

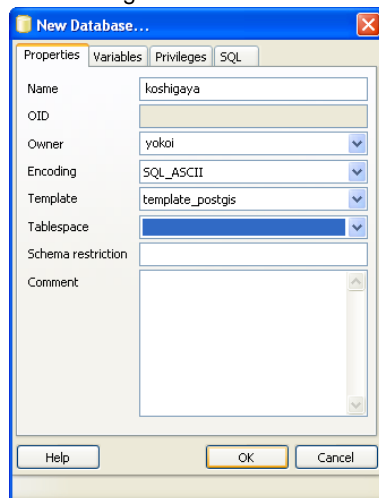
6 Attribute actions to vector layer

QGIS can perform an action based on the attributes of a feature. The actions, for example, running a program with arguments built from the attributes or passing parameters to a web reporting software.

Set new database “**koshigaya**” of PostgreSQL using pgAdminIII. This procedure has been described in “**1_installation&Setting.ppt**”.

Open pgAdminIII and login as “**superuser**”.

Click the right button on “**Database**” and select “**New Database**” by clicking the left.



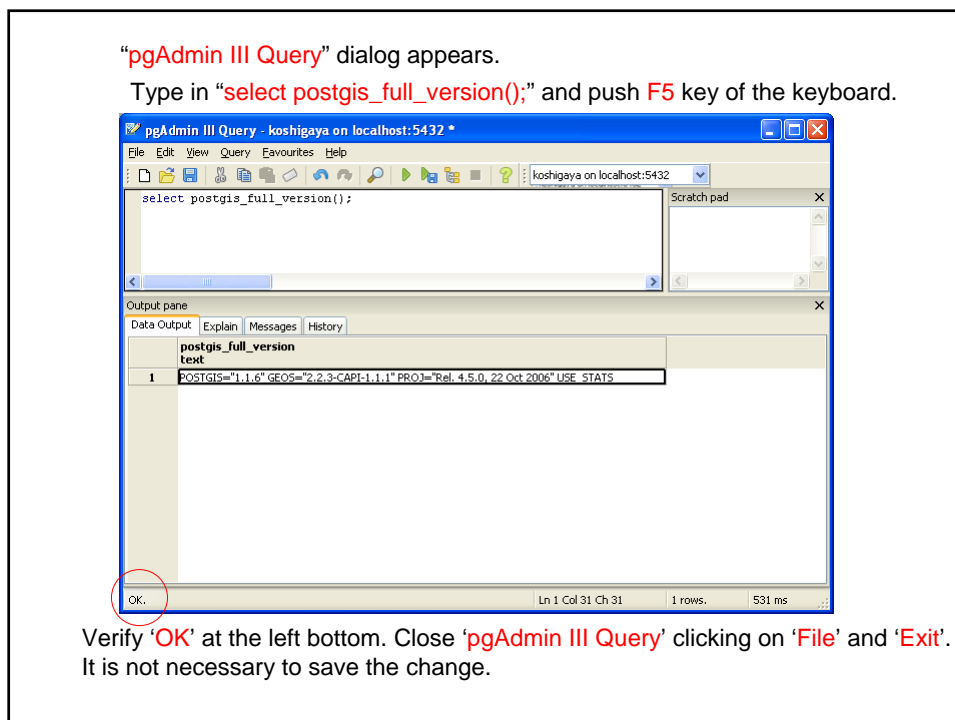
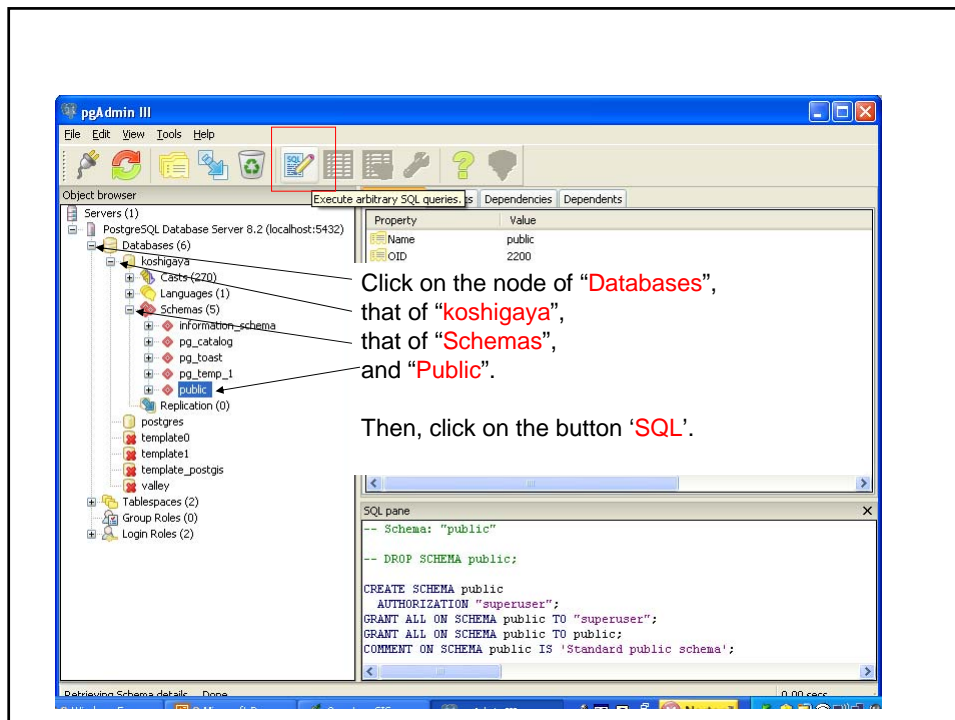
“**New Database**” dialog opens.

Type in Name of new database “**koshigaya**”.

Select Owner ‘**yokoi**’.

Select ‘**template_postgis**’ to activate PostGIS functionality.

Then, click on ‘**OK**’.

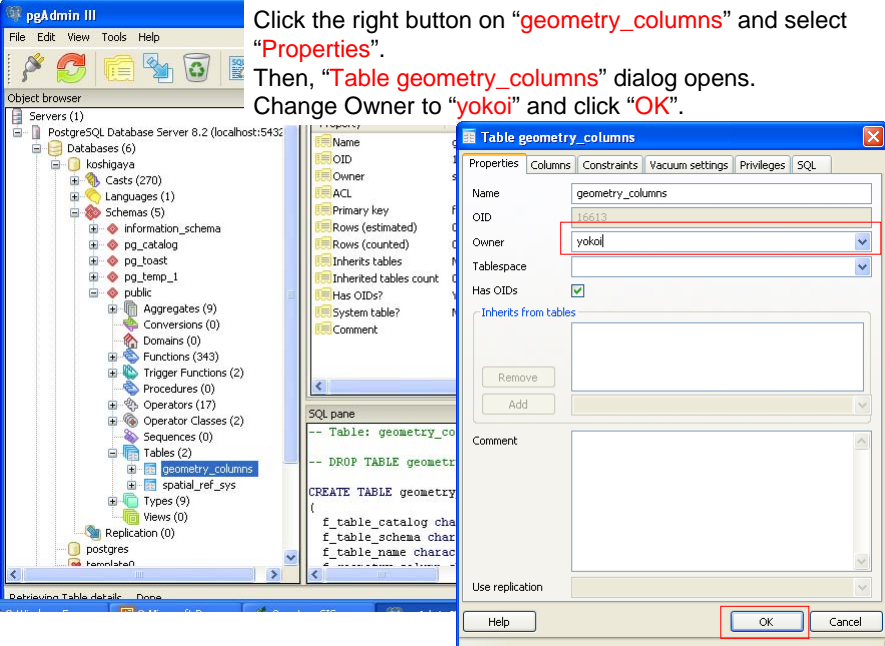


Click on the nodes of “koshigaya”, “schemas”, “public” and “table”.

Click the right button on “geometry_columns” and select “Properties”.

Then, “Table geometry_columns” dialog opens.

Change Owner to “yoko” and click “OK”.

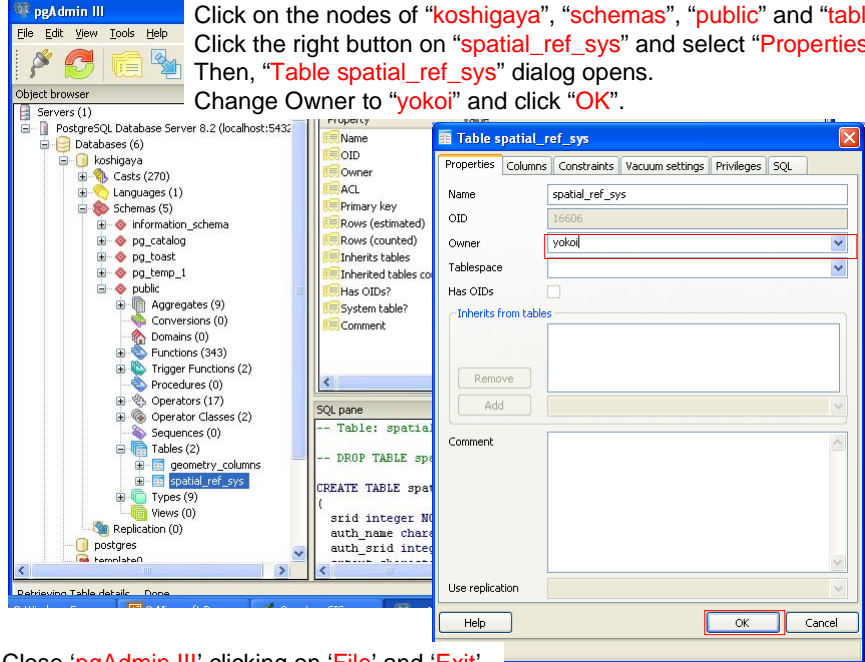


Click on the nodes of “koshigaya”, “schemas”, “public” and “table”.

Click the right button on “spatial_ref_sys” and select “Properties”.

Then, “Table spatial_ref_sys” dialog opens.

Change Owner to “yoko” and click “OK”.



Close ‘pgAdmin III’ clicking on ‘File’ and ‘Exit’.

Add new table "obspoints" in the new database "koshigaya". This procedure has been described in "2_creating_vector_layer.ppt".

Copy the sql batch file "D:/batch_sql/mkpoint.sql" to "C:/TEMP/mkkoshigaya.sql".

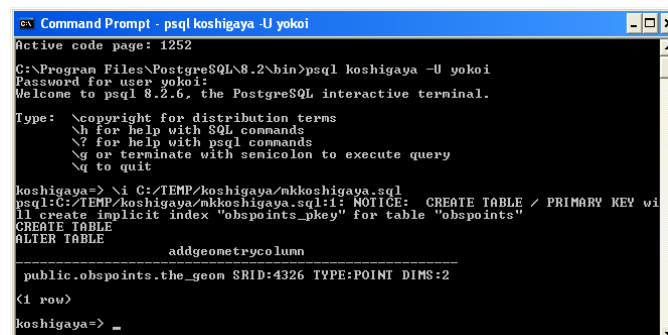
Edit "C:/TEMP/mkkoshigaya.sql" using WordPad as shown below.

```
CREATE TABLE obspoints (id1 integer NOT NULL, CONSTRAINT
obspoints_pkey PRIMARY KEY (id1)) WITHOUT OIDS;
ALTER TABLE obspoints OWNER TO yokoi;
select AddGeometryColumn('obspoints', 'the_geom', 4326, 'POINT', 2);
```

where the changed parts are shown blue, "4326" denotes latitude and longitude in wgs84.

Execute the sql batch file "C:/TEMP/mkkoshigaya.sql" using "¥" command.

¥ C:/TEMP/koshigaya/mkkoshigaya.sql



```
Command Prompt - psql koshigaya -U yokoi
Active code page: 1252
C:\Program Files\PostgreSQL\8.2\bin>psql koshigaya -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
koshigaya=> \i C:/TEMP/koshigaya/mkkoshigaya.sql
psql:C:/TEMP/koshigaya/mkkoshigaya.sql:1: NOTICE: CREATE TABLE / PRIMARY KEY wi
ll create implicit index "obspoints_pkey" for table "obspoints"
CREATE TABLE
ALTER TABLE
      addgeometrycolumn
-----
public.obspoints.the_geom SRID:4326 TYPE:POINT DIMS:2
<1 row>
koshigaya=> _
```

Add new table "phopoints" in the database "koshigaya".

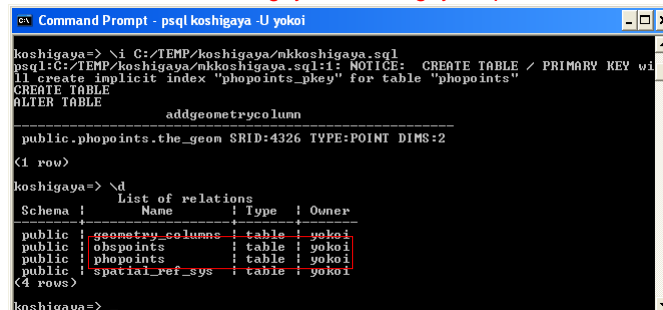
Edit "C:/TEMP/mkkoshigaya.sql" using WordPad as shown below.

```
CREATE TABLE phopoints (id1 integer NOT NULL, CONSTRAINT
phopoints_pkey PRIMARY KEY (id1)) WITHOUT OIDS;
ALTER TABLE phopoints OWNER TO yokoi;
select AddGeometryColumn('phopoints', 'the_geom', 4326, 'POINT', 2);
```

where the changed parts are shown blue, "4326" denotes latitude and longitude in wgs84.

Execute the sql batch file "C:/TEMP/mkkoshigaya.sql" using "¥" command.

¥ C:/TEMP/koshigaya/mkkoshigaya.sql

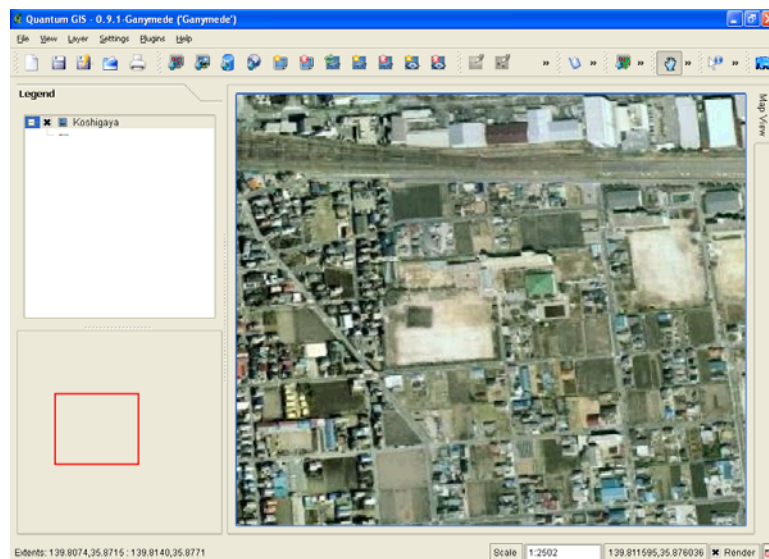


```
Command Prompt - psql koshigaya -U yokoi
koshigaya=> \i C:/TEMP/koshigaya/mkkoshigaya.sql
psql:C:/TEMP/koshigaya/mkkoshigaya.sql:1: NOTICE: CREATE TABLE / PRIMARY KEY wi
ll create implicit index "phopoints_pkey" for table "phopoints"
CREATE TABLE
ALTER TABLE
      addgeometrycolumn
-----
public.phopoints.the_geom SRID:4326 TYPE:POINT DIMS:2
<1 row>
koshigaya=> \d
List of relations
Schema | Name          | Type  | Owner
-----+-----+-----+-----
public | geometry_columns | table | yokoi
public | obspoints      | table | yokoi
public | phopoints      | table | yokoi
public | spatial_ref_sys | table | yokoi
<4 rows>
koshigaya=> _
```

Confirm the creation of column "obspoints" and "phopoints".

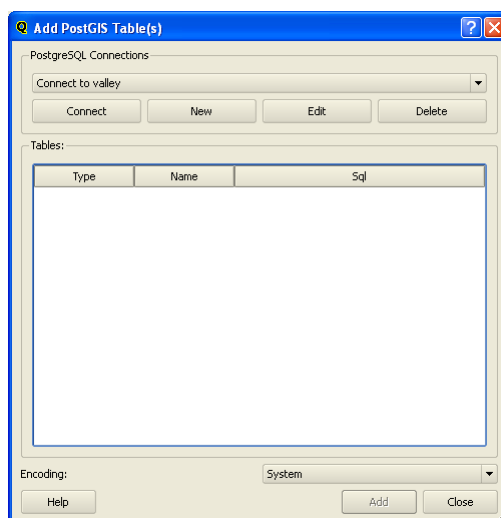
Then, "¥q" and "exit".

Open QGIS and load a raster layer that is used as Basemap.
For this example, a part of Koshigaya city is used with geographical coordinates of wgs84 .

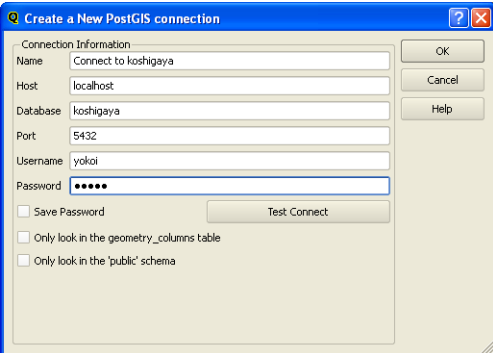


Capture observation points and register them in postGIS layer “**obspoints**”
The procedure is described in “**3_Input_Data_To_Vector_Layers.ppt**”.

First, connect to the PostGIS layer “**obspoints**”.



Open “**Add PostGIS**” dialog using
“**Add a postGIS layer**” button.
Then, click “**New**” button.



Type in as shown left.

Name: **Connect to Koshigaya** (arbitrary)

Host: **localhost** (fixed)

Database: **koshigaya** (target database)

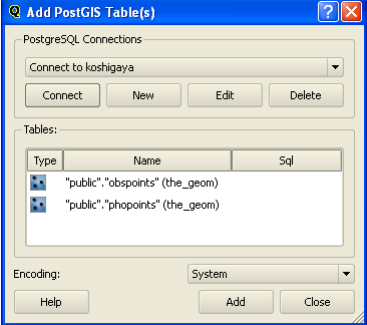
Port: **5432** (Fixed)

Username: **yokoi**

Password: *********

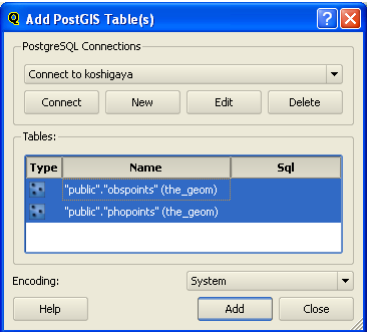
Check it by clicking on **“Text Connect”** button.

Then, click **“OK”**.

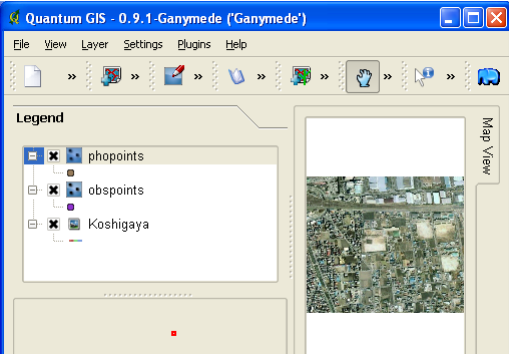


Click on **“Connect”** button of **“Add PostGIS”** dialog.

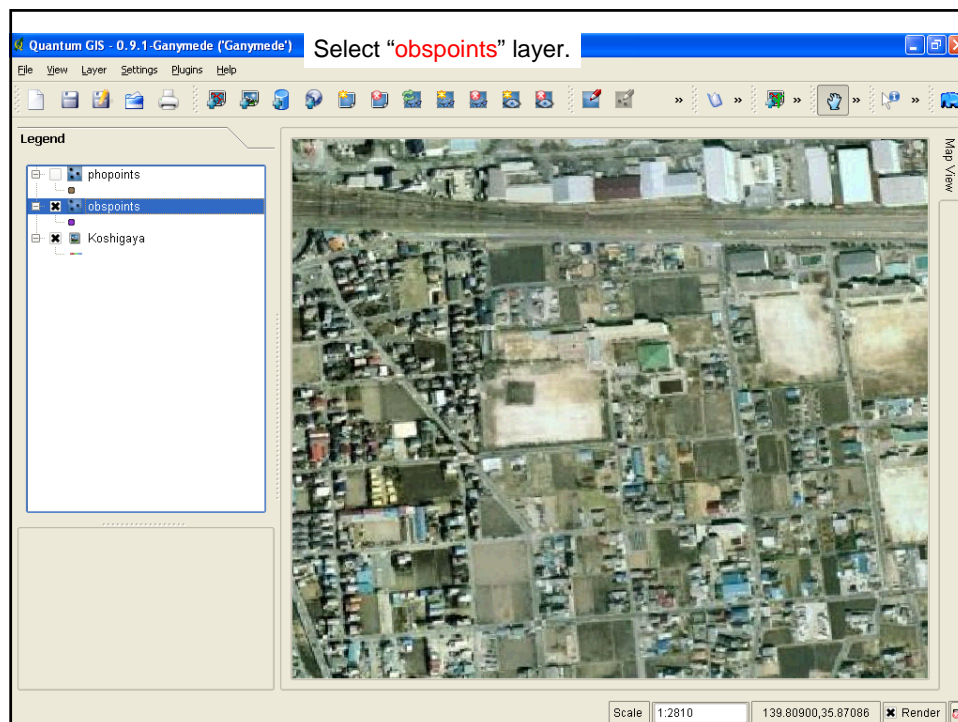
“obspoints” and **“phopoints”** layers are shown.



Select both of **“obspoints”** and **“phopoints”** layers and click **“Add”**.



“obspoints” and **“phopoints”** layers are connected to QGIS.

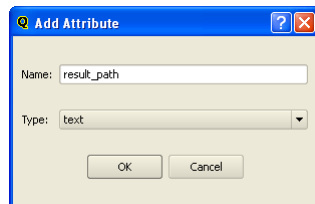


Open "Attribute Table" using "Open Table" button.

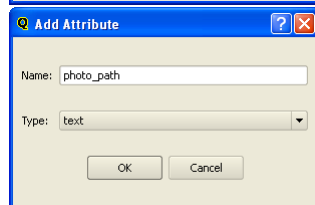
Click "Start Editing" button.

Click "New Column" button. "Add Attribute" dialog opens. Type "latitude" in Name and select "double precision". Click "OK".

Click "New Column" button. "Add Attribute" dialog opens. Type "longitude" in Name and select "double precision". Click "OK".



Click “New Column” button.
 “Add Attribute” dialog opens.
 Type “rest_path” in Name and select
 “text”.
 Click “OK”.

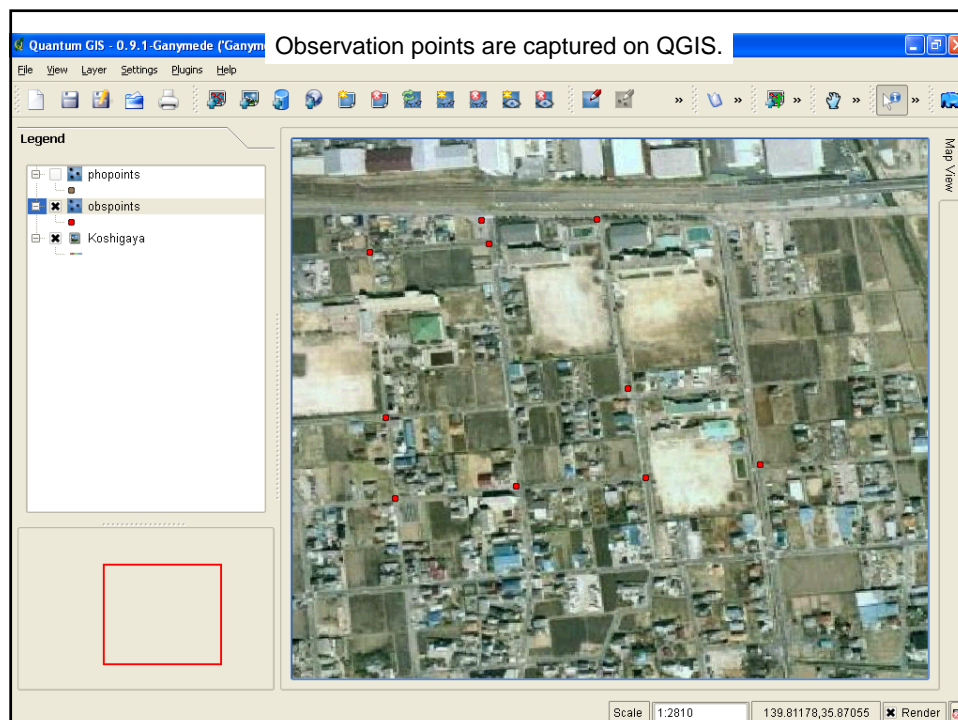


Click “New Column” button.
 “Add Attribute” dialog opens.
 Type “photo_path” in Name and select
 “text”.
 Click “OK”.

Add “sta_id”, “obs1”, “obs2” and
 “obs3” by following the same way with
 type “text”.

Click “Stop Editing” button of “Attribute
 Table”. Then “Save” and “Close”.

Then, create POINT data on “obspoints” layer. The procedure is described in
 “3_Input_Data_To_Vector_Layers.ppt”.



Convert the PostGIS layer ("**obspoints**") to Shape file.

The current version of QGIS does not automatically re-connect to PostGIS layer when the Project once saved is open again. Then, it is necessary to set Action again. In order to prevent this troublesome procedure that require every time, the PostGIS layer including Action is converted to Shape file and stored in a directory.

Open "**Command Prompt**" of PostgreSQL.

pgsql2shp -h localhost -u yokoi -P *****

Host name

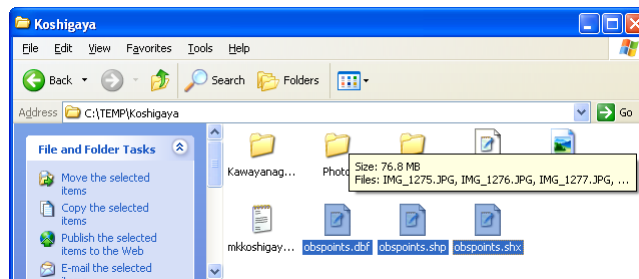
Username of input database and its password

Output Shape file name with its path

Input Database Name

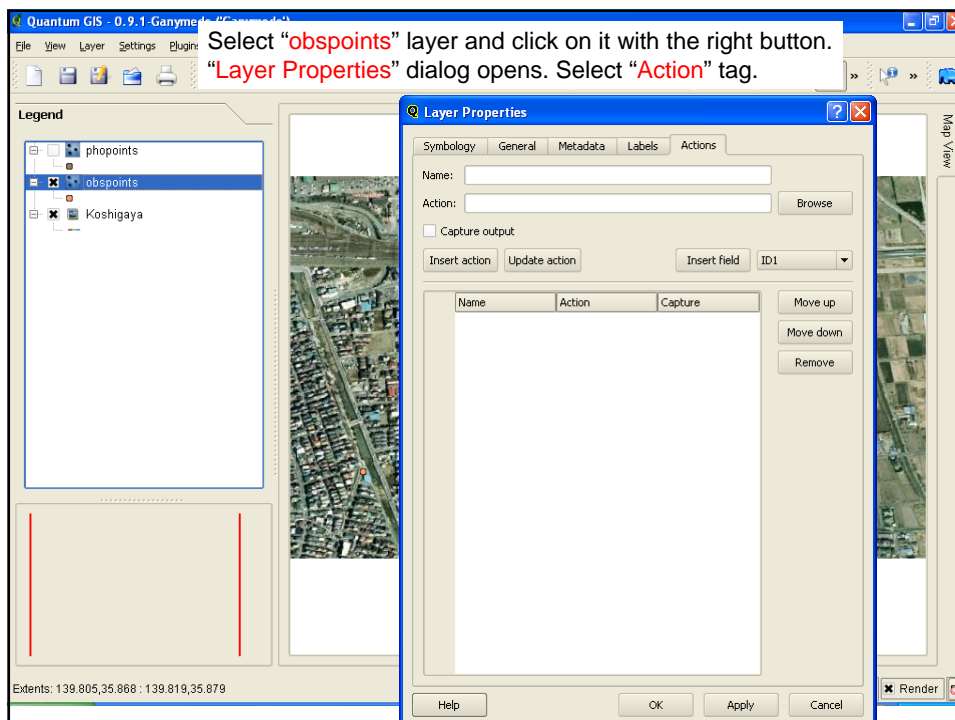
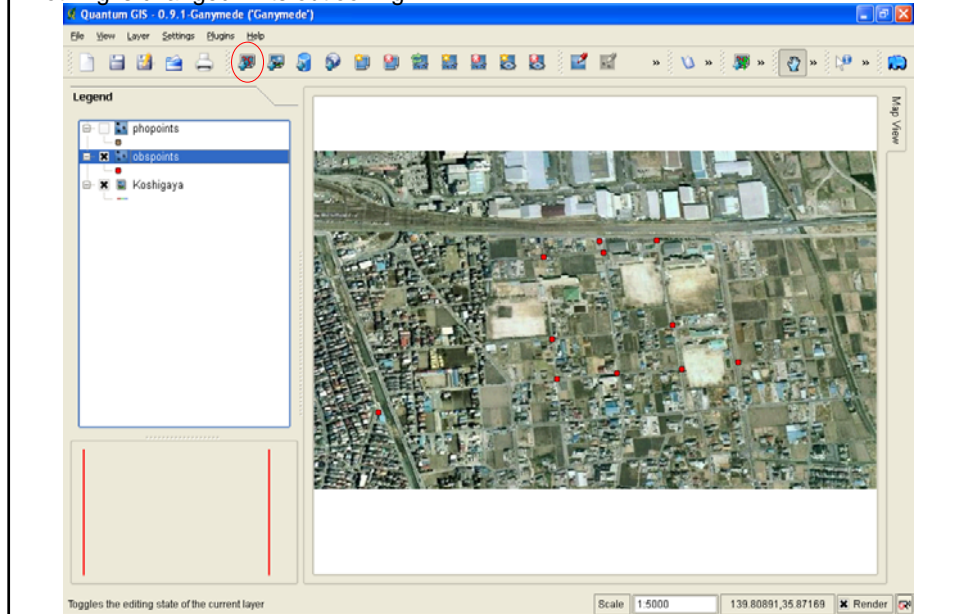
Input Table Name

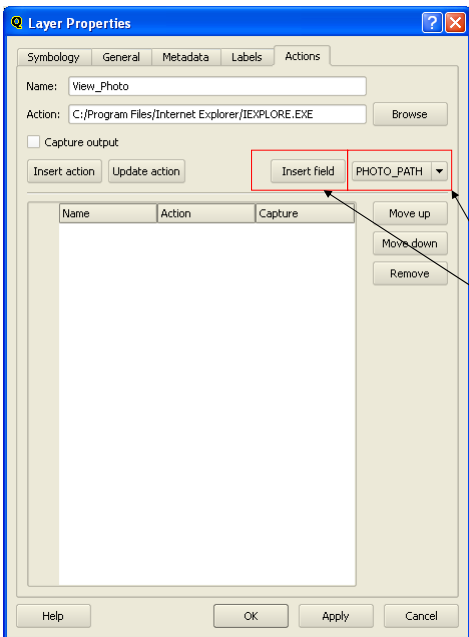
-f C:/TEMP/koshigaya/obspoints.shp koshigaya obspoints



Shape file created in "**C:/TEMP/koshigaya**".
Close "**Command Prompt**" using "**exit**".

Back to QGIS. Remove PostGIS layer “**obspoints**” and add vector layer “**obspoints.shp**” using “**Add a Vector Layer**” button. Nothing is changed in its outlook.

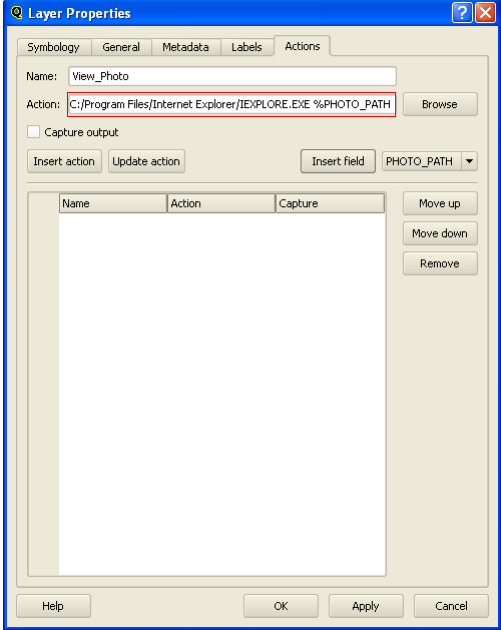




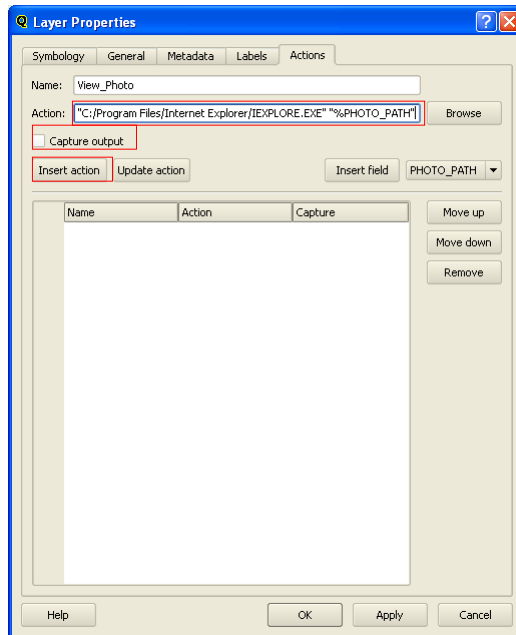
Type in as shown left:
 Name: **name of action (arbitrary)**
 Action: **application name with full path**
 For this example, Internet Explorer is selected. Use **"Browse"** button if necessary.
 Add a space after **program name with full path**

Select **"PHOTO_PATH"** column.

Then click **"Insert field"** button.



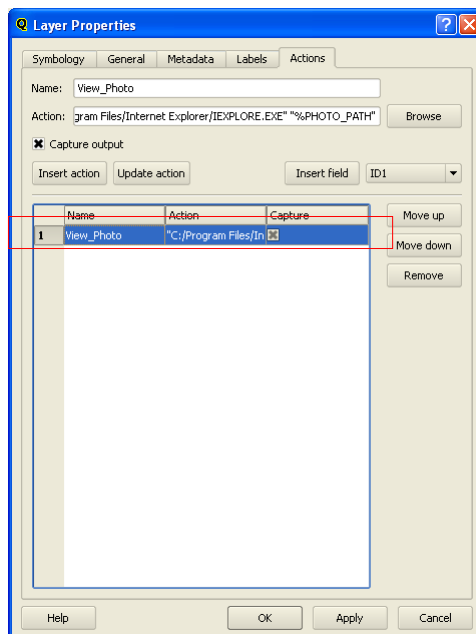
"%PHOTO_PATH" is added to the application name in **"Action"**.
 Confirm that there is a space between program name and **"%"**.



Enclose the application name and %PHOTO_PATH by the double quotation marks (" ").

Activate "Capture output".

Click "Insert Action" button.



Action "View_Photo" is inserted.

Click "Apply" then "OK".

Next step is to input the name of photograph files with full path to table of vector layer “**obspoints**”. There are two ways.

One way:

Click “Toggle Editing” button and “Identify feature” button. Then, click on a mark of vector layer “**obspoints**”.

	Attribute	Value
1	ID1	7
2	LATITUDE	0
3	LONGITUDE	0
4	PHOTO_PATH	C:/TEMP/Ks_photo/IMG_1279.jpg
5	OBS1	SPAC
6	OBS2	
7	OBS3	
8	STA_ID	A
9	RES_PATH	

“Enter Attribute Values” dialog opens.
Type in the file name with full path.
Then click “**OK**”.

After inputting all the file names, click
“**Toggle Editing**” button. Then click “**Save**”
to save the edited information in the shape
file “**obspoints.shp**”.

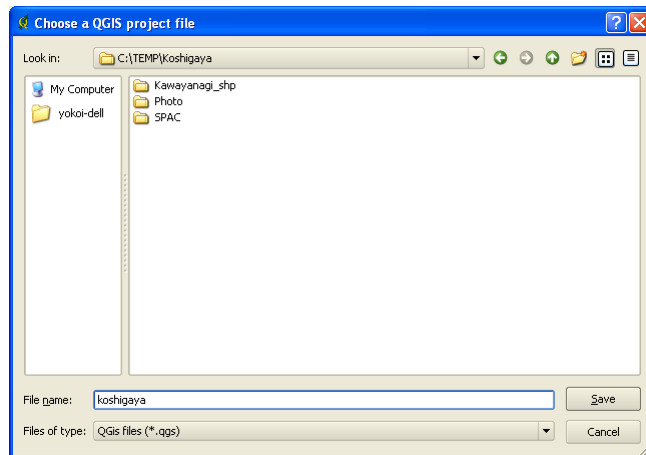
Another way:

Click “**Open Table**” button. “**Attribute Table**” opens.

	LONGITUDE	PHOTO_PATH	OBS1	OBS2	OBS3	STA_ID	RES_PATH
1	0		SPAC			E	
2	0		SPAC			B	
3	0		SPAC			D	
4	0		SPAC			F	
5	0		SPAC			C	
6	0	C:/TEMP/koshi	SPAC			A	
7	0		SPAC	CCA	HW	K	
8	0		SPAC			L	
9	0		SPAC			I	
10	0		SPAC			J	
11	0		SPAC			H	

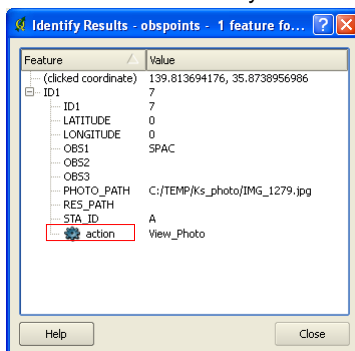
Click “**Start Editing**” button and type in the file name with full path in the target cells.
After inputting all the data, click “**Stop editing**” button and “**Save**” and “**Close**”.

Save Project using “File” and “Save Project”. Choose the directory where Project (.qgs) is saved.

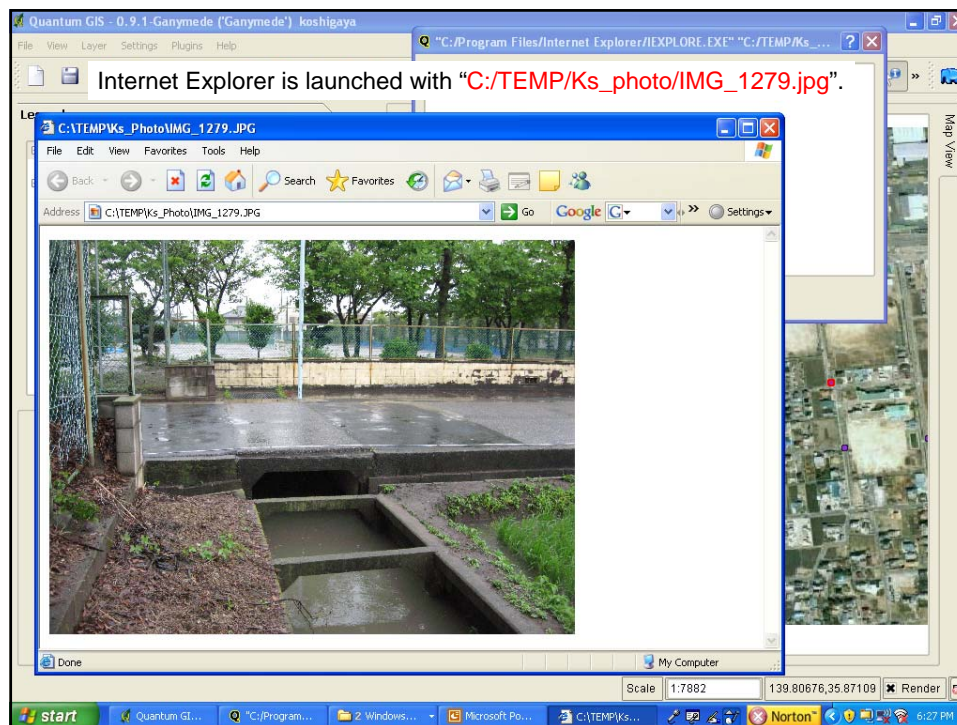


Launch the action:

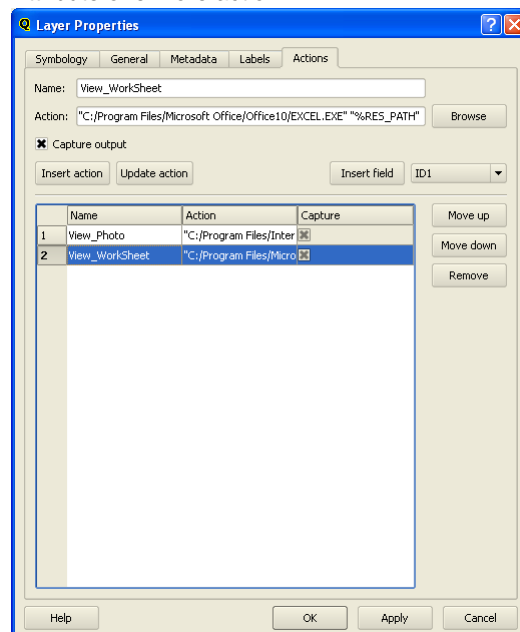
On QGIS click “Identify Feature” button. “Identify Result” dialog opens.



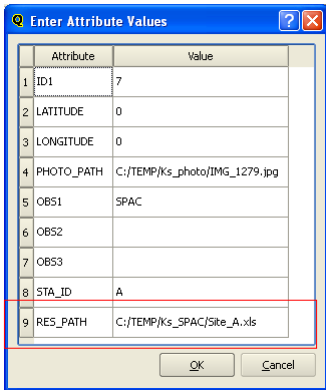
Click the right button on the mark of “action”.



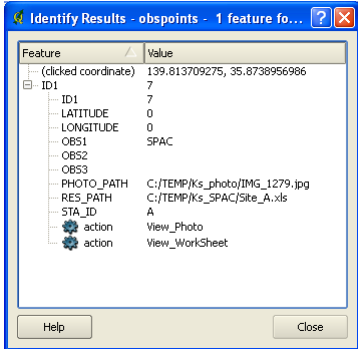
Attribute one more action:



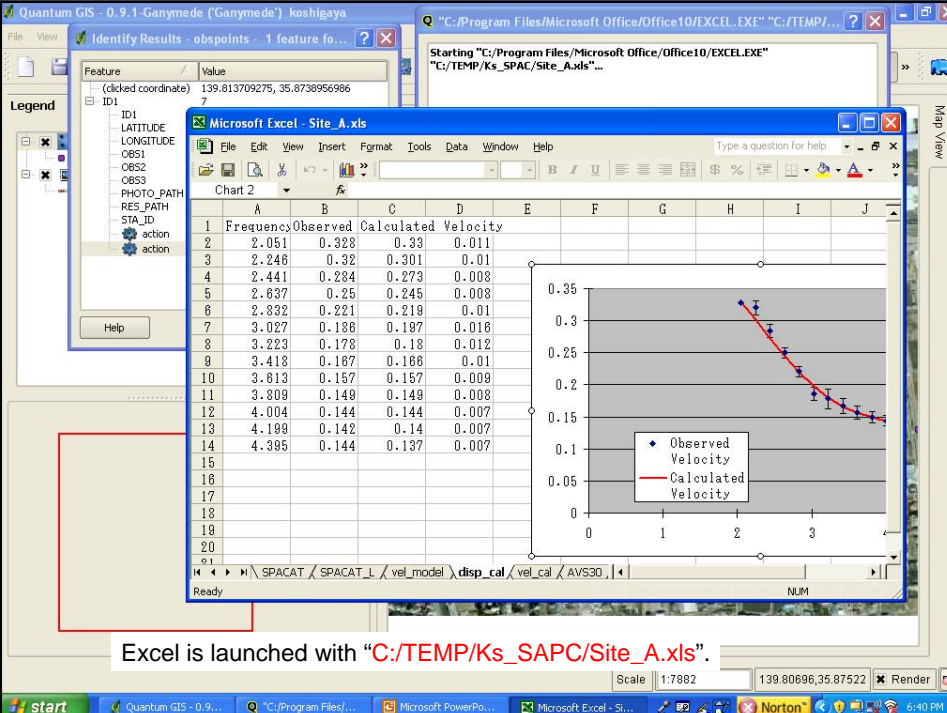
"Properties" of "obspoints" and "Action" tag.
Application is Excel. File names are stored in the column "RES_PATH".



“Identify Feature” button and a mark on “obspoints” layer.
Excel file “C:/TEMP/Ks_SPAC/Site_A.xls” is attributed.



“Identify Feature” button and a mark on “obspoints” layer.
Two actions are attributed.
Click the right button on the action “View_Worksheet”.



Excel is launched with “C:/TEMP/Ks_SAPC/Site_A.xls”.

Frequency	Observed	Calculated	Velocity
2.051	0.328	0.33	0.011
2.246	0.32	0.301	0.01
2.441	0.294	0.273	0.008
2.637	0.25	0.245	0.008
2.832	0.221	0.219	0.01
3.027	0.186	0.197	0.016
3.223	0.178	0.18	0.012
3.418	0.167	0.166	0.01
3.613	0.157	0.157	0.009
3.809	0.149	0.149	0.008
4.004	0.144	0.144	0.007
4.199	0.142	0.14	0.007
4.395	0.144	0.137	0.007

Save project otherwise the setting of actions is lost.
Note that the setting of actions is saved not in the shape file or
in the table of PostgreSQL, but the project of QGIS.