

Real-Time Mobile Field Data Collection, Visualization and Analysis

SiS Field Class Work 2012

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OBJECTIVE

To practice real-time field data collection

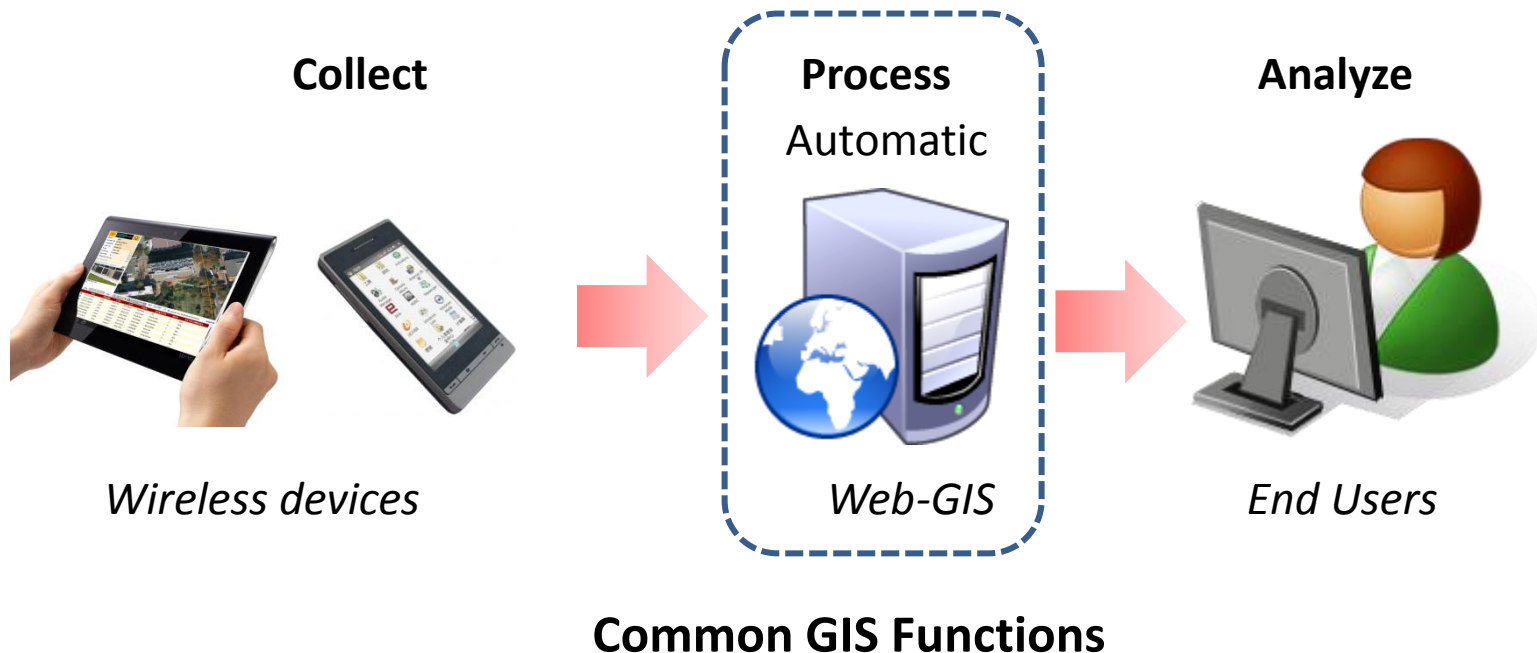
To visualize and analyze collected field data

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

Record ID

Longitude

Latitude

Type

SubType

Quantity

Attachment

NA

Total Records:
0

1

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

2

3

4

5

GPS **140.10112**
36.11234

Name **sophia**

Record ID **SO23022158**

Longitude **419078**

Latitude **3996789**

Type **Parking** ▼

SubType **Bicycle** ▼

Quantity **3** ▼

Attachment Yes ▼

SO23022158.jpg

6 Browse... 



IMG_0486-1024x768.jpg (203 KB)

8





New Update Delete Add



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)

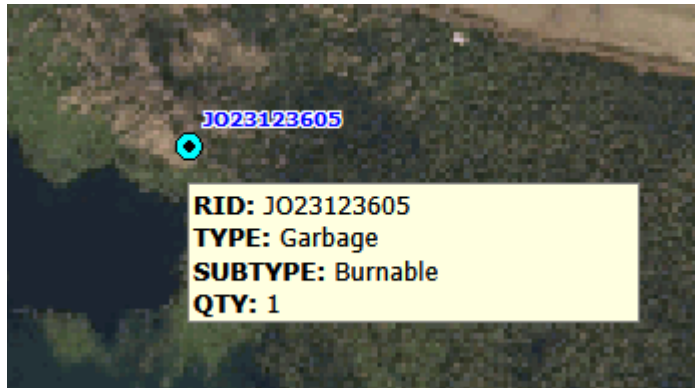
8 Click **"Add"** to add a new record

5

MAP CONTROLS

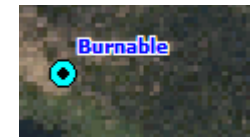


- ① Zoom In
- ② Zoom Out
- ③ Pan or Move
- ④ Get coordinates from a map
- ⑤ Get Attribute Information (click  and move on a record)



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

- 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

UPDATING AND DELETING A RECORD

2

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

3 **4** **5**

New Update Delete Cancel

	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
	JO23123426	john	418312	3997314	Parking	Bicycle	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

2

1

1



2

8

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

Generate a Summary Report

☒ Ignore Zero

Report Clear

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

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

TOTAL RECORDS: 74

Sum of Garbage: 50 (48)

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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

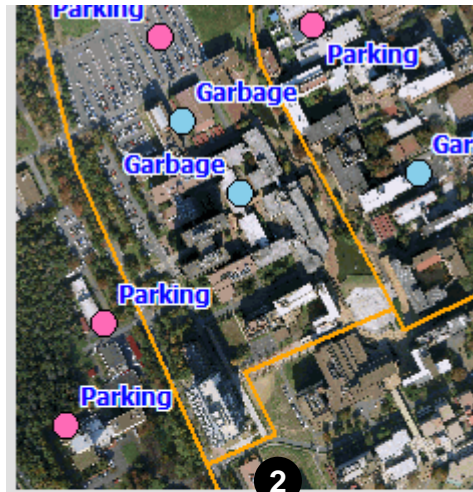
1



Map 1 shows an aerial view of a campus area with labels for 'Parking' (pink circles) and 'Garbage' (blue circles). A red label 'Area 3' is also visible. The legend below the map shows the following settings:

- Field Data: TYPE, 14
- Admin. Zones: Type
- Buildings: Garbage (blue circle)
- Roads: Parking (pink circle)
- Aerial Image: checked
- Admin Name: 理科系A棟
- Bldg. Name: (empty)

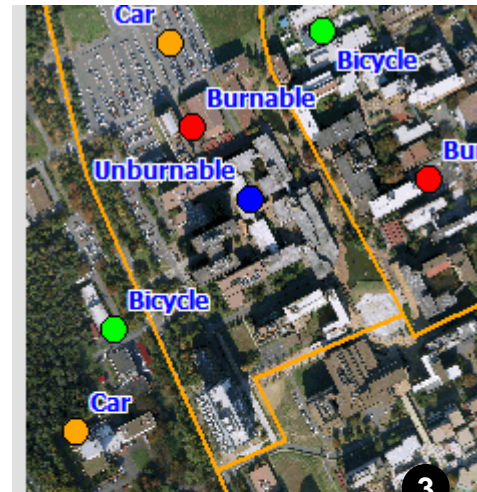
2



Map 2 shows the same area as Map 1, but the legend is updated to show 'Type' selected. The legend settings are:

- Field Data: TYPE, 14
- Admin. Zones: Type
- Buildings: Garbage (blue circle)
- Roads: Parking (pink circle)
- Aerial Image: checked
- Admin Name: (empty)
- Bldg. Name: (empty)

3

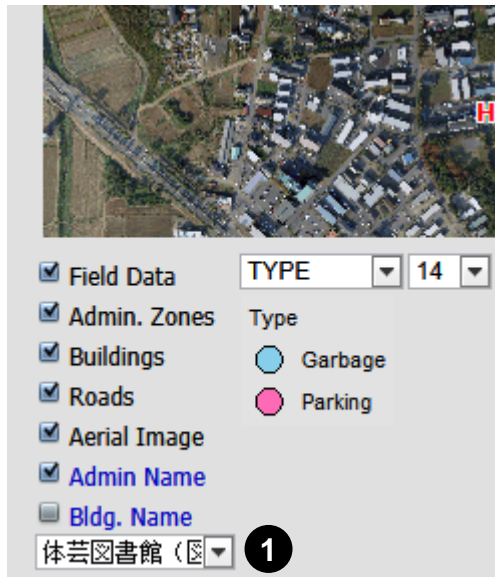


Map 3 shows the same area as Map 1, but the legend is updated to show 'Subtype' selected. The legend settings are:

- Field Data: SUBTYPE, 14
- Admin. Zones: Subtype
- Buildings: Burnable (red circle), Unburnable (blue circle), Bicycle (green circle), Motorbike (yellow circle), Car (orange circle)
- Roads: (empty)
- Aerial Image: checked
- Admin Name: (empty)
- Bldg. Name: (empty)

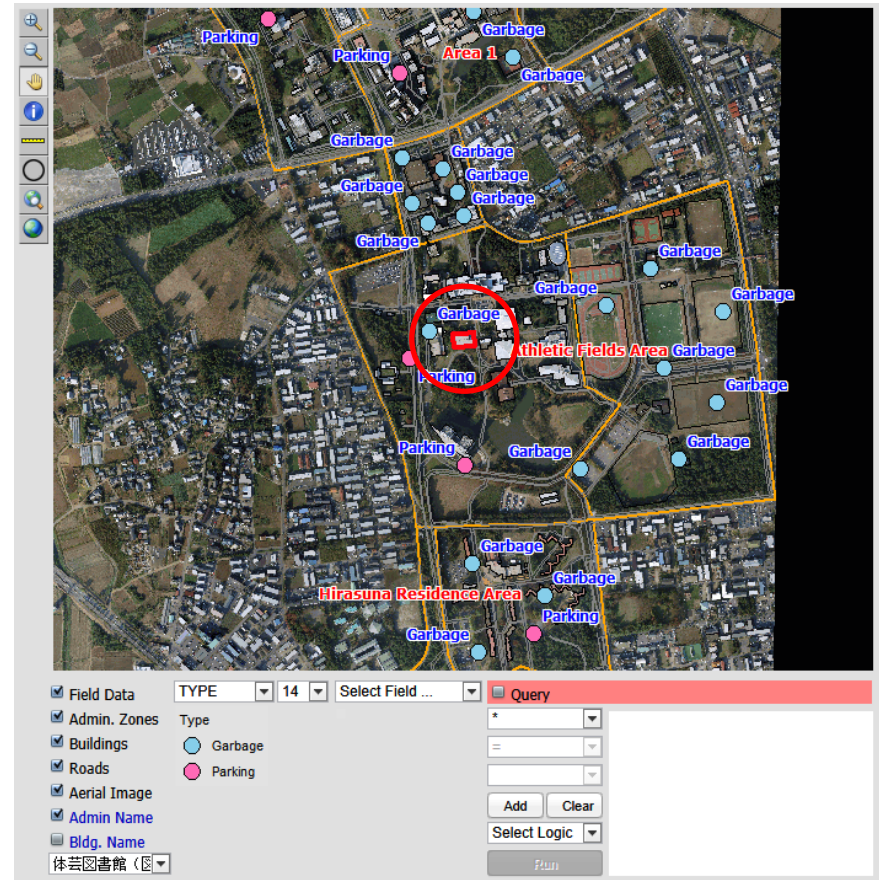
- 1 Map layer on-off
- 2 Select attribute field for symbolizing (Only Type and Subtype are available)
- 3 Change the symbol size (Point Size)

Search in a features



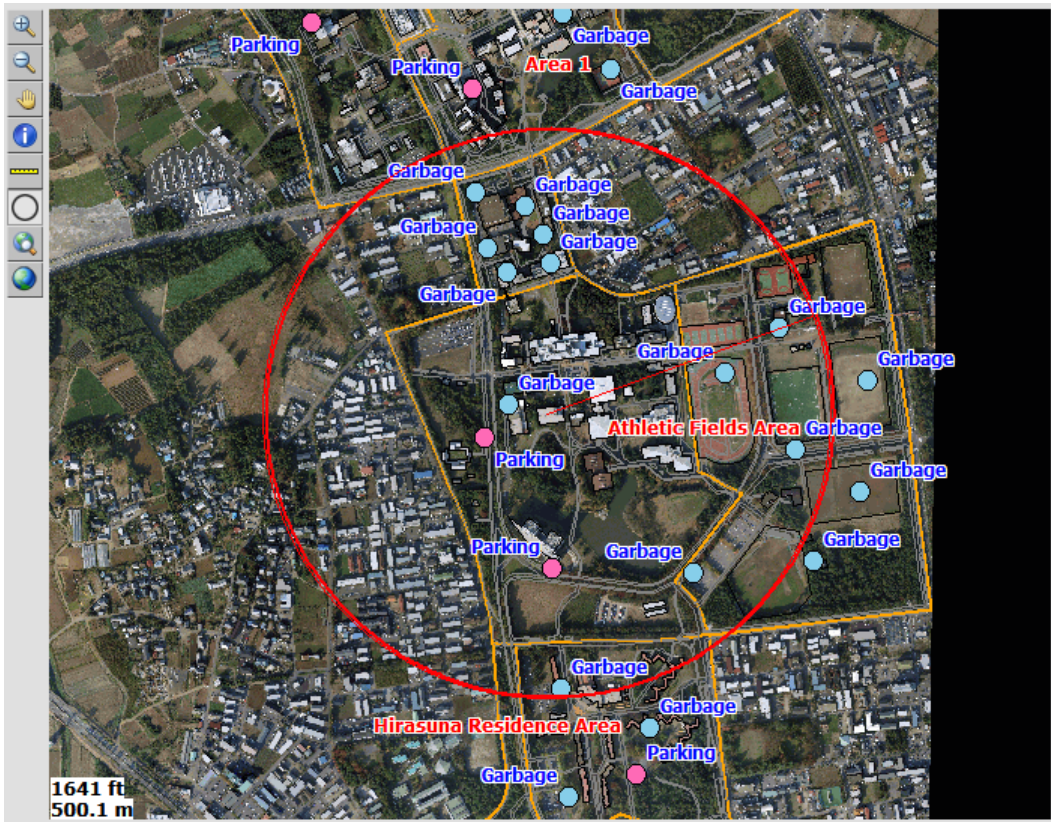
1

Search Building Name 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



2


Building Name: 体芸図書館 (図書館書庫)
Search Radius: 537 m

TOTAL RECORDS: 15

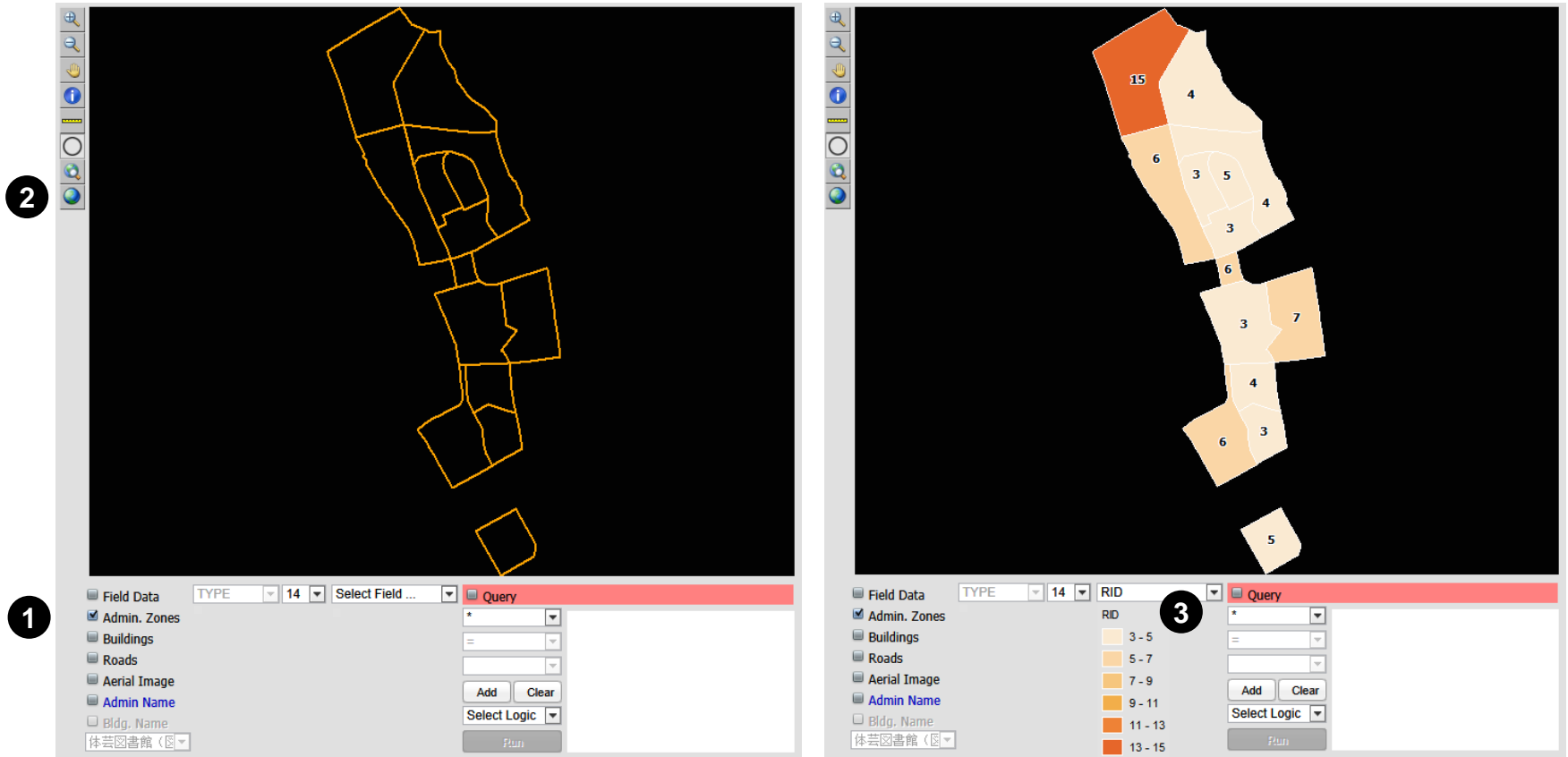
Sum of Garbage: 13 (13)
Burnable: 9 (9)
Unburnable: 4 (4)


Sum of Parking: 14 (2)

Bicycle: 7 (1)
Motorbike: 7 (1)

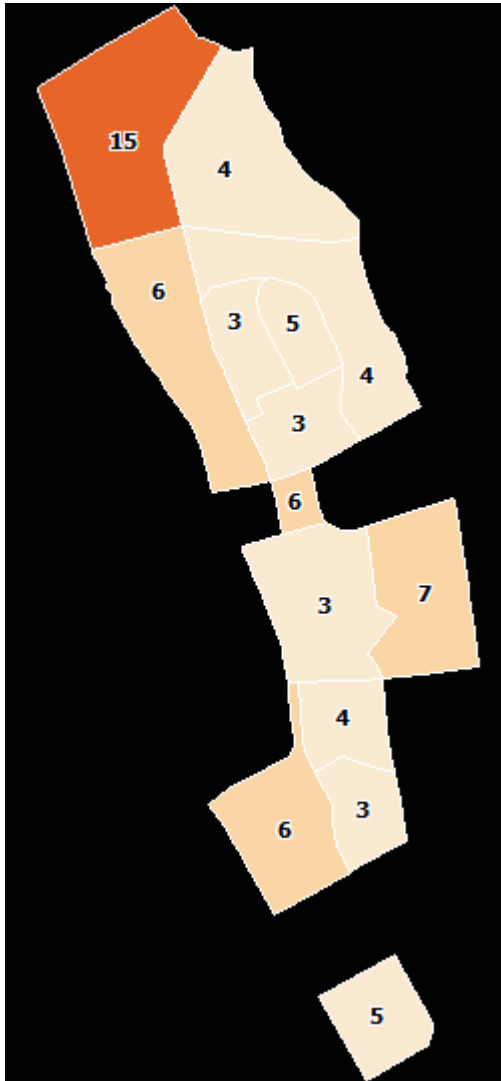
- 1 Click  Circle tool to draw a circle and find the records inside the circle
- 2 Search result will be shown in a text box

Thematic Mapping (Choropleth Mapping)

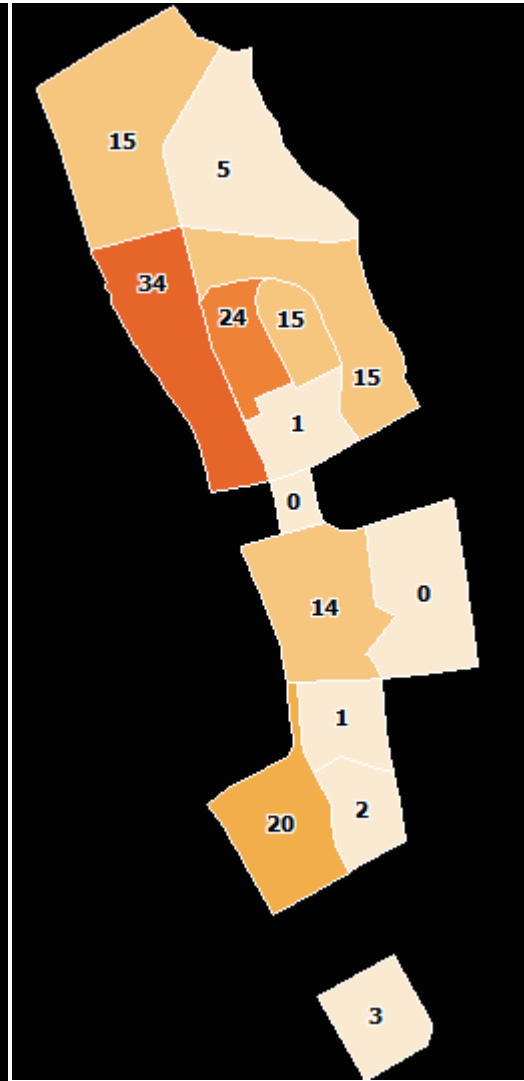


- 1 Off all map layers except “Admin. Zones”
- 2 Click  to zoom all map extent
- 3 Select Attribute field for thematic values

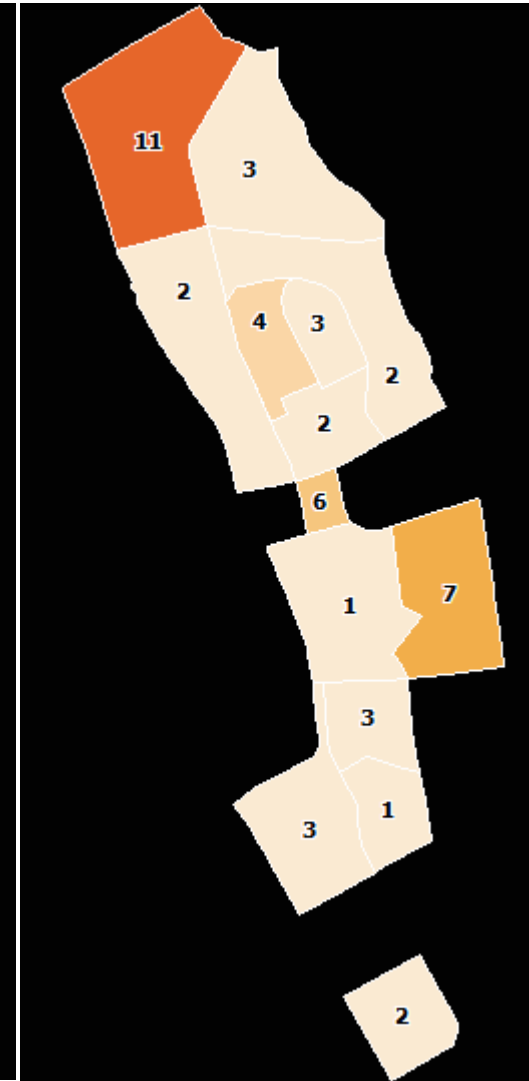
Thematic Mapping (Choropleth Mapping)



Thematic map by total records
(* Note: Simulated data)



Thematic map by parking



Thematic map by garbage

Querying Attributes

A screenshot of a query builder interface. It features a 'Query' checkbox (1) which is checked. Below it, a dropdown menu shows 'SUBTYPE' (2). To the right, a text box contains the query string 'PNAME = 'john' AND SUBTYPE = 'Bicycle'' (3). Below the dropdown, another dropdown shows 'Bicycle' (4). There are 'Add' and 'Clear' buttons (5). Below these, a dropdown shows 'AND' (6). At the bottom is a 'Run' button (8). A black circle with the number '7' is placed over the 'Clear' button.

- 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)

