Micro-module A: Online Urban Data Gathering

A5- Geo-tagged Socioeconomic Data Processing

In this micro module, we will take census data in Hong Kong as a case study to learn how to obtain and process socioeconomic metrics, which could associate with urban morphology analytics.

In the first part, this tutorial will introduce how to process high-resolution GeoTIFF to show the population density of large scale, for example, overall Hong Kong.

In the second part, this tutorial will introduce how to join small street-level census data to a spatial vector layer, that could apply to the local-scale analysis.

1. Processing population density in geo-tiff of overall Hong Kong

1.1 To obtain and input geo-tiff in QGIS

Firstly, we could download the population density of tiff and geo-tagged csv from the followed website.

HOME / DATASETS / HONG KONG: HIGH RESOLUTION POPU	ILATION DENSITY MAPS + DEMOGRAPHIC ESTIMATES						
Hong Kong: High Resolut Demographic Estimates	🚫 Meta						
The world's most accurate population datasets. Seven maps/datasets for the distribution of various populations in Hong Kong: (1) Overall population density (2) Women (3) Men (4) Children (ages 0-5) (5) Youth (ages 15-24) (6) Elderly (ages 60+) (7) Women of reproductive age (ages 15-24).							
👬 1100+ Downloads This dataset updates: As nee	-ded	Contact the contributor 🕑 (f) 🖷					
	Data and Resources Metadata						
30 15 Aug Sep Oct Nov Dec Jan	HKG_children_under_five_2019-06-01_csv.zip (439.5K) Updated: 20 June 2019 No description for this resource						
RELATED SHOWCASES There are no showcases for this dataset.	HKG_children_under_five_2019-06-01_geotiff.zip (399.2K) Updated: 20 June 2019						
ACTIVITY	No description for this resource						
FB Data for Good at Meta updated the dataset Hong Kong: High Resolution	HKG_elderly_60_plus_2019-06-01_csv.zip (442.0K) Updated: 20 June 2019						

https://data.humdata.org/dataset/worldpop-population-density-for-china-hong-kong-

special-administrative-region

The csv has latitude and longitude values, that could be imported into QGIS with geoinformation.

📙 « dataset	> pupulation_tiff and geo-tagged scv >		~	ک 2
		修改日期		类型
*	population_hkg_2018-10-01.csv population_hkg_2018-10-01_geotiff	2022/1/7 10:55 2022/1/7 10:54		文件夹 文件夹

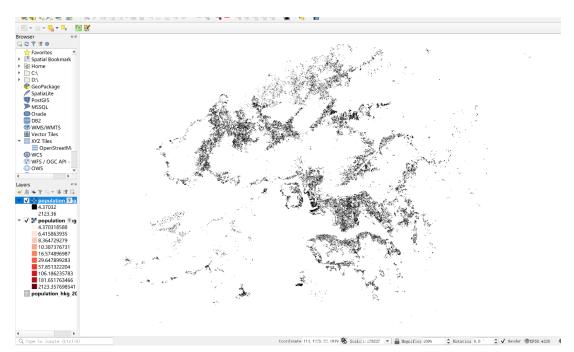
To import the geo-tiff, click 'Layer'- 'Add Raster Layer', and find the source of the tiff file.

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1	latitude	longitude	population_2015	population_2020	
2	22.16014	113.899	9.337328933	9.659726936	
3	22.16347	114.2532	17.16392845	17.44693997	
4	22.16375	114.2543	17.16392845	17.44693997	
5	22.16431	114.2513	17.16392845	17.44693997	
6	22.16486	113.9101	9.337328933	9.659726936	
7	22.16486	113.9121	9.337328933	9.659726936	
8	22.16486	114.2521	17.16392845	17.44693997	
9	22.16486	114.2543	17.16392845	17.44693997	
10	22.16514	114.2529	17.16392845	17.44693997	
11	22.16514	114.2535	17.16392845	17.44693997	
12	22.16514	114.2546	17.16392845	17.44693997	
13	22.16542	113.9118	9.337328933	9.659726936	
14	22.16542	114.254	17.16392845	17.44693997	
15	22.16597	113.9113	9.337328933	9.659726936	

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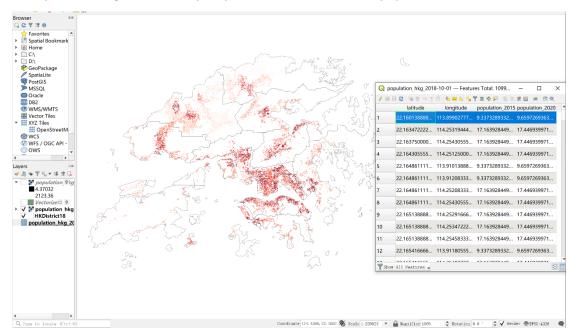


To change the Symbology of tiff layer, click 'layer properties'- 'Symbology', change the render type from Singleband gray to Singleband pseudocolour, change 'interpolation' to 'linear', we could select a specific colour ramp, we could identify the numbers of categories, and click 'Classify'.

Q Layer Properties	— population_h	kg_2018-10-01 — Symbology				×
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Finally, we could get the density map with attribute table and population metrics.



1.2 To convert geo-tiff (raster) to shapefile (vector data)

We could also convert the rater data to an editable shapefile, click 'Raster'- 'Conversion'- 'Polygonize'.

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1.3 To compare population density in different years

By imputing population density of tiff in different years through followed URL, we could compare the difference and change of population density through the urbanism process.

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WorldPop produces different types of gridded population count datasets, depending on the methods used and end application. Please make sure you have read our Mapping Populations overview page before choosing and downloading a dataset.							
Bespoke methods used to produce datasets for sp Population More	pecific individual countries are available through the WorldPop Open						
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DOWNLOADS	Data and Resources Metadata Image: hkg_ppp_2020.tif Updated: 29 June 2020	Contact the contributor () () () ()					
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https://data.humdata.org/dataset/worldpop-population-counts-for-china-hong-kong-special-administrative-region#

- 2. Processing small street-level census data in QGIS
- 2.1 To obtain census data and the small street-level outline

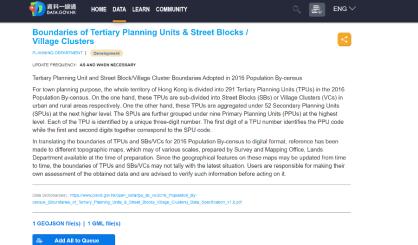
When we need more accurate census data to analyse smaller scale urban areas, we could

 の 資料一線通 DATA.GOV.HK HOME DATA LEARN COMMUNITY ENG \sim E. 2016 Population By-census Statistics (By Small Street Block Group) ENT Population UPDATE FREQUENCY: AD HOC This 2016 Population By-census dataset contains statistics relevant to demographic, household and housing characteristics This 2014 optimizer industry and a second se 1 XLSX file(s) | 1 CSV file(s) a⊢ Add All to Queue DATA RESOURCES 2 Search data resources 2016 Population By-census Statistics (By Small Street Block Group) [Excel Tables] [Bilingual(Traditional Chinese and Enulishi) \downarrow

download population by-census statistics by small street block group.

The csv data includes the number of small street block groups, total population density of domestic households and occupied quarters. However, there is no geo reference value in the census data, to link it to urban spatial data, we could download the vector data of small street block group outline. Through the match of the attribute table of two data, we could add census value to the vector layer.

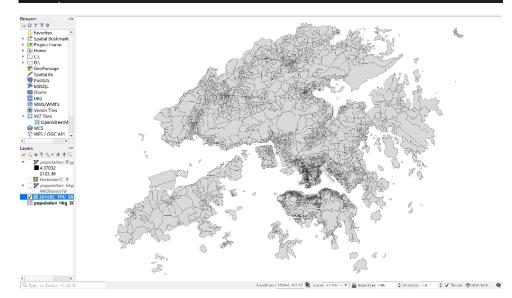
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Small Street E 2 Group	Block Name of Small Street Block Group (in English)	Name of Small Street Block Group (in Chinese)	Total population	Domestic households	Occupied quarters	
3 ssbg	ssbg_eng	ssbg_chi	t_pop	dh	poq	
4 11101S	111/01-02 and 111/37-38	111/01-02 及 111/37-38	1766	418	433	
5	11103 111/03	111/03	1539	670	670	
6	11104 111/04	111/04	2269	818	810	
7	11105 111/05	111/05	1210	428	428	
8	11106 111/06	111/06	1032	414	424	
9	11107 111/07	111/07	2189	721	742	
10	11108 111/08	111/08	649	280	280	
11	11109 111/09	111/09	879	383	391	
12	11110 111/10	111/10	1041	399	409	
13	11111 111/11	111/11	2102	868	868	
14	11112 111/12	111/12	2888	1204	1185	
15 111135	111/13 and 111/15	111/13 及 111/15	1058	402	402	
16 11114S	111/14 and 111/40-42	111/14 及 111/40-42	1637	660	671	
17 11116S	111/16-17	111/16-17	8962	2544	2578	
18 111185	111/18-20	111/18-20	2910	1069	1069	
19	11121 111/21	111/21	1660	729	740	
20	11122 111/22	111/22	5175	2053	2042	
21	11123 111/23	111/23	909	382	382	
22	11124 111/24	111/24	1265	470	482	
23	11125 111/25	111/25	1830	737	725	
24	11126 111/26	111/26	8674	3205	3520	
25	11127 111/27	111/27	805	302	322	
26	11128 111/28	111/28	858	353	353	
27 11129S	111/29-30	111/29-30	1092	393	393	
28 11131S	111/31-32	111/31-32	713	313	313	
29 11135S	111/35 and 111/43	111/35 及 111/43	1668	595	736	
	11139 111/39	111/39	2149	678	685	



2.2 To pre-processing census data in csv

Firstly, to open the small street-level block group outline, drag the GML into QGIS, open the attribute table, the values named 'TPU' and 'SB_VC' is consistent with 'Name of Small Street Block Group' in census .csv.

📙 « datase	t > small street level_boundary	~	ひ 夕 搜索"smal	ll street level_bou
	名称	修改日期	类型	大小
*	2016BC_TPU_SB_VC.geojson	2021/12/7 14:53	GEOJSON 文件	83,179 KB
	2016BC_TPU_SB_VC.gfs	2022/1/7 13:14	GFS 文件	2 KB
*	2016BC_TPU_SB_VC.gml	2021/12/7 14:53	GML 文件	45,757 KB
*				



2016BC_TPU_SB_VC — Features Total: 5034, Filtered: 5034, Selected: 0

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	PPU	SPU	TPU	SB_VC	TYPE_Eng	TYPE_TC	TYPE_SC	Shape_Length	Shape_Area
	9	93	934		1 Village Clusters	村落統計區	村落统计区	618.05826520	16694.709189
	9	93	934		1 Village Clusters	村落統計區	村落统计区	8105.7889744	1248395.8002
	9	93	934		2 Village Clusters	村落統計區	村落统计区	1778.3130755	58029.489051
	9	93	934		2 Village Clusters	村落統計區	村落统计区	393.18056201	6692.1468167
	9	93	934		2 Village Clusters	村落統計區	村落统计区	772.56626930	30218.776624
	9	91	913		1 Village Clusters	村落統計區	村落统计区	336.91974956	5298.6428393
	9	93	934		2 Village Clusters	村落統計區	村落统计区	212.98979033	2588.4450472
	9	93	934		2 Village Clusters	村落統計區	村落统计区	409.39235362	5342.8687427
	9	93	934		2 Village Clusters	村落統計區	村落统计区	354.87269555	3298.7660456
)	9	93	934		2 Village Clusters	村落統計區	村落统计区	1290.4083298	53192.952807
	9	91	913		1 Village Clusters	村落統計區	村落统计区	14552.463597	3691721.0224
2	9	91	913		1 Village Clusters	村落統計區	村落统计区	103.71349284	496.89998918
3	9	91	913		1 Village Clusters	村落統計區	村落统计区	1468.1814198	45111.353707
1	9	93	934		2 Village Clusters	村落統計區	村落统计区	7582.9922294	715092.94818
5	9	91	913		1 Village Clusters	村落統計區	村落统计区	2462.1023212	51565.716967
5	9	91	913		1 Village Clusters	村落統計區	村落统计区	3658.2479703	476056.83361
7	9	91	913		1 Village Clusters	村落統計區	村落统计区	5788.4445999	1209364.8880
3	9	91	913		1 Village Clusters	村落統計區	村落统计区	752.64168361	21494.924673
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Save vector layers as csv, we could get the files below, each block has a unique value named 'OBJECTID', for joining the census data, we need to add the 'OBJECTID' to the census csv.

🔇 Save Vect	or Layer as		×				
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1	OBJECTID	PPU	SPU	TPU	SB_VC	TYPE_Eng	TYPE	_TC	TYPE.	SC	Shape_Leng	Shape_Area
2	1469	2	22	227	1	Street Blo	c 琛榕	绲翔	琛榕	缁灼	7326.231463	
3	1475	2	22	227	2	Street Blo	xc 琛榕	绲翔	琛榕	缁灼	6357.760481	
4	1480	2	23	232	4	Street Blo	c 琛榕	绲翔	琛楁	缁炸	43967.89517	
5	1512	2	22	227	3	Street Blo	c 琛榕	绲翔	琛楁	缁炸	6660.845249	
6	1517	2	22	227	4	Street Blo	c 琛榕	绲翔	琛楁	缁炸	6424.370144	
7	1558	2	22	227	5	Street Blo	c 琛榕	绲翔	琛楁	缁炸	6793.069837	
8	1564	2	23	235	3	Street Blo	c 琛榕	绲翔	琛榕	缁炸	4262.862473	
9	1570	2	22	222	15	Street Blo	oc 琛榕	绲翔	琛楁	缁炸	11044.89187	
10	1576	2	22	222	11	Street Blo	c 琛榕	绲翔	琛楁	缁炸	6706.736233	
11	1650	2	23	235	1	Street Blo	c 琛榕	绲翔	琛榕	缁灼	17811.53334	
12	1655	2	23	235	2	Street Blo	c 琛榕	绲翔	琛楁	缁炸	11191.20356	
13	1664	2	23	232	1	Street Blo	c 琛榕	绲翔	琛榕	缁炸	87558.7058	
14	1703	2	22	222	30	Street Blo	c 琛榕	绲翔	琛榕	缁炸	5990.609449	
15	1777	2	23	235	4	Street Blo	c 琛榕	绲翔	琛榕	缁炸	24330.17528	
16	1819	2	22	222	26	Street Blo	oc 琛榕	绲鹑	琛楁	缁灼	3840.17097	
17	1824	2	23	232	10	Street Blo	c琛榕	绲鹑	琛榕	缁灼	18027.18127	
18	1946	2	22	222	20	Street Blo	c琛榕	绲翔	琛榕	缁灼	7639.480697	
19	1984	2	22	222	21	Street Blo	c 琛榕	绲翔	琛楁	缁灼	7982.482446	
20	1988	2	22	222	22	Street Blo	c琛榕	绲翔	琛楁	缁灼	7788.985414	

Before adding the new value, we need to pre-processing the original census csv data, select followed area, click 'Statistics'- 'Branch', split corresponding TPU and SB_VC into two columns, after that, we could join ''OBJECTID' value by searching same values. Taking Mong Kok as an example, the processed data shows as follow.

	域 用的源 连接 ~	□。编辑链接 A4	▶ 清除 ● 重新应用 ● 高级 和時送	→ 分列 快速現允 町除 数据验合 重复信 モッ 数居工具	→ 二 日 #計算 关系 管理数 模 据模型	· 和分析 预测 · 工作表 预测	13 12 組合 取消組合 分級型			
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B1 * : ×	✓ fx 街段→小合併約	沮 (英文名稱)								
A	В	с	D	E	F	G H	1.1.1	л к		
1 街段-小合併組	街段-小合併組(英文名稱)街段-小合併組(中文名稱)			居住的屋宇單位數日					
2 Small Street Block Grou		Name of Small Street Block Gr								
3 ssbg	ssbg_eng	ssbg_chi		dh oq						
4 11101S	111/01-02 and 111/37-38	111/01-02 及 111/37-38	1766	418	433					
5 11103 6 11104	111/03	111/03	1539	670	670					
6 11104	111/04	111/04	2269	818	810					
7 11105	111/05	111/05	1210	428	428					
8 11106	111/06	111/06	1032	414	424					
	111/07	111/07	2189	721	742					
	111/08	111/08	649	280	280					
11 11109	111/09	111/09	879	383	391					
	111/10	111/10	1041	399	409					
13 11111	111/11	111/11	2102	868	868					
	111/12	111/12	2888	1204	1185					
15 11113S	111/13 and 111/15	111/13 及 111/15	1058	402	402					
16 11114S	111/14 and 111/40-42	111/14 及 111/40-42	1637	660	671					
17 11116S	111/16-17	111/16-17	8962	2544	2578					
18 11118S	111/18-20	111/18-20	2910	1069	1069					
	111/21	111/21	1660	729	740					
20 11122	111/22	111/22	5175	2053	2042					
21 11123	111/23	111/23	909	382	382					
	111/24	111/24	1265	470	482					
23 11125	111/25	111/25	1830	737	725					
	111/26	111/26	8674	3205	3520					
	111/27	111/27	805	302	322					
26 11128	111/28	111/28	858	353	353					
27 111295	111/29-30	111/29-30	1092	393	393					
28 11131S	111/31-32	111/31-32	713	313	313					
29 11135S	111/35 and 111/43	111/35 及 111/43	1668	595	736					
	111/39	111/39	2149	678	685					
31 111445 SSBG_16BC	111/44 and 111/46-49	111/44 及 111/46-49	709	164	164					

8

文本分列向导 - 第 1 步, 共 3 步	?	×	文本分列向导 - 第 2 步, 共 3 步		?	×
文本分列向导判定您的数据具有分隔符。			请设置分列数据所包含的分隔符号。在预览窗口内可看到分列的	的效果。		
若一切设置无误,请单击"下一步",否则请选择最合适的数据类型。			分隔符号			
原始数据类型			☑ Tab 键(I)			
请选择最合适的文件类型: ④ 分隔符号(D) - 用分隔字符,如逗号或制表符分隔每个字段			□ 分号(<u>M</u>) □ 连续分隔符号视为单个处理(<u>R</u>)			
			□ 逗号(<u>C</u>) 文本识别符号(<u>Q</u>):			
			☑ 其他(Q): /			
			数据预览(P)			
预览选定数据:						
1.街段 - 小合併組(英文名稱) 2.Name of Small Street Block Group (in English)		^	街段 - 小合併組(英文名稱) Name of Small Street Block Group (in English)			^
3 ssbg_eng 4111/01-02 and 111/37-38			ssbg_eng	ind 111 37-38		
5 111/01 02 and 111/01 03 6 111/04			111 01-02 a 111 03 111 04	ind 111 37-38		
		~				×
取消 < 上一步(B) 下一步(N) >	完成	t(E)	取消 < 上一步(<u>B</u>)	下一步(<u>N</u>) >	完成(E)

	А	В	С	D	E
1	OBJECTID	TPU	SB_VC	Т_рор	
2	1576	222	11	843	
3	1430	222	12	1663	
4	1570	222	15	2062	
5	1620	222	17	1921	
6	1942	222	19	510	
7	1946	222	20	1179	
8	1984	222	21	1936	
9	1988	222	22	2072	
10	1774	222	24	708	
11	1700	222	29	1370	
12	1819	222	26	696	
13	1703	222	30	1006	
14	1469	227	1	590	
15	1475	227	2	595	
16	1512	227	3	1387	
17	1517	227	4	438	
18	1558	227	5	787	
19	1563	227	6	871	
20	2059	227	8	644	

2.3 To join census data to geo-tagged shapefile (join attribute table)

We could import this csv file without any further action and it would be imported. But, the default type of each column would be a String (text).

To tell QGIS to import the field as a number, we need to create a sidecar file with a .csvt extension. This file will have only 1-row specifying data types for each column. Save this file as ca_tracts_pop.csvt in the same directory as the original .csv file.

文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H) "Integer","Real","Integer","Integer"

🔊 census_mke_NEW.csv	2021/12/7 17:04	Microsoft Excel 逗
census_mke_NEW.csvt	2021/12/7 17:17	CSVT 文件

Now we are ready to import the CSV file to QGIS. Go to Layer \checkmark Add Delimited Text Layer. Browse to the folder containing the CSV file and select it. Make sure you have selected File format as CSV (comma-separated values). Since we are importing this as a table, we must specify that our file contains no geometry. Select the No geometry (attribute only table) option. Click OK.

In the Layer Properties dialog, select the Joins tab. Click on the + button at the bottom to create a new table join.

Q Layer Properties -	— Clipped — Joins			×
Q	Setting	Value		
🥡 Information	A			
Source				
ኛ Symbology				
(abc Labels				
龅 Masks				
幹 3D View				
📬 Diagrams				
📋 Fields				
🔡 Attributes Form				
 Joins 				
Auxiliary Storage				
actions				
🧭 Display				
🞸 Rendering				
🕓 Temporal	f = 🥖			
🗧 Variables	▼ Style ▼		OK Cancel Appl	ly Help

In the Add vector join dialog, select census_mke_NEW as the Join layer. Next, we have to select the field with unique ids in both the shapefile and the CSV. Select T_pop as the Join field and Target field respectively. Click OK.

🔇 Add Vector Join	×					
Join layer	census_mke_NE 💌					
Join field	123 OBJECTID 🔹					
Target field 123 OBJECTID 💌						
✔ Cache join layer in memory						
Create attribute index on join field						
Dynamic form						
▶ _ Edi <u>t</u> able join :	layer					
▼✔ Joined fields						
OBJECTID TPU SB_VC ✔ T_pop						
Custom field name prefix						
	OK Cancel					

Q Layer Properties -	– Clipped — Joins		\times
Q	Setting	Value	
G Information	Join layer	census_mke_NEW	
	Join field	OBJECTID	
Source	Target field	OBJECTID	
	Cache join layer in virtual memor	у 🗸	
🐳 Symbology	Dynamic form		
(abc Labels	Editable join layer		
Labels	Upsert on edit		
🕮 Masks	Delete cascade		
<u>^</u>	Custom field name prefix Joined fields	1	
প 3D View	Joined fields	1	
🛉 Diagrams			
📔 Fields			
🔡 Attributes Form			
 Joins 			
Auxiliary Storage			
🔅 Actions			
🧭 Display			
🞸 Rendering			
🕓 Temporal			
\mathcal{E} Variables	Style 🔻 🛛	K Cancel Apply	He1p

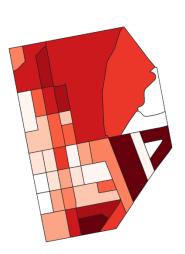
Open the Attribute table, we could find the census value is already added.

-			ed: 41, Selected: 0		~					- 0	×
/ 1	OBJECTID	PPU	spu	TPU	SB VC TYPE Eng	TYPE TC	TYPE SC	Shape Area	Shape Leng	IS mke NEW 1*	
1	1777	2	23	235	4 Street Blocks	街段統計區	街段统计区		962.518878720364		
2	2105	2	23	235	5 Street Blocks	街段統計區	街段统计区	13807.234499	505.918712727267	. 272	2
3	1650	2	23	235	1 Street Blocks	街段統計區	街段统计区	17811.533343	573.761212600301	. 2476	6
\$	2537	2	22	227	23 Street Blocks	街段統計區	街段统计区	10571.139164	416.649421436503.	. 227	3
5	2624	2	22	227	22 Street Blocks	街段統計區	街段统计区	11879.412611	555.330704478547	. 2129	9
5	1988	2	22	222	22 Street Blocks	街段統計區	街段统计区	7788.9854143	390.702156664122	. 2077	2
7	1570	2	22	222	15 Street Blocks	街段統計區	街段统计区	11044.891866	492.684997893099.	. 2062	2
8	1984	2	22	222	21 Street Blocks	街段統計區	街段统计区	7982.4824457	388.835584596606	. 1936	6
Э	1620	2	22	222	17 Street Blocks	街段統計區	街段统计区	52971.286264	1515.52657380998	. 192	1
10	2577	2	22	227	21 Street Blocks	街段統計區	街段统计区	7637.2207374	386.780776955529	. 170	5
11	1430	2	22	222	12 Street Blocks	街段統計區	街段统计区	6626.0021974	347.351554466553	. 166:	3
12	2625	2	22	227	24 Street Blocks	街段統計區	街段统计区	8116.9298426	441.395518304027	. 1558	8
T SI	how All Features	-	22	222		28-CD 58-1 100	AP- CR (AP-) 1 P-7	07550 705004	1215 5220 1020 102	1	8

2.4 To edit the symbology

To visualize the population, open the layer properties, change the mode to 'Graduated', select the 'colour ramp', identify classes number, click 'Classify', and click OK.

		No Symbols	
1	Q Layer Properties –	📮 Single Symbol	
ł		📮 Categorized	
	Q	🚍 Graduated	
	Information		
	3	 Inverted Polygons 2.5 D 	
	💸 Source	2.5 D	
	😻 Symbology	Legend format %1 - %2	recision 🕼 🗘 🗸 Trim
	(abc Labels	Color ramp	▼
	ණ Masks	Classes Histogram	
	욱 3D View	Symbol 🔻 Values Legend	
1	🙀 Diagrams	267.00 - 514.50 267 - 515	
		✓ 514.50 - 644.00 515 - 644 ✓ 644.00 - 712.50 644 - 713	
	Fields	✓ 712.50 712.50 713 - 789	
	🔡 Attributes Form	▼ 789.00 - 899.50 789 - 900	
		✓ 899.50 - 1370.00 900 - 1370	
	Joins	✓ 1370.00 - 1610.50 1370 - 1611	
	🚁 Auxiliary	✓ 1610.50 - 1936.00 1611 - 1936 ✓ 1936.00 - 2201.00 1936 - 2201	
	Storage		•
	Sections	Mode 🔣 Equal Count (Quantile) 🔻	Classes 10 🗘
1	🧭 Display	Classify 🕂 📼 Delete All	Advanced 🔻
	🞸 Rendering	✔ Link class boundaries	
	🕓 Temporal	▶ Layer Rendering	
	🗧 Variables 🗖	Style 🔻	OK Cancel Apply Help



Q Layer Properties — Clipped — Symbology					×
Q s 🛛 🛛	Graduated				-
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😻 Symbology	Legend format	%1 - %2		recision 📲	🗘 🗸 Trim
(abc Labels	Color ramp				-
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🐪 Diagrams		67.00 - 514.50 14.50 - 644.00	267 - 515 515 - 644		
📔 Fields		44.00 - 712.50 12.50 - 789.00	644 - 713 713 - 789		
🔡 Attributes Form	✓ 7	89.00 - 899.50	789 - 900		
• ┥ Joins		99.50 - 1370.00 370.00 - 1610.50			
Auxiliary Storage	✓ 1	610.50 - 1936.00 936.00 - 2201.00	1936 - 2201		-
Sections	Mode Equal	Count (Quantil	e) 💌	Classe	s 10 🗘
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🞸 Rendering	✔ Link class boundaries				
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🗧 Variables 🗸 🗸	Style 💌			OK Cancel Ap	ply Help