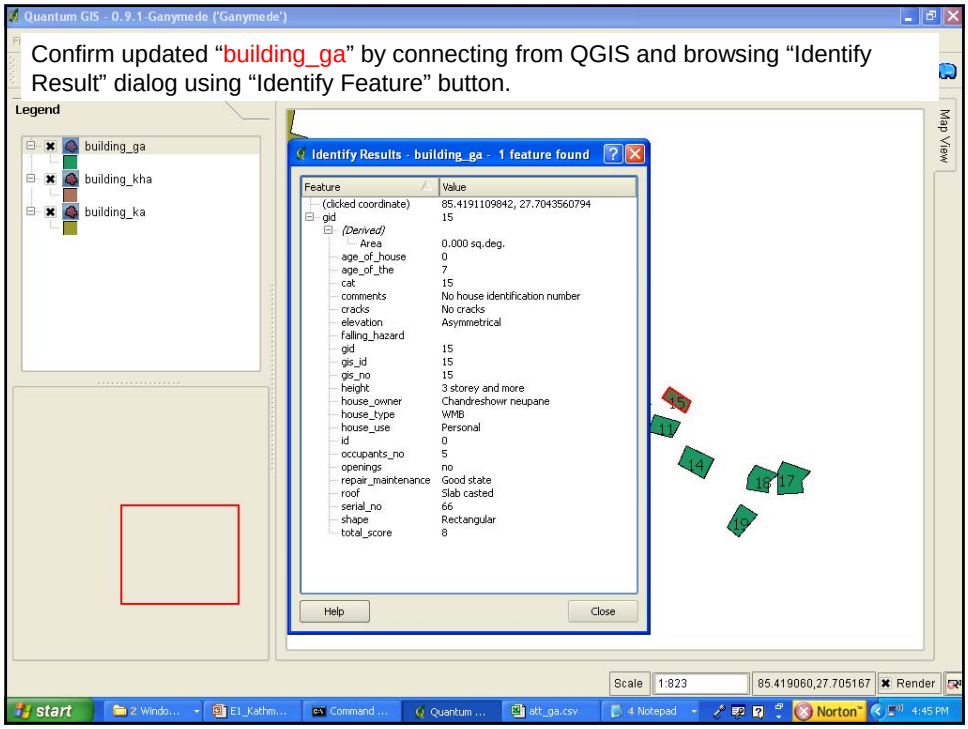
Execute it using “¥i” command as shown below.

¥i mysqlfile

Command Prompt - psql valley -U yokoi

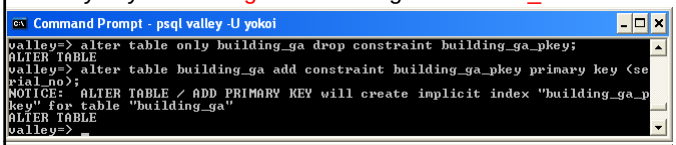
```
valley=> \i c:/TEMP/Duwacot_case_study/values_ga.sql
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
UPDATE 22
valley=>
```

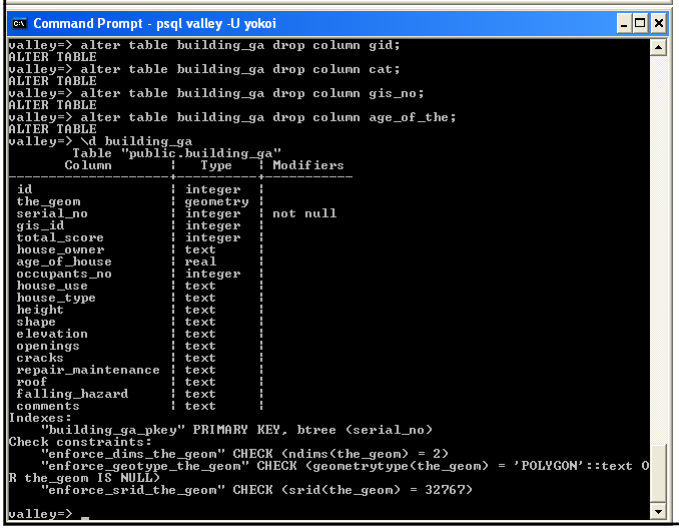
Now, “building_ga” has attributes and geometry together.



Change PRIMARY KEY.

Primary key is set to “gid” and changed to “serial_no” here.





Drop the constraint PRIMARY KEY once and set it again to “serial_no”.

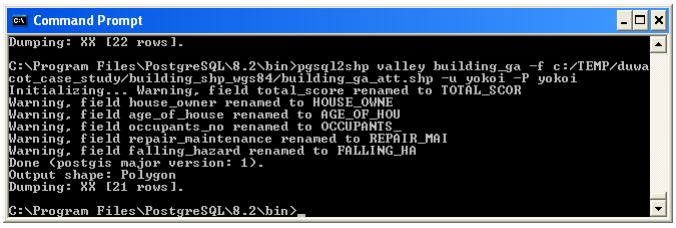
Drop the columns “gid”, “cat” and “gis_no” that are not used later.

Then, confirm “building_ga” again.

Oops! Column “id” must be delete.

Export to Shape file for interim back up using “pgsql2shp”.

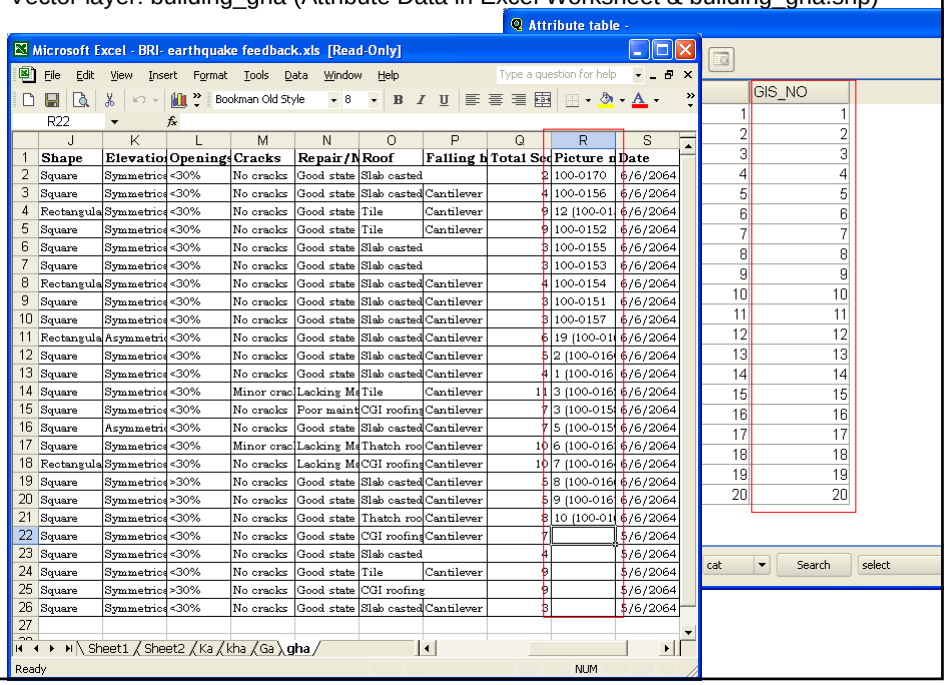
Quit from “Command Prompt” of PostgreSQL using “¥q”.



Pgsql2shp mydatabase mytable –f myshpfile –u myusername –P mypassword

Note that long column names are shorten automatically.

Vector layer: building_gha (Attribute Data in Excel Worksheet & building_gha.shp)



For this vector layer, both of Shape file and Excel worksheet have the column entitled “GIS_NO”. The former has 20 rows but the latter’s “GIS_NO” column is empty completely.

Unfortunately, there is any hint to find the relation of these two. The column entitled “Picture No.” has 20 data whereas others have 26.

Therefore, it is assumed that the row number of Excel Worksheet minus 1 might coincide to “GIS_NO” of Shape file.

"building_gha" layer. GIS_NO is shown together.

Microsoft Excel - att_gha.csv

File Edit View Insert Format Tools Data Window Help

C1 GIS_ID

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Id1	Serial_No	GIS_ID	Total_Sco	House_ow	Age_of_hc	Occupants	House_us	House_Ty	Height	Shape	Elevation	Openings	Cracks	Repair_Ma	Roof	Falling_Ha	Comments	
2	1	69	1	2	Naba Raj N	2	6	Personal	PCB	1 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	null		
3	2	70	2	4	Kishore Sa	1	70	School	PCB	3 storey an	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever		
4	3	71	3	9	Jagan Nath	30	14	Personal	WEB	2 storey	Rectangul	Symmetric	<30%	No cracks	Good state	Tile	Cantilever	No gaps between two	
5	4	72	4	9	Shree Pras	34	9	Personal	WEU	2 storey	Square	Symmetric	<30%	No cracks	Good state	Tile	Cantilever		
6	5	73	5	3	Madhab Pr	6	2	Personal	WCB	1 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	null		
7	6	74	6	3	Kiran Pras	5	9	Personal	WCB	1 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	null		
8	7	75	7	4	Rishi Ram	4	7	Personal	WCB	1 storey	Rectangul	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever		
9	8	76	8	3	Ram Prash	6	6	Personal	WCB	1 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever		
10	9	77	9	3	Durga Neu	3	4	Personal	WCB	1 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever	Adjoining building like	
11	10	78	10	6	Raju Neupane			Personal	PCB	3 storey an	Rectangul	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever		
12	11	79	11	5	Raju Neup	5	4	Personal	WCB	1 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever		
13	12	80	12	4	Sharada Na	13	4	Personal	WCB	2 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever	Staircase outside	
14	13	81	13	11	Sharada Na	4	5	Rent	WEU	2 storey	Square	Symmetric	<30%	Minor crac	Lacking M	Tile	Cantilever	Bamboo bush near ho	
15	14	82	14	7	Ranga Nat	22	6	Personal	WEB	2 storey	Square	Symmetric	<30%	No cracks	Poor main	CGI roofin	Cantilever	Adjoining building	
16	15	83	15	7	Bishnu Pra	5	6	Personal	WCB	3 storey an	Square	Asymmetri	<30%	No cracks	Good state	Slab caste	Cantilever		
17	16	84	16	10	Radha Dev	60	6	Personal	WEU	2 storey	Square	Symmetric	<30%	Minor crac	Lacking M	Thatch roc	Cantilever	Adjoining building and	
18	17	85	17	10	Keshav Pra	20	8	Personal	WEU	2 storey	Rectangul	Symmetric	<30%	No cracks	Lacking M	CGI roofin	Cantilever	House at road side, el	
19	18	86	18	5	Prakash Ni	6	5	Personal	WCB	2 storey	Square	Symmetric	>30%	No cracks	Good state	Slab caste	Cantilever		
20	19	87	19	5	Narayan Pr	7	20	Rent	PCB	3 storey an	Square	Symmetric	>30%	No cracks	Good state	Slab caste	Cantilever		
21	20	88	20	8	Birkha Mai	16	4	Personal	WEU	2 storey	Square	Symmetric	<30%	No cracks	Good state	Thatch roc	Cantilever		
22	21	95		7	Niranjan Pr	10	7	Personal	WEU	2 storey	Square	Symmetric	<30%	No cracks	Good state	CGI roofin	Cantilever	Risk of collapsing adj	
23	22	97		4	Sibaram Na	0.5	4	Personal	WCB	2 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	null		
24	23	98		9	Shyam Bah	28	6	Personal	WEU	2 storey	Square	Symmetric	<30%	No cracks	Good state	Tile	Cantilever	Adjoining cowshed lik	
25	24	99		9	Ram Krishi	9	5	Personal	WEU	3 storey an	Square	Symmetric	>30%	No cracks	Good state	CGI roofin	null		
26	25	100		3	Chandra P	11	3	Personal/F	WMB	1 storey	Square	Symmetric	<30%	No cracks	Good state	Slab caste	Cantilever	House at road side	
27																			

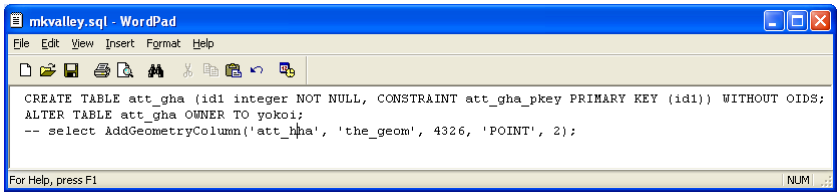
att_gha

Ready NUM

csv file "att_gha.csv" modified from the given Excel Worksheet "gha".
The column entitled "GIS_ID" is added and filled based on the assumption mentioned in the two slides before.
The rows of the column entitled "GIS_ID" that have not values can not be used. Then, "serial_no"="95", "97", "98", "99", "100" are not available.

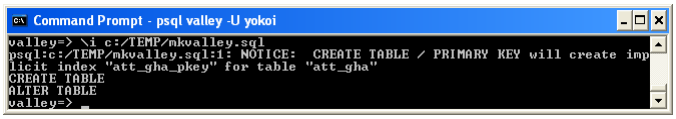
Create a table to store the attributes imported from csv file.

Edit the sql batch file “mkvalley.sql” as follows.

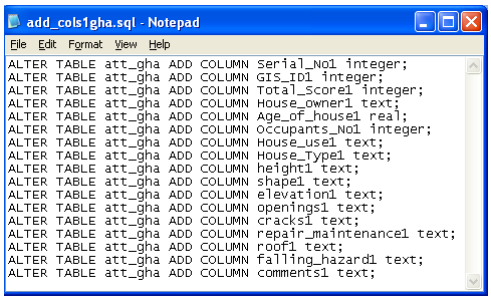


Double “-” at the beginning of the third lines denote “This line is a comment”. This line is ignored at executing the sql batch file.

Open “Command Prompt” of PostgreSQL for the database “valley”, user “yokoi” and its password.
Execute “mkvalley.sql” using “¥i” command.



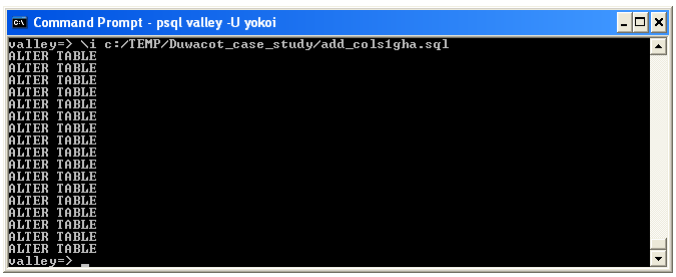
Note:It is possible to achieve the same result by executing PostgreSQL commands in “mkvalley.sql” one by one by manual typing or copy & paste from “mkvalley.sql”.



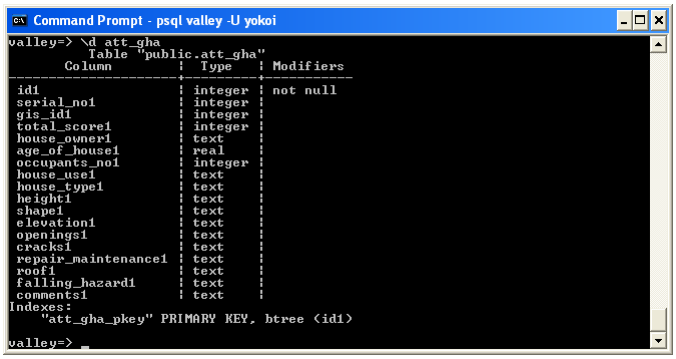
Edit the sql batch file “add_cols1gha.sql” using WordPad as shown in the top figure.

Execute it using “¥i” command as shown in the middle figure.

¥i mysqlfile



Confirm the table “att_gha”.

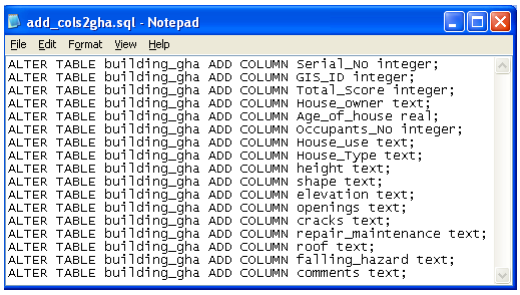


Then, copy the attributes from “att_gha.csv” file to table as shown in the bottom figure.

¥copy mytable FROM mycsvfile WITH CSV HEADER

Add columns to the table of the Shape file to store the attributes.

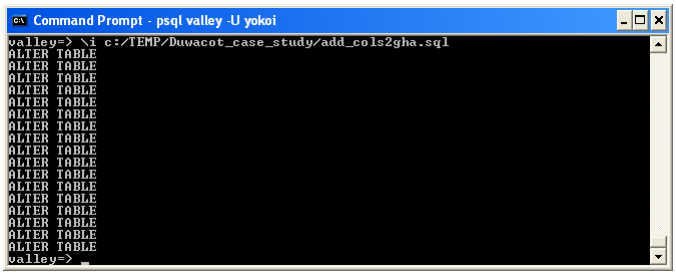
“building_gha” has geometry and ID only.



Edit the sql batch file “add_cols2gha.sql” using WordPad as shown in the top figure.

Execute it using “¥i” command as shown in the middle figure.

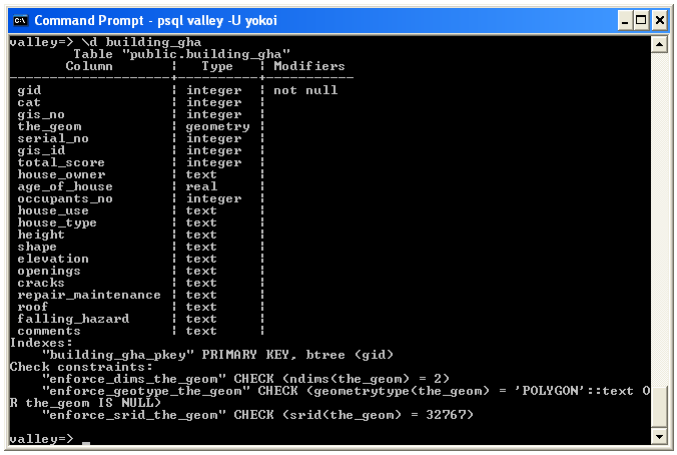
¥i mysqlfile



Confirm the columns of the table “building_gha”.

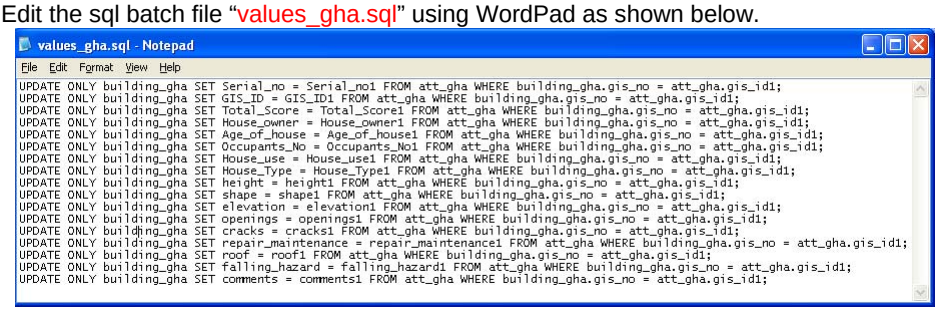
¥d mytable

Note that the primary key is set at “gid” and srid(the_geom) is set “-1”. The latter means that the information of coordinates used at georeferencing is not attached to the table yet.



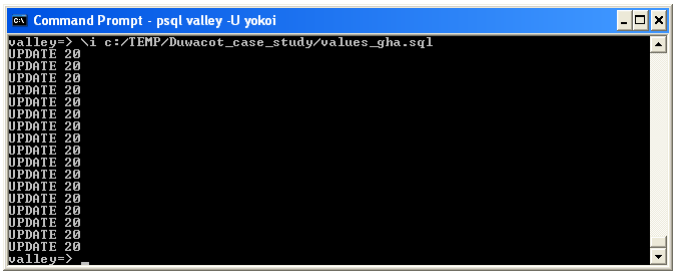
Copy the corresponding attribute values from “att_ga” to “building_ga”.

Edit the sql batch file “values_gha.sql” using WordPad as shown below.

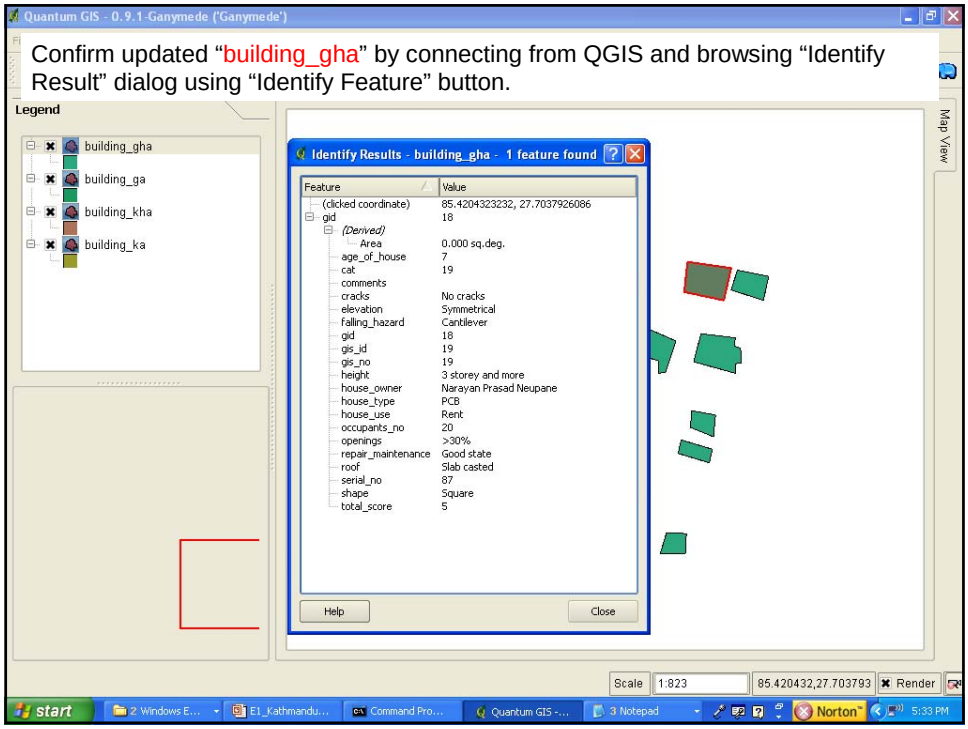


Execute it using “¥i” command as shown below.

¥i mysqlfile



Now, “building_gha” has attributes and geometry together.



Change PRIMARY KEY.

Primary key is set to "gid" and changed to "serial_no" here.

```
Command Prompt - psql valley -U yokoi
valley=> alter table only building_gha drop constraint building_gha_pkey;
ALTER TABLE
valley=> alter table building_gha add constraint building_gha_pkey primary key (
serial_no);
NOTICE:  ALTER TABLE / ADD PRIMARY KEY will create implicit index "building_gha_
pkey" for table "building_gha"
ALTER TABLE
valley=>
```

Drop the constraint PRIMARY KEY once and set it again to "serial_no".

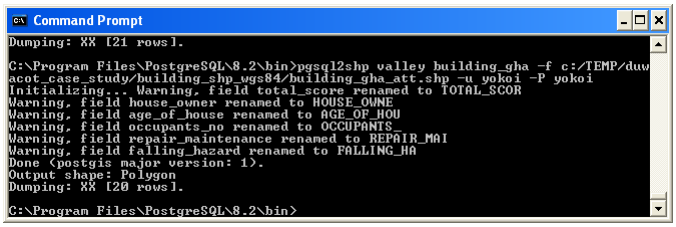
```
Command Prompt - psql valley -U yokoi
valley=> alter table building_gha drop column gid;
ALTER TABLE
valley=> alter table building_gha drop column cat;
ALTER TABLE
valley=> alter table building_gha drop column gis_no;
ALTER TABLE
valley=> \d building_gha
      Table "public.building_gha"
       Column        |     Type     | Modifiers
---------------------+--------------+-----------
 the_geom            | geometry     |
 serial_no           | integer      | not null
 gis_id              | integer      |
 total_score         | integer      |
 house_owner         | text         |
 age_of_house        | real         |
 occupants_no        | integer      |
 house_use           | text         |
 house_type          | text         |
 height              | text         |
 shape               | text         |
 elevation           | text         |
 openings            | text         |
 cracks              | text         |
 repair_maintenance  | text         |
 roof                | text         |
 falling_hazard      | text         |
 comments            | text         |
Indexes:
    "building_gha_pkey" PRIMARY KEY, btree (serial_no)
Check constraints:
    "enforce_dims_the_geom" CHECK (ndims(the_geom) = 2)
    "enforce_geotype_the_geom" CHECK (geometrytype(the_geom) = 'POLYGON'::text O
R the_geom IS NULL)
    "enforce_srid_the_geom" CHECK (srid(the_geom) = 32767)

valley=> _
```

Drop the columns "gid", "cat" and "gis_no" that are not used later.

Then, confirm "building_gha" again.

Export to Shape file for interim back up using “pgsql2shp”.

Quit from “Command Prompt” of PostgreSQL using “¥q”.

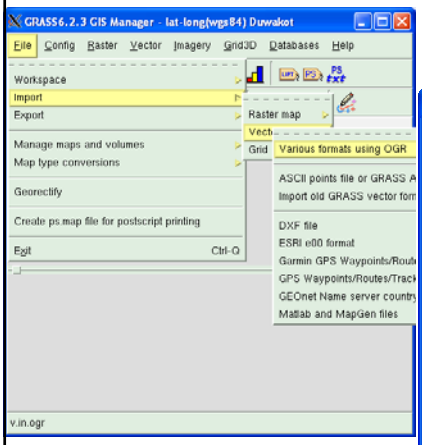


Pgsql2shp mydatabase mytable –f myshpfile –u myusername –P mypassword

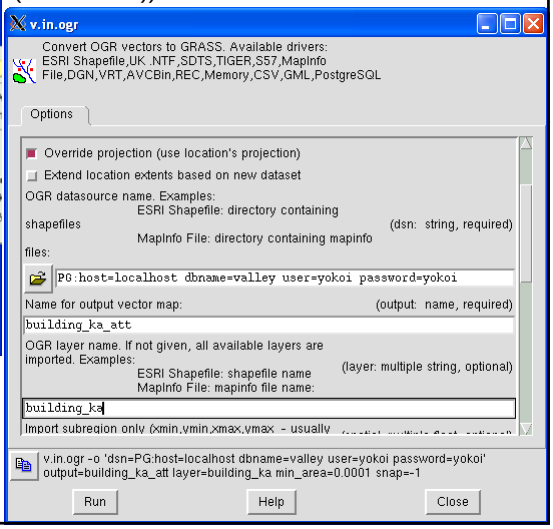
Note that long column names are shorten automatically.

Open GRASS with LOCATION=lat-long(wgs84), MAPSET=Duwakot.

Import table “building_ka” from PostgreSQL to GRASS using “v.in.ogr”.

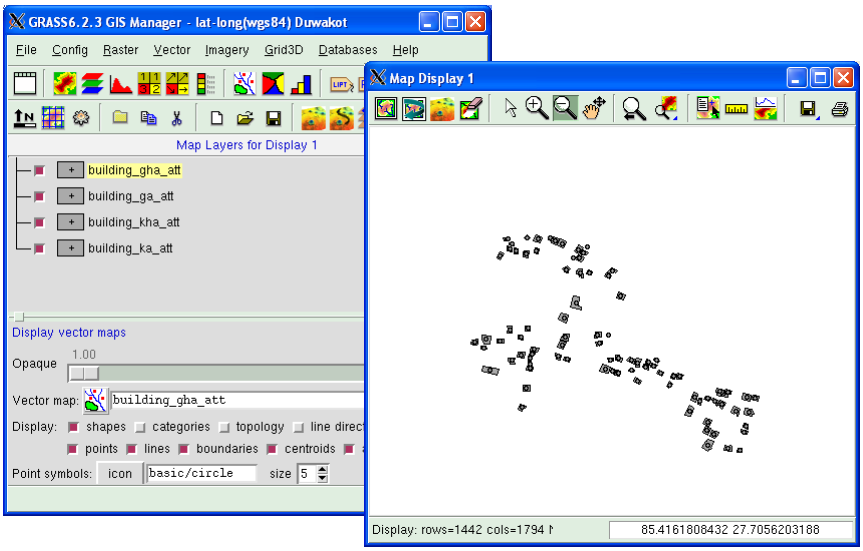


Option “-o” means that the coordinate system of the current LOCATION (for this example, wgs84 (srid=32767)) is used.

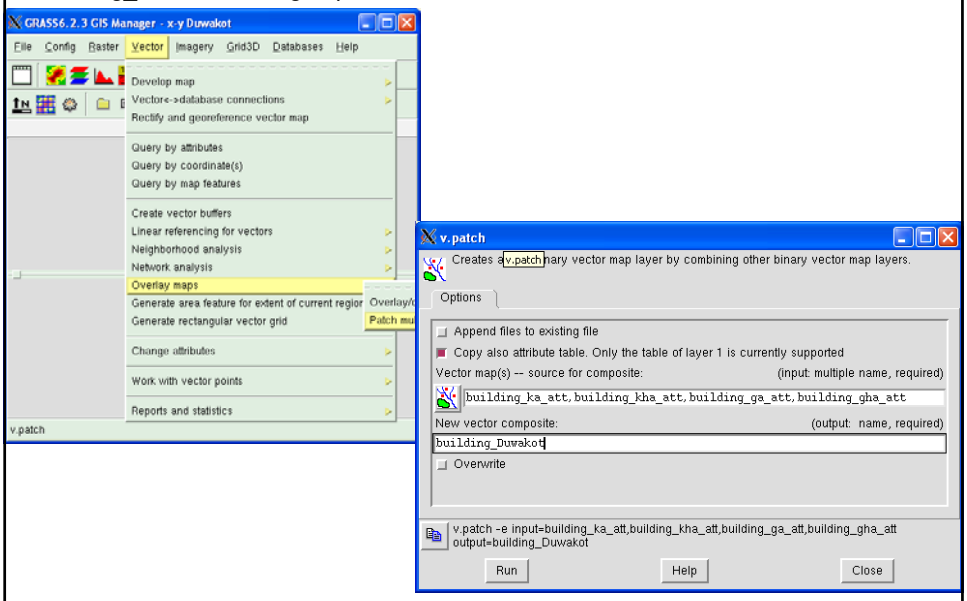


Repeat it for other three layers.

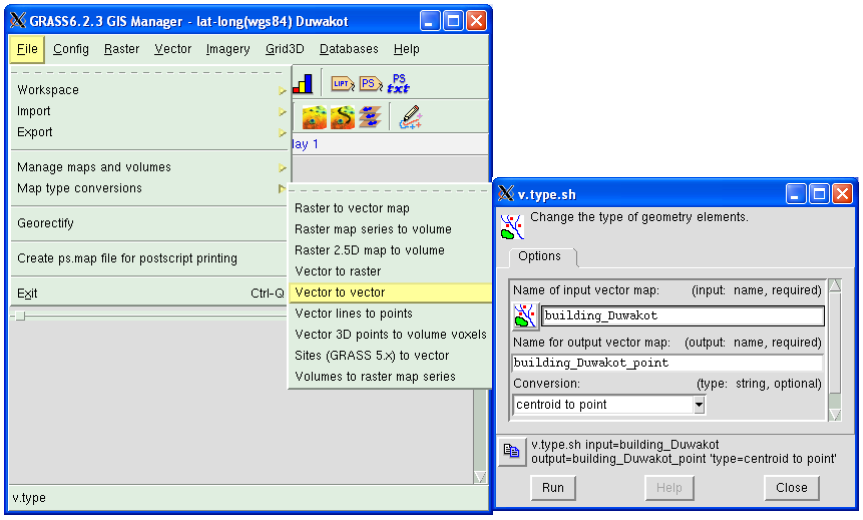
Confirm four imported vector maps using “Map Display”.



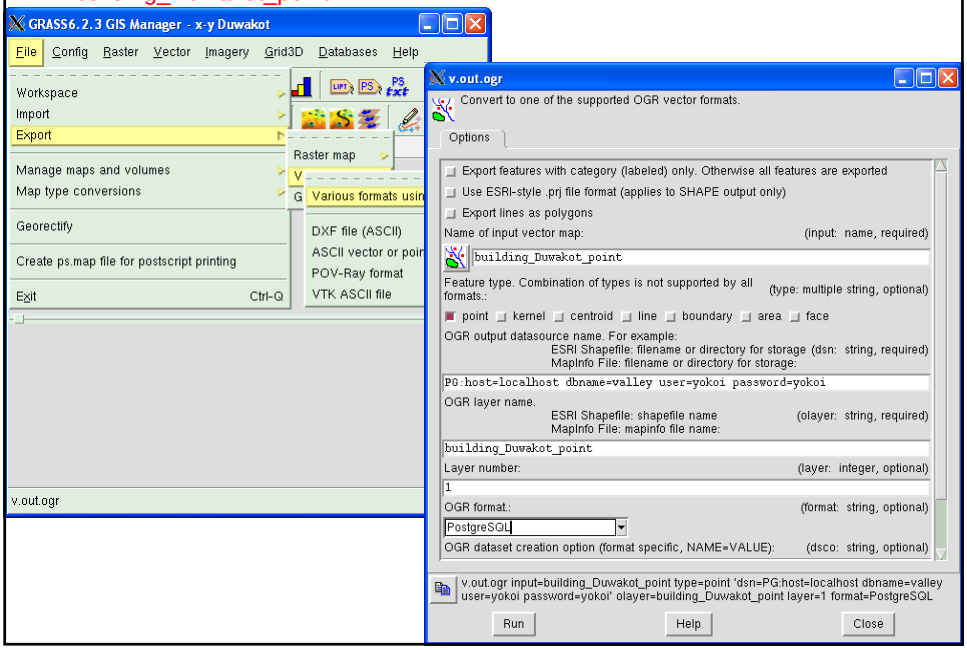
Combine four vector maps to one “building_Duwakot” using “v.patch”.



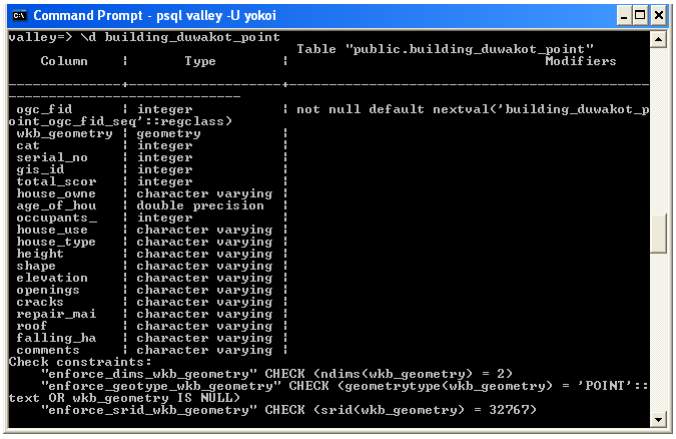
Extract the centroids from “building_Duwakot” and change the type to “POINT” and store them in “building_Duwakot_point”.



Export vector map “building_Duwakot_point” from GRASS to PostGIS layer “building_Duwakot_point”.

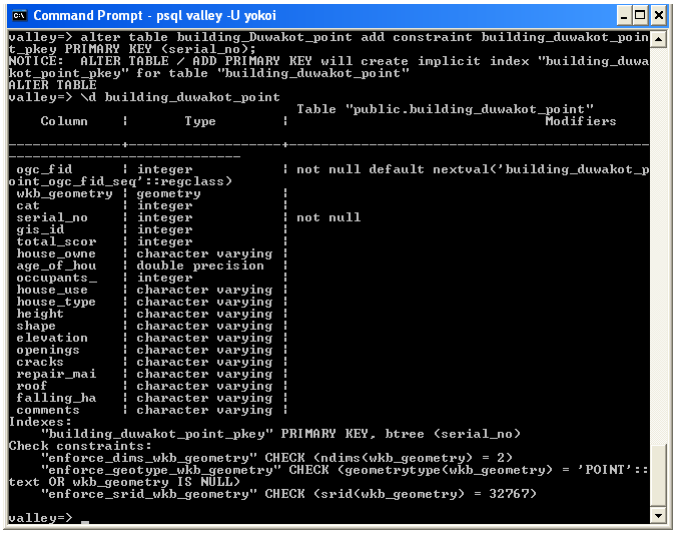


Confirm the imported table “building_Duwakot_point”.



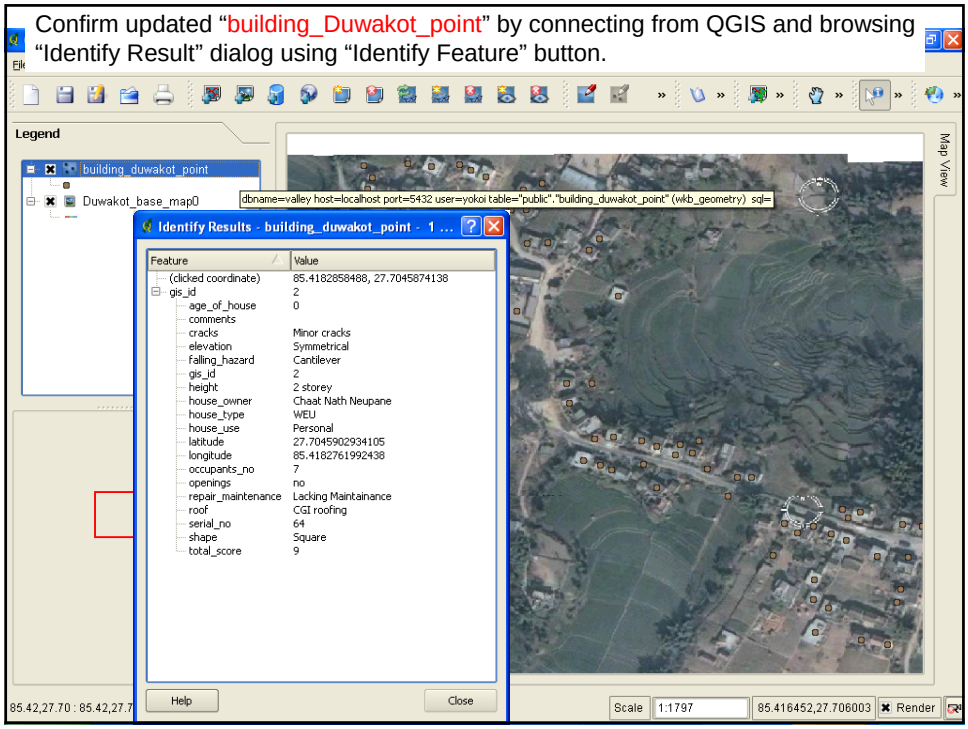
Note that Primary Key is not set, the geometry is stored in the column “wkb_geometry” and srid(wkb_geometry) is set at 32767.

Add Primary Key constraint to the column “serial_no”.
Then, confirm the table “building_Duwakot_point” again.

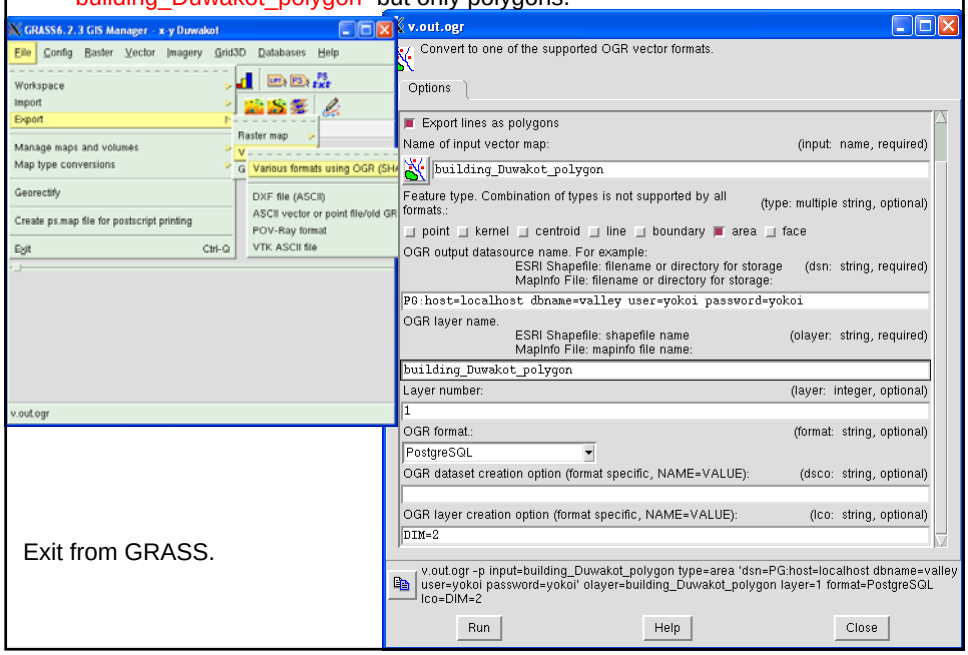


Note that Primary Key is set at “serial_no”.

Confirm updated “building_Duwakot_point” by connecting from QGIS and browsing “Identify Result” dialog using “Identify Feature” button.

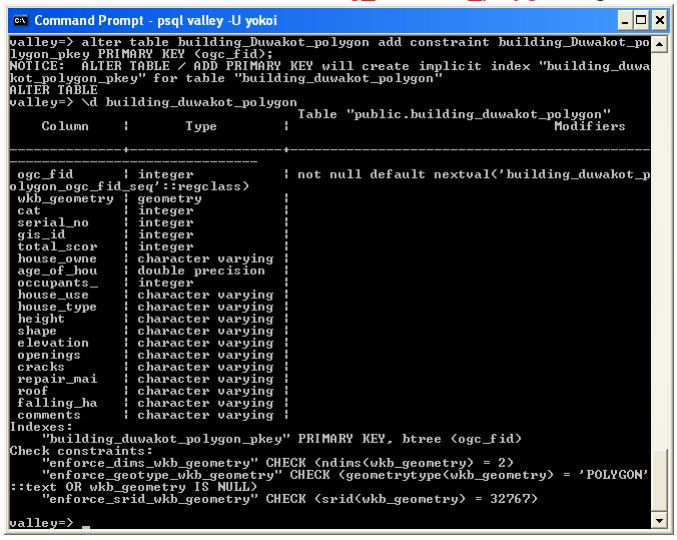


Export vector map “building_Duwakot” from GRASS to PostGIS layer “building_Duwakot_polygon” but only polygons.



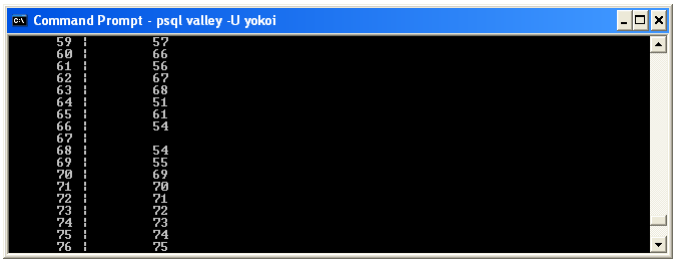
Exit from GRASS.

Add Primary Key constraint to the column “ogc_fid”.
Then, confirm the table “building_Duwakot_polygon” again.



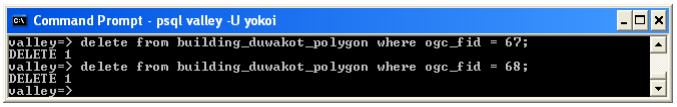
Note: As “serial_no” has duplicated data, it can not be Primary Key.

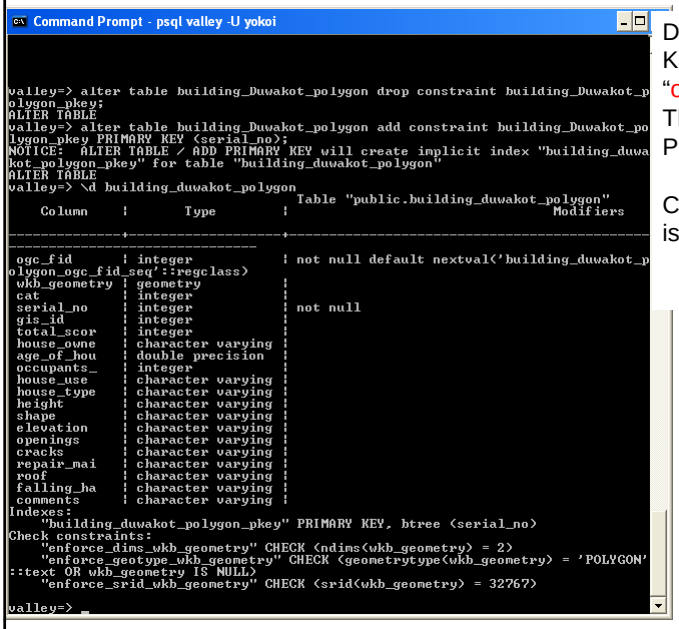
Find the duplicated data of “serial_no” using
select ogc_fid,serial_no from building_Duwakot_polygon;



Duplication is found at ogc_fid=66 and 68. Besides, null data is found at ogc_fid=67.

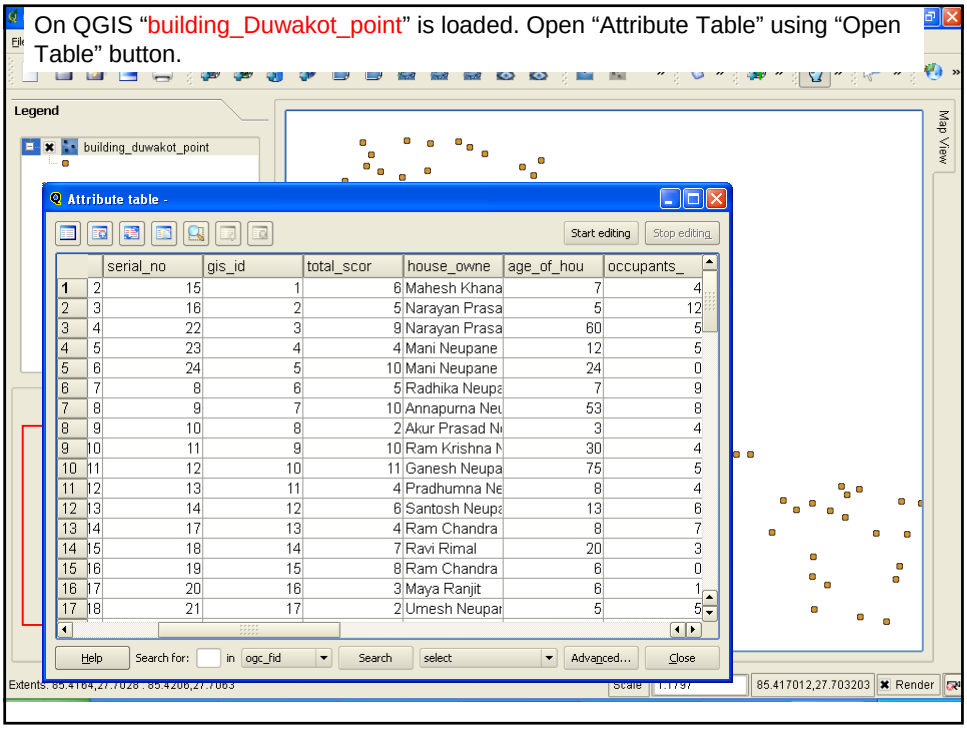
Then, remove these rows as follows.



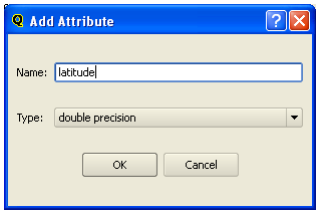


Drop constraint Primary Key that was set at "ogc_fid".
Then, add constraint Primary Key to "serial_no".

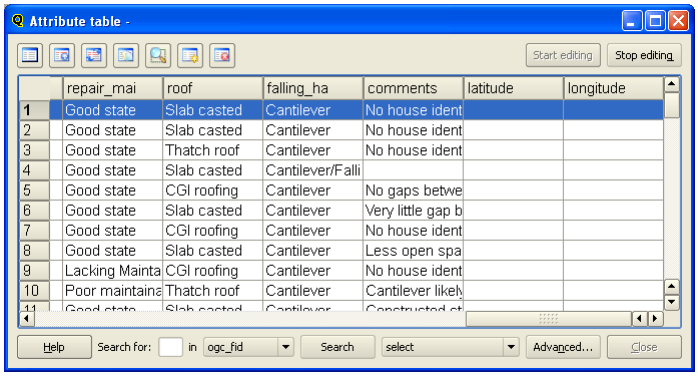
Confirm that Primary Key is set at "serial_no".



	serial_no	gis_id	total_scor	house_owne	age_of_hou	occupants_
1	2	15	1	6 Mahesh Khana	7	4
2	3	16	2	5 Narayan Prasa	5	12
3	4	22	3	9 Narayan Prasa	60	5
4	5	23	4	4 Mani Neupane	12	5
5	6	24	5	10 Mani Neupane	24	0
6	7	8	6	5 Radhika Neupa	7	9
7	8	9	7	10 Annapurna Neu	53	8
8	9	10	8	2 Akur Prasad N	3	4
9	10	11	9	10 Ram Krishna N	30	4
10	11	12	10	11 Ganesh Neupa	75	5
11	12	13	11	4 Pradhumna Ne	8	4
12	13	14	12	6 Santosh Neupa	13	6
13	14	17	13	4 Ram Chandra	8	7
14	15	18	14	7 Ravi Rimal	20	3
15	16	19	15	8 Ram Chandra	6	0
16	17	20	16	3 Maya Ranjit	6	1
17	18	21	17	2 Umesh Neupar	5	5



Add new columns “latitude” and “longitude” using “Start Editing” and “New Column” button. Then save the change using “Stop Editing” and “Save” button. Then, “Close” of “Attribute Table”.

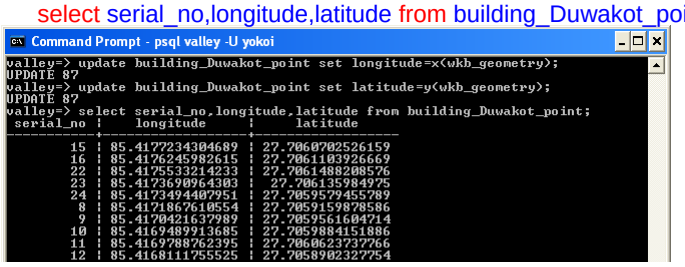


Extract the values of longitude and latitude from “wkb_geometry” column.

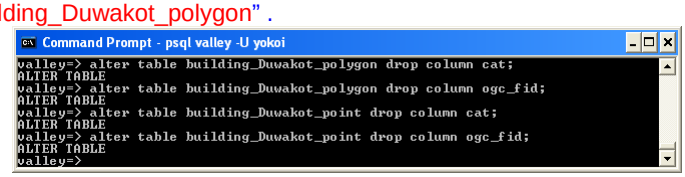
```
update building_Duwakot_point set longitude=x(wkb_geometry);
update building_Duwakot_point set longitude=x(wkb_geometry);
```

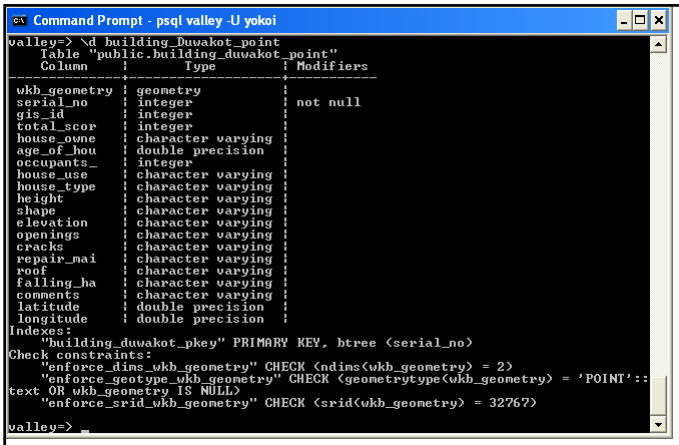
Then confirm the update using

```
select serial_no,longitude,latitude from building_Duwakot_point;
```

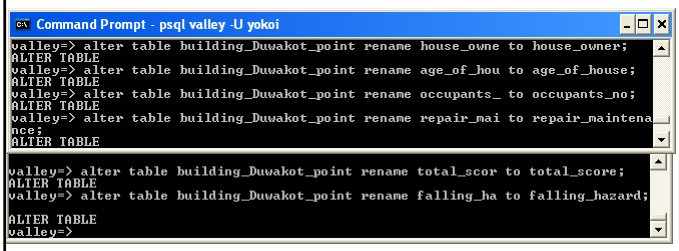


Drop unnecessary columns from “building_Duwakot_point” and “building_Duwakot_polygon” .

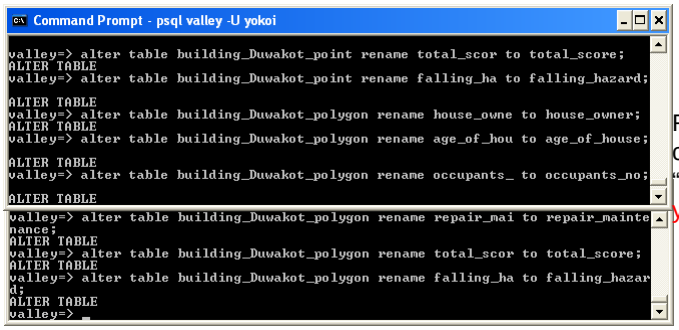




Confirm the table.

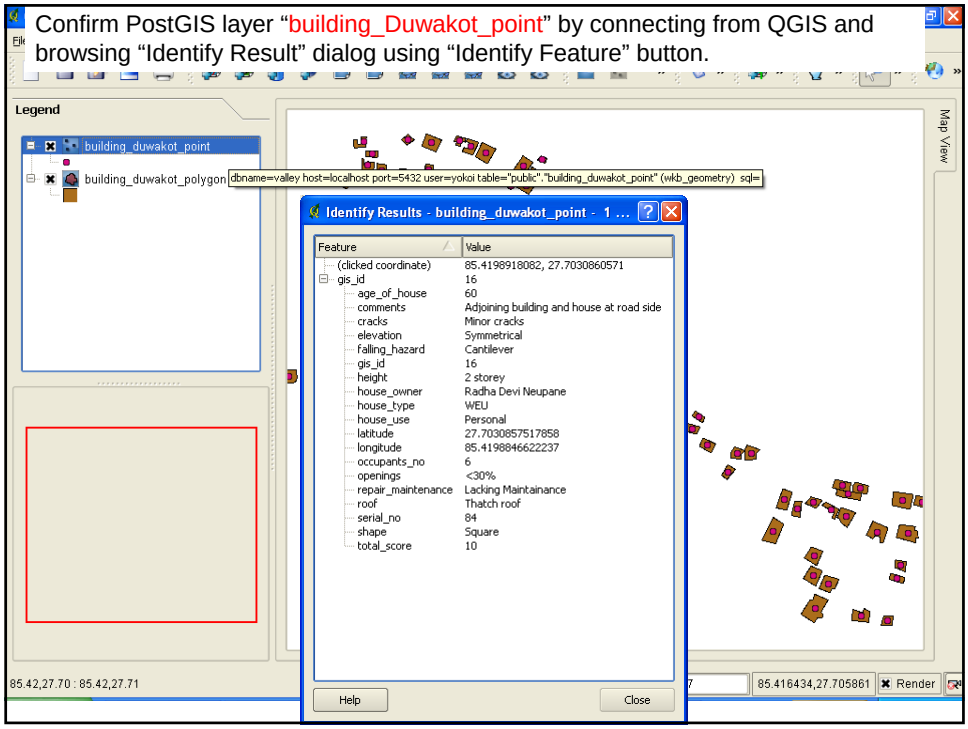


Rename the shorten column names of "building_Duwakot_point".

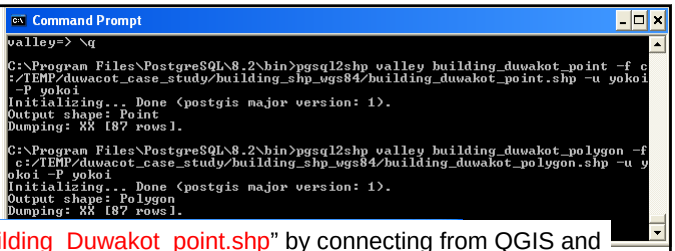


Rename the shorten column names of "building_Duwakot_polygon".

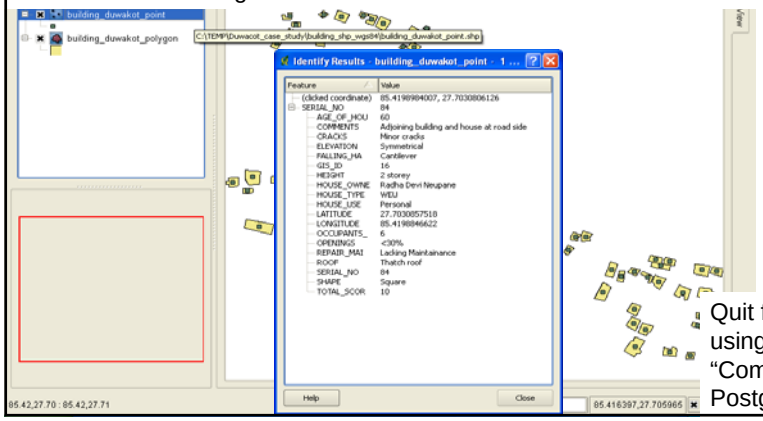
Confirm PostGIS layer “building_Duwakot_point” by connecting from QGIS and browsing “Identify Result” dialog using “Identify Feature” button.



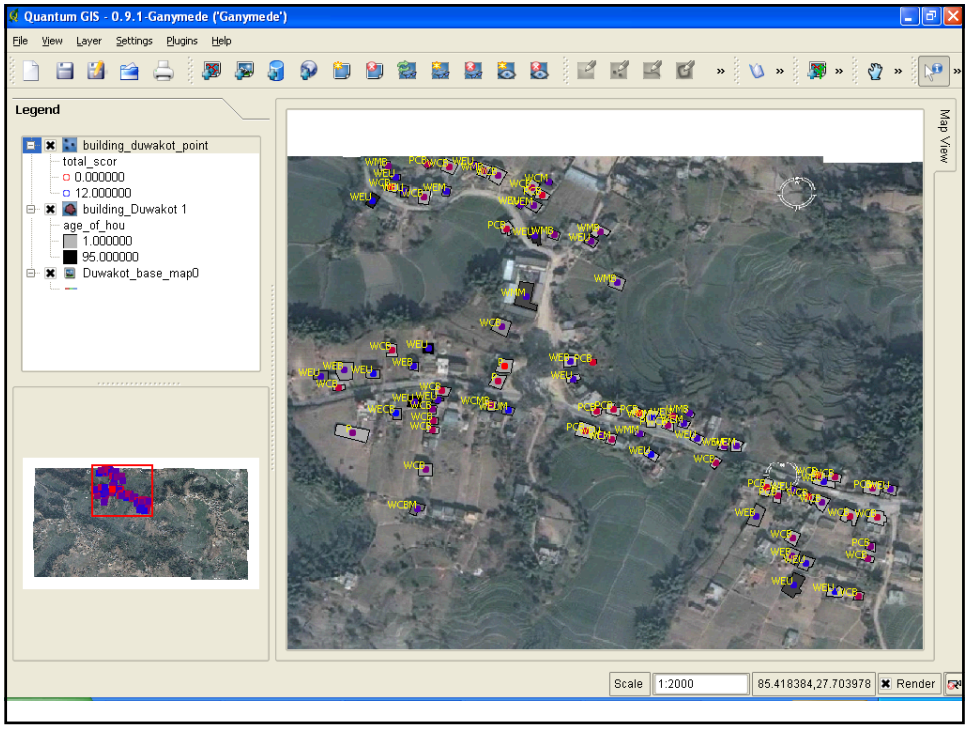
Back up to shape files



Confirm the backuped “building_Duwakot_point.shp” by connecting from QGIS and browsing “Identify Result” dialog using “Identify Feature” button. Long column names are shorten again.



Quit from PostgreSQL using “¥q”. Exit from “Command Prompt” of PostgreSQL .


Quantum GIS - 0.9.1-Ganymede ('Ganymede')
File View Layer Settings Plugins Help
Legend
building_duwakot_point
total_scor
0.000000
12.000000
building_Duwakot 1
age_of_hou
1.000000
95.000000
Duwakot_base_map0
Map View
Scale 1:2000
85.418384,27.703978
Render