

SIS FIELD GIS CLASS WORK 2012

NOVEMBER 2012

Division of Spatial Information Science
Graduate School of Life and Environmental Sciences
University of Tsukuba



PARTICIPANTS



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Real-Time Mobile Field Data Collection, Visualization and Analysis

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OBJECTIVES

To practice real-time field data collection

To visualize and analyze collected field data

To demonstrate common GIS functions

Except Data Processing

Web-GIS will carry out all required data processing steps

Database creation, data injection, zoning, joining tables, intersecting features, etc....



USER ACCOUNT CREATION

URL: <http://land.geo.tsukuba.ac.jp/testbed1>

- 1 Click on "Create Account" Tab
- 2 Type user name (minimum 3 digits)
- 3 Set passwords (minimum 3 digits)
- 4 Retype passwords
- 5 After finished, click "Continue" to Log-In
- 6 Type user name and Log-In

Mobile Field GIS Log-In and User Account Creation

Log In Create Account 1

User Name: john 2

Password: ... 3

Confirm Password: ... 4

Create User

Mobile Field GIS Log-In and User Account Creation

Log In Create Account

Complete

Your account has been successfully created.

Continue 5

Mobile Field GIS Log-In and User Account Creation

Log In Create Account

User Name: john 6

Password: ...

☐ Remember me next time.

Log In

GETTING COORDINATES

2 GPS 140.10112 36.11234 3

Name sophia

Record ID

Longitude 419100

Latitude 3996783

Type Garbage

SubType Burnable

Quantity 1

Attachment No

NA

Browse...

Total Records: 0

1

New Update Delete Add

500 RID Zoom To Selected Record Logout

4

Create a New Record

- 1 Click "New" to create a new record

Get the coordinates from 3 sources

- 2 Build in GPS
- 3 Locate GPS positions in a map and Get from Garmin GPS (Manually enter)
- 4 Read from a Map

CREATE A NEW RECORD

GPS: 140.10112, 36.11234

Name: sophia

Record ID: SO23022158

Longitude: 419078

Latitude: 3996789

Type: Parking

SubType: Bicycle

Quantity: 3

Attachment Yes

5023022158.jpg

IMG_0486-1024x768.jpg (203 KB)

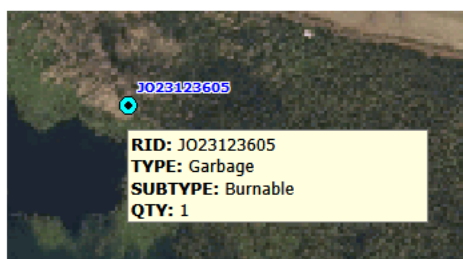
500 500 RID Zoom To Selected Record Logout

- 2 Select Type
- 3 Select Subtype
- 4 Select Quantity
- 5 Set up attachment category
- 6 Click a **Browse** for file attachment
- 7 Click to upload (Attach)
- 8 Click **"Add"** to add a new record

MAP CONTROLS



- 1 Zoom In
- 2 Zoom Out
- 3 Pan or Move
- 4 Get coordinates from a map
- 5 Get Attribute Information (click and move on a record)
- 10 Set up map scale (smaller number gives larger map)
- 11 Show attribute field for labeling a record
- 12 Check **"Zoom To Selected Record"** to see a point at map center



- 6 Measure distance
- 7 Zoom to all records
- 8 Go to Home (SIS Building)
- 9 Refresh the map (Clear all points on a map)



UPDATING AND DELETING A RECORD

GPS

Name

john

Record ID

JO23123557

Longitude

418851

Latitude

3997394

Type

Garbage

SubType

Burnable

Quantity

1

Attachment No

NA

Browse...

You have selected record:

3 of 19

Update

Delete

Cancel

500

SUBTY

Zoom To Selected Record

Logout

RID	PNAME	LON	LAT	TYPE	SUBTYPE	QTY	ATTACHMENT
JO23123605	john	418914	3997244	Garbage	Burnable	1	NA
JO23123600	john	419121	3997224	Parking	Motorbike	5	NA
JO23123557	john	418851	3997394	Garbage	Burnable	1	NA
JO23123549	john	418854	3997634	Garbage	Burnable	1	NA
JO23123441	john	418393	3997738	Parking	Bicycle	1	NA
JO23123438	john	418427	3997255	Parking	Bicycle	1	NA
JO23123434	john	418607	3997209	Parking	Motorbike	1	NA
JO23123430	john	418387	3997122	Garbage	Burnable	1	NA

- 1 Select a row to update or delete
- 2 Edit/modify Attribute
- 3 Click Update to update the selected record
- 4 Click Delete to delete the selected record
- 5 Click Cancel to return a new record creation

TO SEE WHAT OTHER PEOPLE ARE COLLECTING

Update

Delete

Cancel

500

SUBTY

Zoom To Selected Record

Logout

RID	PNAME	LON	LAT	TYPE	SUBTYPE	QTY	ATTACHMENT
JO23123605	john	418914	3997244	Garbage	Burnable	1	NA
JO23123600	john	419121	3997224	Parking	Motorbike	5	NA
JO23123557	john	418851	3997394	Garbage	Burnable	1	NA
JO23123549	john	418854	3997634	Garbage	Burnable	1	NA
JO23123441	john	418393	3997738	Parking	Bicycle	1	NA
JO23123438	john	418427	3997255	Parking	Bicycle	1	NA
JO23123434	john	418607	3997209	Parking	Motorbike	1	NA
JO23123430	john	418387	3997122	Garbage	Burnable	1	NA

Real-Time Field Data Browser and Analyzer

1

Click link to see what other people are collecting

2

Log-Out to end the survey

Logout

NT

Garbage

Parking

Garbage

Parking

Ignore Zero

Report

Clear

Field Data

TYPE

14

Select Field ...

Query

Type

Garbage

Parking

Add

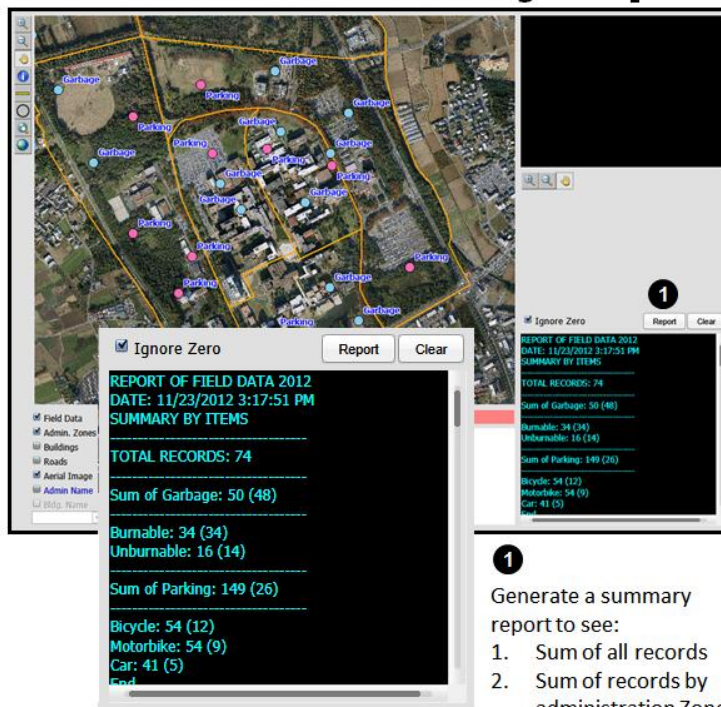
Clear

Select Logic

Run

Generate a Summary Report Labeling and Symbolizing Search records in a feature Thematic Mapping (Choropleth Mapping) Querying Attributes

Generate a Summary Report



REPORT OF FIELD DATA 2012
DATE: 11/23/2012 3:17:51 PM
SUMMARY BY ITEMS

TOTAL RECORDS: 74

Sum of Garbage: 50 (48)

Burnable: 34 (34)
Unburnable: 16 (14)

Sum of Parking: 149 (26)

Bicycle: 54 (12)
Motorbike: 54 (9)
Car: 41 (5)
End

SUMMARY BY ADMINISTRATION ZONES

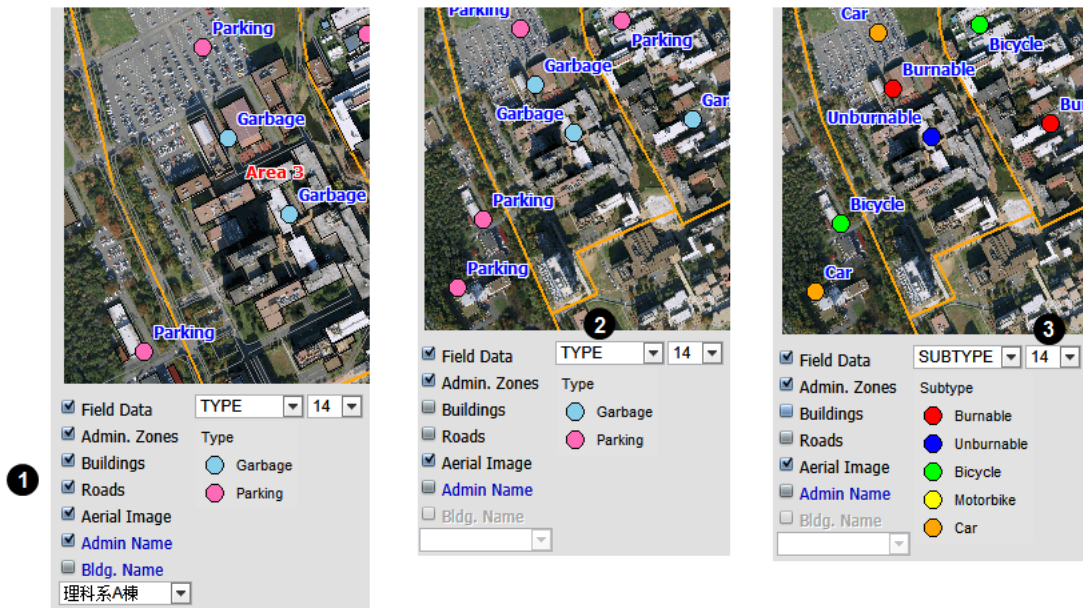
Total Records By Zones

4	Hirasuna Residence Area
3	Art and Physical Education Area
15	Agri. and Fores. Research Center Area
4	Administration Center Area
5	Kasuga Area
4	Ichinoya Residence Area
6	Research Center Area
3	Area 3
5	Area 2
3	Area 1
6	University Hall

1
Generate a summary report to see:

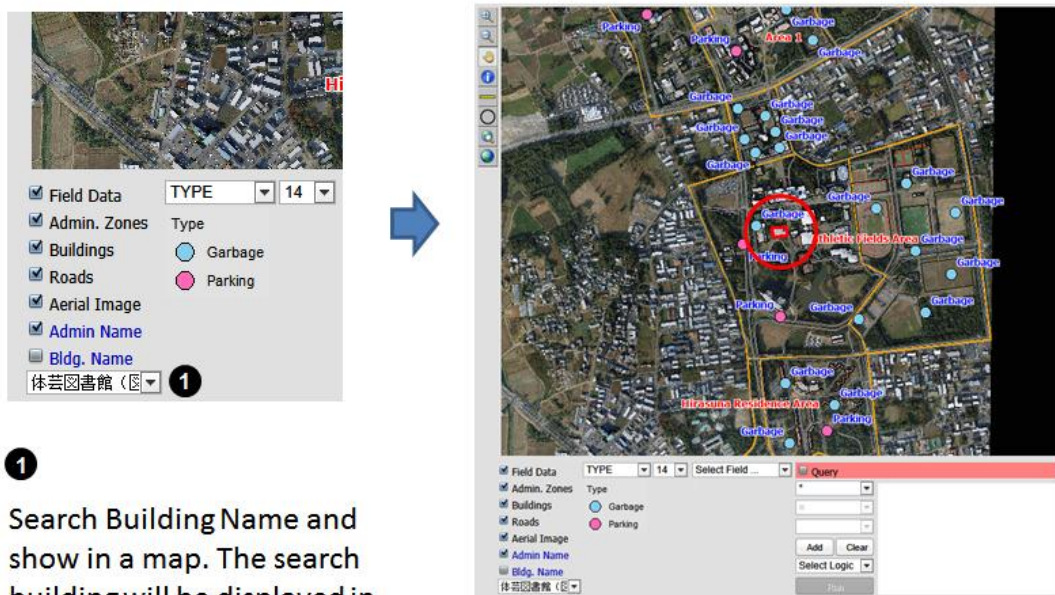
1. Sum of all records
2. Sum of records by administration Zones

Labeling and Symbolizing Features



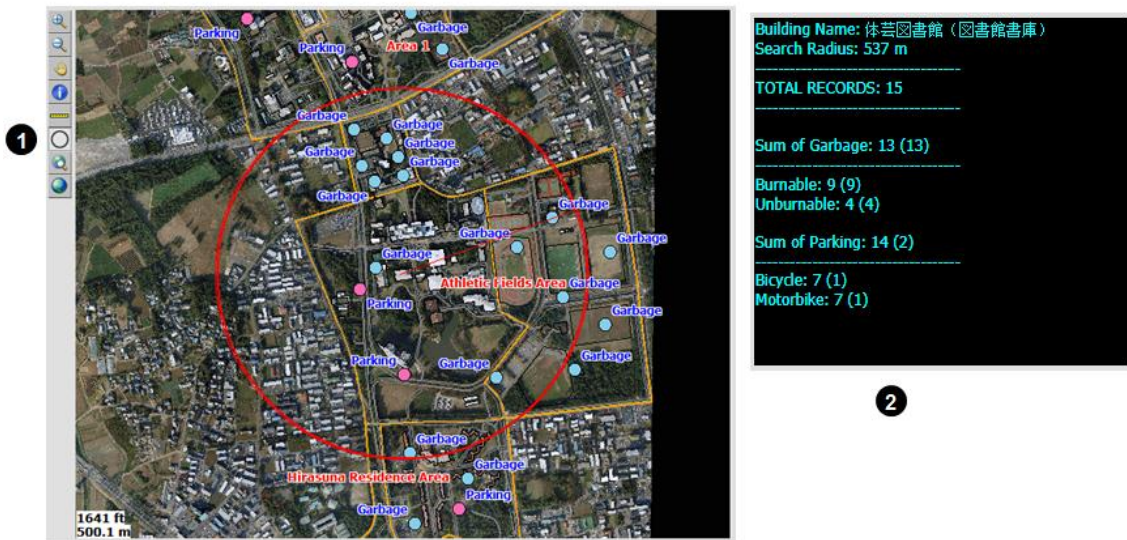
- ❶ Map layer on-off
- ❷ Select attribute field for symbolizing (Only Type and Subtype are available)
- ❸ Change the symbol size (Point Size)


Search in a features



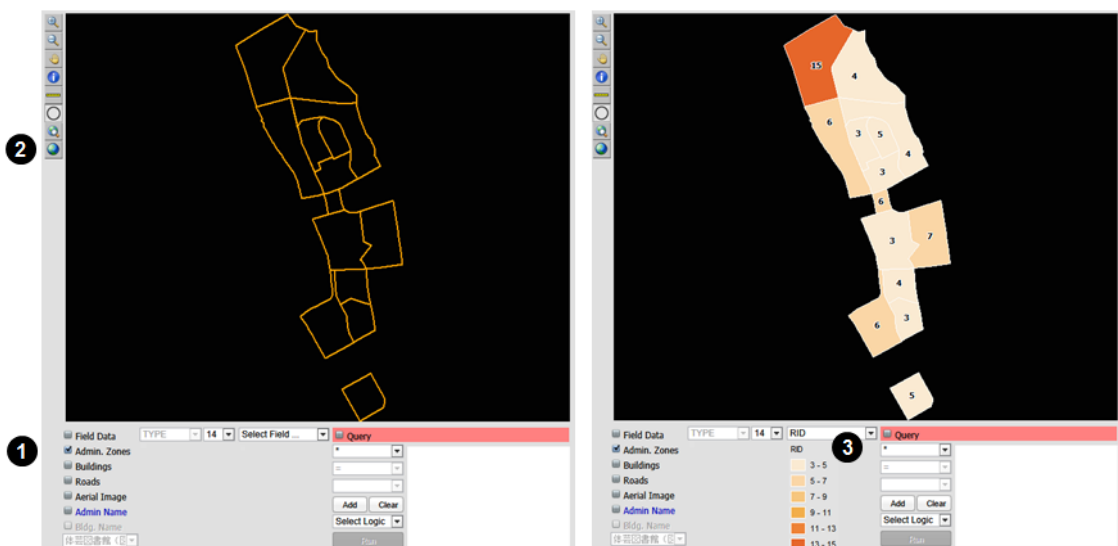
- ❶ Search BuildingName and show in a map. The search building will be displayed in a red polygon.
(Must turn on Building layer)


Search records in a features (Buffering)



- 1 Click  Circle tool to draw a circle and find the records inside the circle
- 2 Search result will be shown in a text box

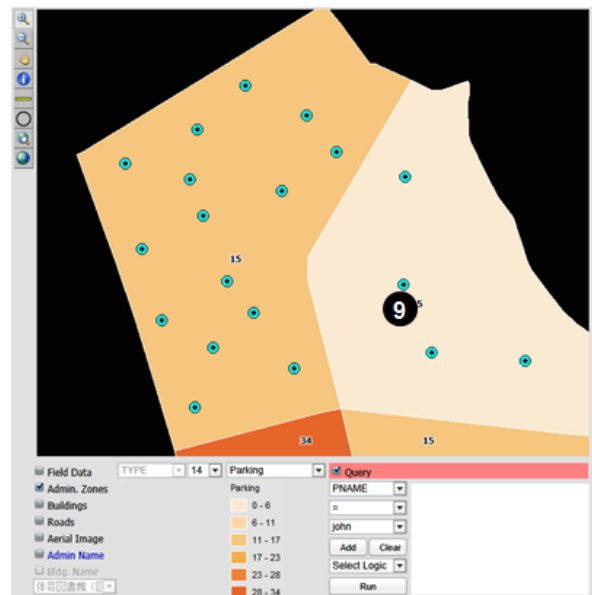
Thematic Mapping (Choropleth Mapping)



- 1 Off all map layers except "Admin. Zones"
- 2 Click  to zoom all map extent
- 3 Select Attribute field for thematic values

Querying Attributes

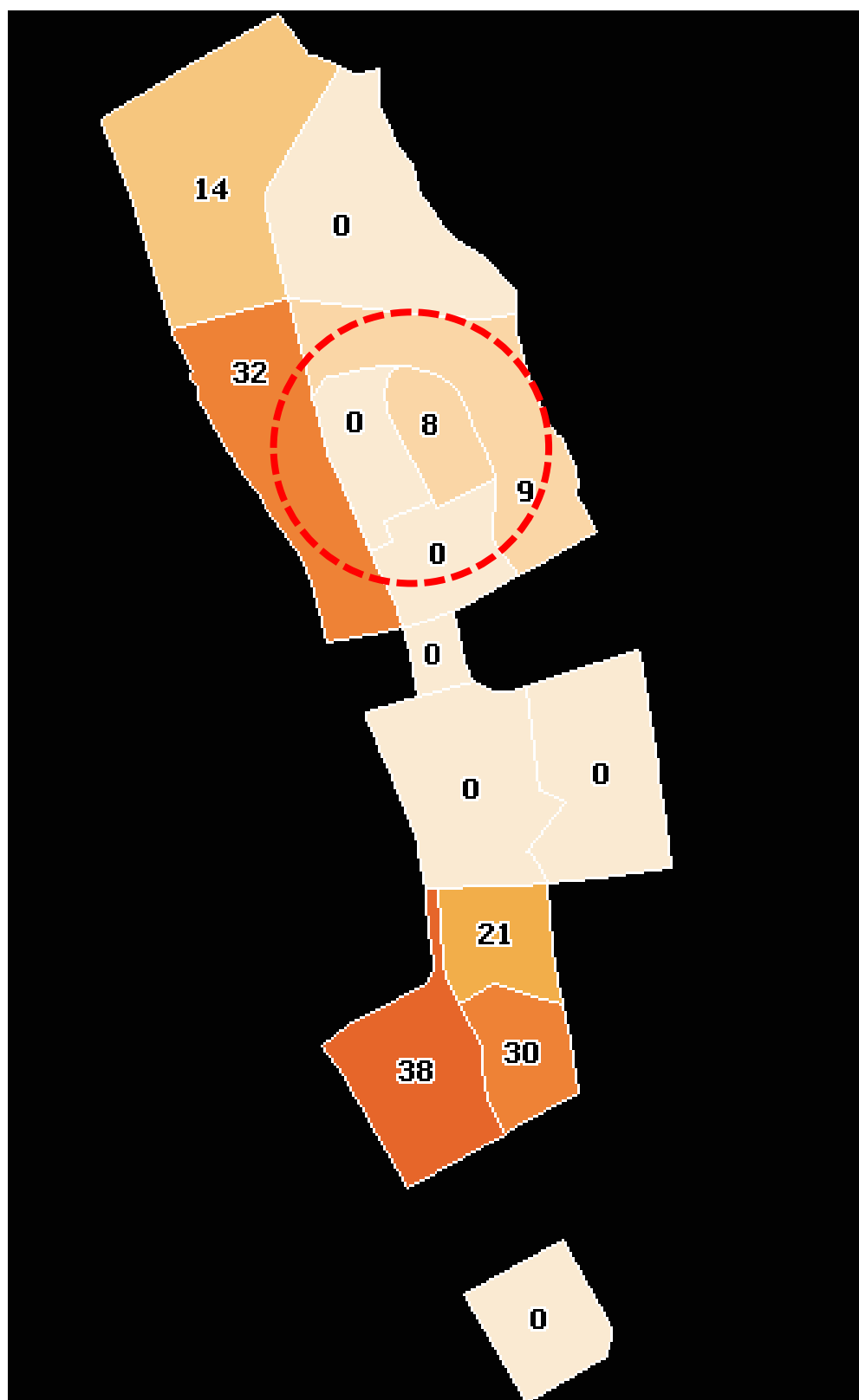
- 1 ☒ Query
- 2 SUBTYPE PNAME = 'john' AND SUBTYPE
- 3 = = 'Bicycle'
- 4 Bicycle
- 5 Add Clear 7
- 6 AND
- 8 Run



- 1 Click **"Query"** Check Box to Start a Query Function
- 2 Select **Attribute Field** to query
- 3 Select **Condition**
- 4 Select **Attribute Value** to query
- 5 Click **"Add"** to build a continuous query string
- 6 Add **Logical Operator** for next query condition, Example:
PNAME = 'john' **AND** SUBTYPE = 'Bicycle'
- Click **Clear** to clear the query string in a text box
- 7 Click **Run** to start a query process
- 8 See the query result in a map
(The result will be highlighted by cyan color)

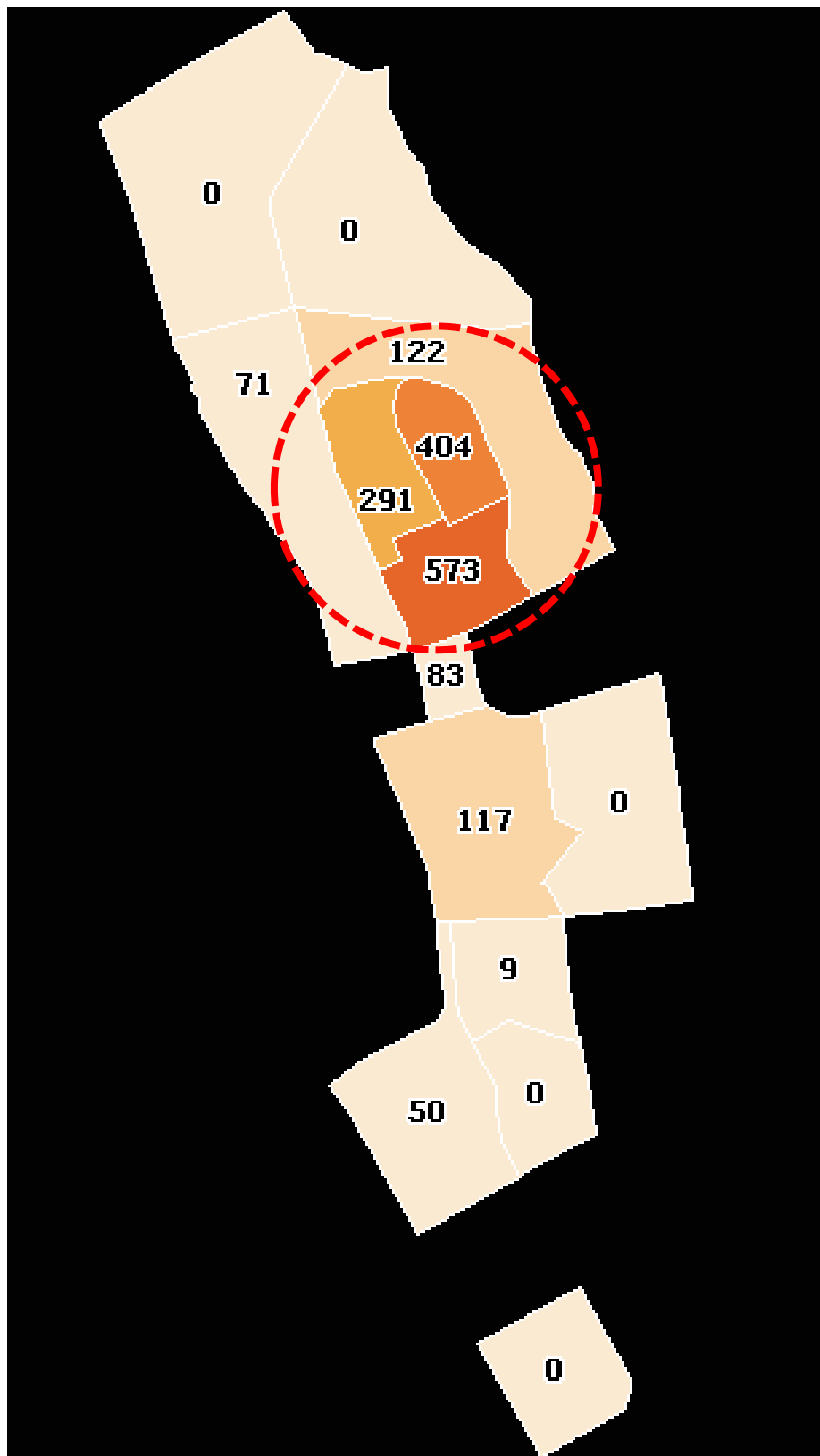
SEE RESULTS

RESULTS



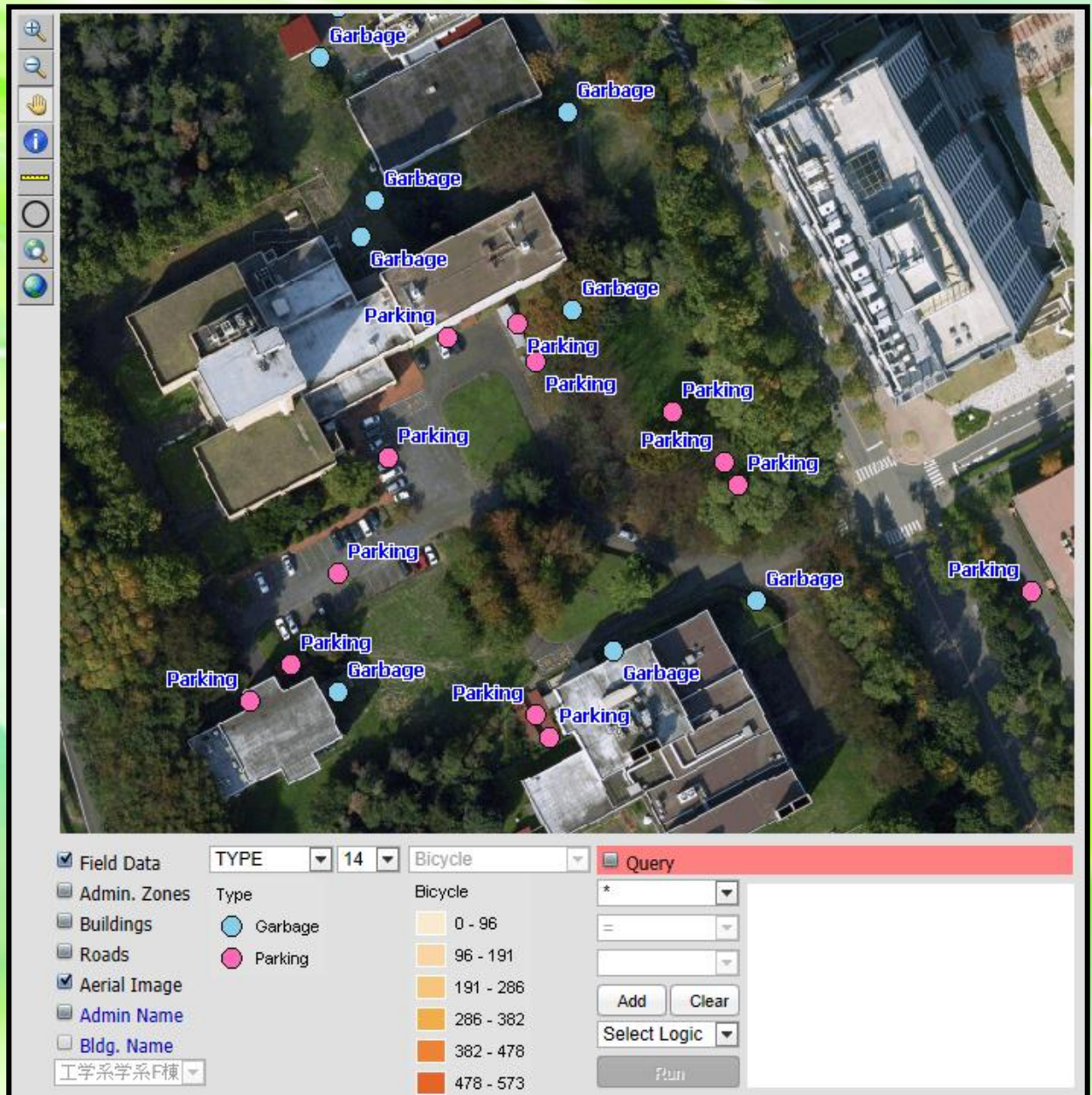
Thematic Mapping by Garbage

RESULTS



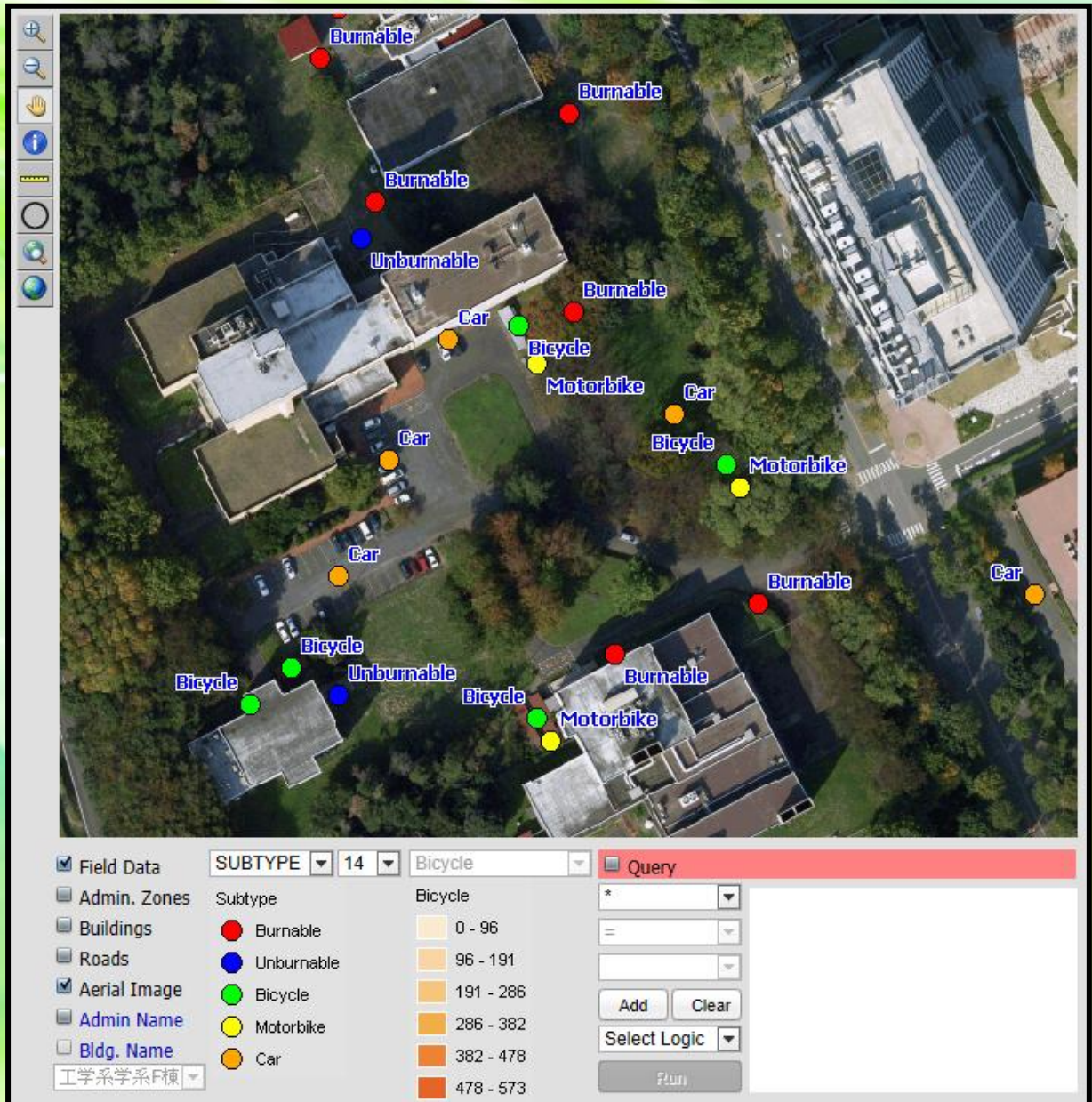
Thematic Mapping by Bicycle

RESULTS




Symbolizing by Types

RESULTS



Symbolizing by Subtypes

RESULTS



Field Data

Subtype: 14

Bicycle

Admin. Zones

Buildings

Roads

Aerial Image

Admin Name

Bldg. Name

Subtype

Burnable

Unburnable

Bicycle

Motorbike

Car

Bicycle

0 - 96

96 - 191

191 - 286

286 - 382

382 - 478

478 - 573

Query

PNAME


PNAME = 'kim'

Add

Clear

Select Logic

Run



Shp

X	418607
Y	3997524
RID	KI26032613
PNAME	kim
TYPE	Parking
SUBTYPE	Car
QTY	28

☒ Ignore Zero

Report

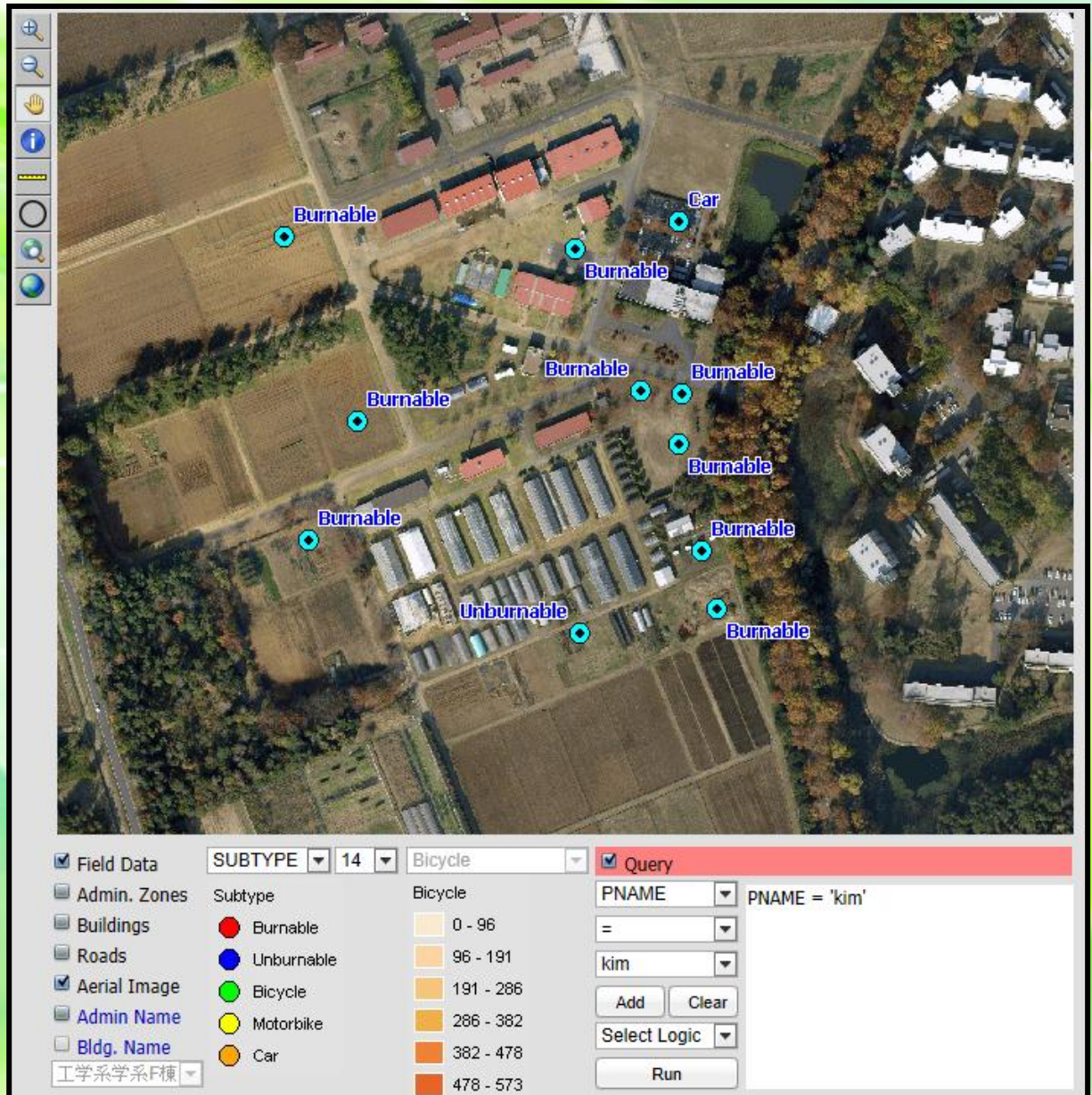
Clear

Query String: PNAME = 'kim'

Total Records Found: 11

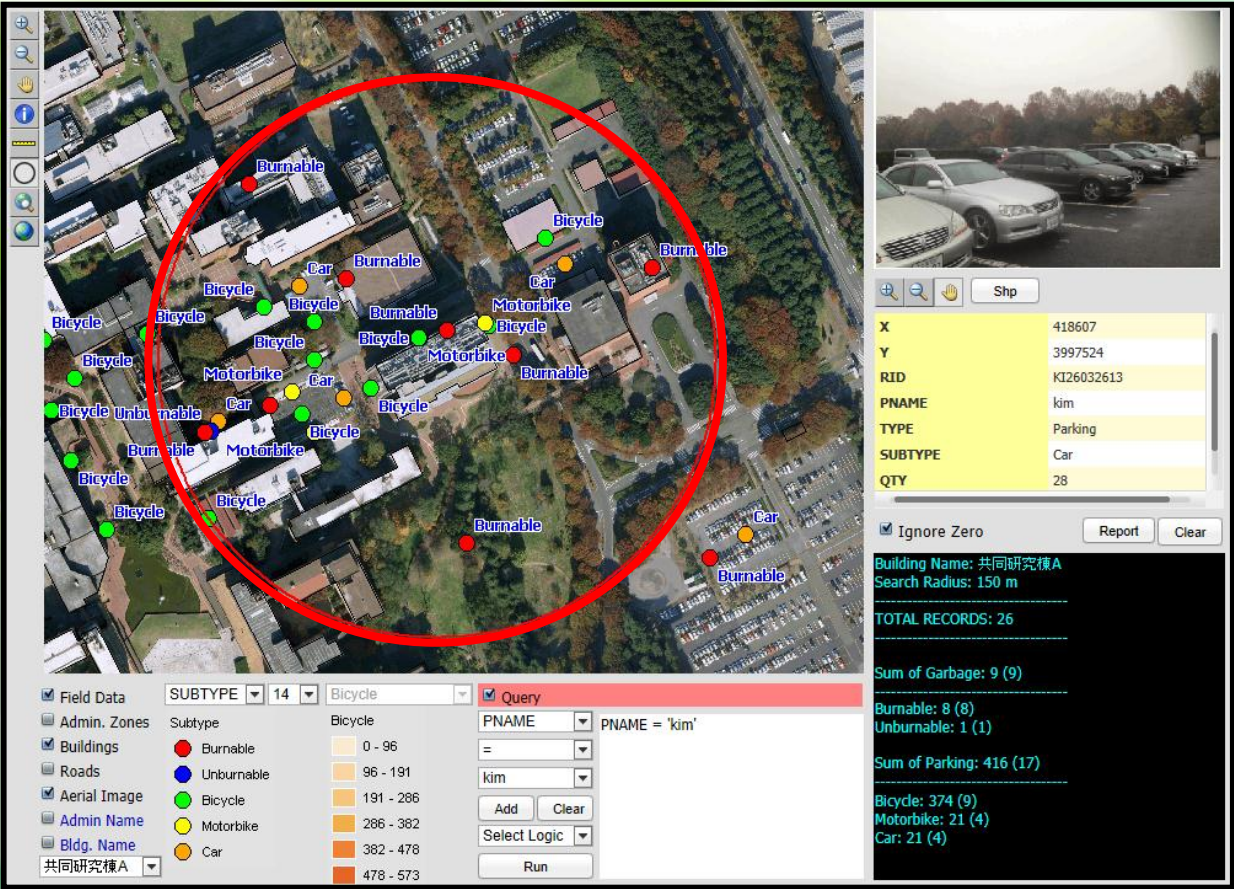
Image Attachment

RESULTS



Query by attribute fields and values

RESULTS



Query by specific buffered distance at user defined building

DISCUSSION

