

Workshop Week 2 – Driving AURIN

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AURIN

The screenshot displays the AURIN website interface. At the top, the browser address bar shows <https://aurin.org.au>. The navigation bar includes links for Most Visited, Getting Started, Account Management, Contact Directory, EHS, Exchange OWA, HR, Library, Service Desk, Themis, and Service Portal. Below this, the AURIN logo is accompanied by the tagline 'AUSTRALIA'S SPATIAL INTELLIGENCE NETWORK.' and buttons for AURIN PORTAL, AURIN MAP, and DATA SEARCH. The main content area features a map with various colored markers. A dropdown menu is open, listing options: AURIN Workbench, Data, Help and Tutorials, Research Impacts, Partnering With AURIN, and Publications. A 'Modify WFS Connection' dialog box is overlaid on the right, showing details for 'aurin open api' with the URL 'http://openapi.aurin.org.au/wfs'. The dialog includes an Authentication section with 'User name' set to 'research' and a masked 'Password'. It also has a 'Convert to configuration' button. The WFS Options section shows 'Version' set to 'Auto-detect', 'Max. number of features' set to 1000, and checkboxes for 'Ignore axis orientation (WFS 1.1/WFS 2.0)' and 'Invert axis orientation'. The dialog has 'Help', 'Cancel', and 'OK' buttons.

DATA AND TOOLS FOR SMARTER DECISIONS
AURIN API
API for programmatic access to an extensive range of datasets from the AURIN Workbench.
[FIND OUT MORE](#)

WHAT IS AURIN?

AURIN is crucial infrastructure for researchers, government and industry, accelerating research into our towns, cities and communities. We provide the data and tools to allow you to make evidence-based decisions quickly and confidently, and we can help you get in touch with world leading urban experts right here in Australia.

RESEARCHERS
& STUDENTS
INFORMATION

GOVERNMENT
INFORMATION

BUSINESS &
START-UPS
INFORMATION

Scenarios

- **Note**
 - Staging vs Production (<https://portal.aurin.org.au>)
- **Logging in**
 - AAF (more later)
- **Area selection**
 - the many ways Australia can be aggregated/mapped
- **Data searching**
 - What data is available for the area selected
- **Data shopping**
 - Selecting data of interest
 - (Start small...!!!)
- **Data visualisation/mapping**
 - Putting data onto maps
- **Data downloading**
 - Getting JSON, CSV
- **Data spatialising**
 - Getting Shapefiles (including the polygons for suburbs etc!)
- **More advanced statistics**
 - Not needed for assignments but you might (?) be interested...!

Logging In

- Go to <https://portal.aurin.org.au>
- Select The University of Melbourne
- Log in with your UniMelb username/password

Login to AURIN Portal

Access Portal for the Australian Urban Research Infrastructure Network (AURIN) Project;
Data sources include and are not limited to: demographic information, population health

Please select your organisation below, you will be redirected to complete the login process.

AAF Virtual Home

AARNet

AIMS

ANSTO

Continue to your organisation

☐ Remember my organisation

Keyboard shortcuts



Australian Access Federation

[Current AAF status](#)
[Contact AAF support](#)

- Agree to terms and conditions that pops up
 - (you promise not to do bad things with data or sell it etc)

Area Selection

(Aus->Vic->SA4->SA3->SA2 Melbourne)

The screenshot displays the AURIN Australian Urban Research Infrastructure Network Portal. The main interface is divided into several sections:

- Header:** AURIN Australian Urban Research Infrastructure Network Portal. (All changes saved) Logged in as Richard Sinnott Project CCC2020 Help MyAURIN
- Left Panel:**
 - Define Area Study: Australia (Country/au)**
 - Select
 - Search
 - Browse
 - Country: Australia (au)
 - Select the sub-level
 - Select the sub-level
 - States and Territories
 - Postal Areas (ABS 2011)
 - Postal Areas (ABS 2016)
 - Functional Economic Regions (2006)
 - Functional Economic Regions (2011)
 - Working Zones
 - Australia (Country/au)**
- Center Panel:**
 - Define Area Study: Melbourne (Statistical Areas 2 (2016)/206041122)**
 - Select
 - Search
 - Browse
 - Country: Australia (au)
 - States and Territories: Victoria (2)
 - Statistical Areas 4 (2016): Melbourne - Inner (206)
 - Statistical Areas 3 (2016): Melbourne City (20604)
 - Statistical Areas 2 (2016): Melbourne (206041122)
 - Select the sub-level
 - Melbourne (Statistical Areas 2 (2016)/206041122)**
[144.9514, 37.8231, 144.9749, 37.8059]
- Right Panel:**
 - Area**
 - Area Selection
 - Melbourne (sa2_2016/206041122)
 - Bounding-box Selection
 - Data**
 - Browse
 - Import
 - Draw
 - Visualise**
 - Maps, Charts and Graphs
 - Map Overlays
 - Analyse**
 - Tools

The map shows a detailed view of Melbourne, Victoria, Australia, with various streets and landmarks labeled. The map is overlaid with a grid of Statistical Areas 2 (SA2) for the year 2016. The selected area is highlighted in blue. The map is titled "Melbourne (Statistical Areas 2 (2016)/206041122)".

© OpenStreetMap contributors
portal version v1.4.1

Data Browsing/Searching (e.g. language)

Study Area:

Melbourne (sa2_2016/206041122)

Keywords:

Year:

Organisation:

All

Aggregation Level:

All sub-levels

SEARCH

Available Datasets (1997)

Title	Organisation	Begin Date	End Date
SA1-G12b Proficiency in Spoken Eng by Parents by A...	AU_Govt_A...	2016-08...	2016-08...
SA1-P30 Household Composition by Number of Per...	AU_Govt_A...	2016-08...	2016-08...
City of Melbourne CLUE Employment by CLUE Indus...	VIC_LGovt_...	2009-01...	2009-12...
ABS Census - U15 Type Of Education Institution Bein...	AU_Govt_A...	1986-06...	1986-07...
SA1-P29 Number of Motor Vehicle by Dwelling Struc...	AU_Govt_A...	2016-08...	2016-08...
SA1-based B42B Labour Force Status by Age by Sex ...	AU_Govt_A...	2011-01...	2011-12...
VIC DELWP - Vicmap Vegetation - Tree Density - Scatt...	VIC_Govt_D...	1991-03...	2001-10...
PSMA - CadLite (Polygon) (August 2017)	PSMA	2017-08...	2017-08...
Infoboxchange - Ask Izzy Service Demand - Housing an...	Infoboxchange	2018-01...	2018-12...
ABS Census - E38 Nature Of Occupancy by Landlord ...	AU_Govt_A...	1991-08...	1991-08...
LGA-T16 Occupation by Sex-Census 1996	AU_Govt_A...	1986-08...	1996-08...
VIC MWC - Directly Connected Imperviousness (DCI) ...	MWC	2005-06...	2009-07...
VIC DELWP - Recreation Sites (Points)	VIC_Govt_D...	2013-07...	2019-12...
SA1-G36 Rent (Weekly) by Landlord Type-Census 2016	AU_Govt_A...	2016-08...	2016-08...
ABS Census - C19 Occupational Status (LGA) 1981	AU_Govt_A...	1981-06...	1981-06...
National Register Education Services in Australia (P...	ACECQA	2017-06...	2017-06...
SA1-G44f Labour Force Status by Sex of Parents by A...	AU_Govt_A...	2016-08...	2016-08...
ABS Census - B19 Labour Force Status (Part-Time/Fu...	AU_Govt_A...	1991-08...	1991-08...
AEDC - Health Subdomain 2 (SA2) 2009-2018	AU_Govt_A...	2009-01...	2018-12...
SA2-P43a Occupation by Age by Sex-Census 2016	AU_Govt_A...	2016-08...	2016-08...
ABS Census - B16 Qualification (Highest) Level By Se...	AU_Govt_A...	1991-08...	1991-08...
Bicycle Network - Melbourne Super Tuesday Bike Co...	BN	2013-03...	2013-03...
LGA-T02D Age by Sex-Census 1996	AU_Govt_A...	1986-08...	1996-08...
VicRoads - Bridge Structures (Point) 2018	VIC_Govt_Vi...	2015-01...	2017-07...
VIC DELWP - Victoria In Future 2016 - ERP by 5-year A...	VIC_Govt_D...	2011-01...	2031-12...
ABS - Socio-Economic Indexes for Areas (SEIFA) (SLA...	AU_Govt_ABS	2001-01...	2001-12...
ABS Census - T10 Religion By Sex (LGA) 1991	AU_Govt_A...	1981-06...	1991-08...
ABS Census - E32 Type Of Non-Private Dwelling (LGA...	AU_Govt_A...	1991-08...	1991-08...
SA2-G04b Age by Sex-Census 2016	AU_Govt_A...	2016-08...	2016-08...
SA2 Jobs In Australia - Employee Jobs and Income b...	AU_Govt_ABS	2012-07...	2013-06...
Bicycle Network - Australia Super Tuesday Bike Cou...	BN	2015-09...	2015-09...
VIC DELWP - Catchment Management Authority - Bo...	VIC_Govt_D...	1997-07...	2003-10...
SA2-P24 Number of Children Ever Born by Age of Pa...	AU_Govt_A...	2016-08...	2016-08...
CCD-B02 State of Usual Residence on Census Night ...	AU_Govt_A...	1996-08...	1996-08...
ABS Census - E06 Birthplace (Countries) By Sex (LGA...	AU_Govt_A...	1991-08...	1991-08...
SA2-W18a Occupation by Total Personal Income (we...	AU_Govt_A...	2016-08...	2016-08...
SA2-W22d Method of Travel to Work by Age by Sex-C...	AU_Govt_A...	2016-08...	2016-08...
ABS Census - B43 Household Type By Family Type B...	AU_Govt_A...	1991-08...	1991-08...
ABS Census - E36 Family Type By Birthplace Of Pare...	AU_Govt_A...	1991-08...	1991-08...

Save as: Untitled Dataset

Study Area:

Melbourne (sa2_2016/206041122)

Keywords:

language

Year:

Organisation:

All

Aggregation Level:

All sub-levels

SEARCH

Available Datasets (134)

Title	Organisation	Begin Date	End Date
VIC DET - School Zones - Secondary Year 7 (Polygon)...	VIC_Govt_DET	2020-01...	2020-12...
ABS Census - E12 Birthplace (Countries) By Proficien...	AU_Govt_A...	1991-08...	1991-08...
SA1-G11d Proficiency in Spoken Eng by Year of Arriv...	AU_Govt_A...	2016-08...	2016-08...
VIC DET - School Zones - Secondary Year 8 (Polygon)...	VIC_Govt_DET	2020-01...	2020-12...
National Health Services Directory (NHSD) (Point) 2...	Healthdirect	2016-11...	2016-11...
SA2-G11b Proficiency in Spoken Eng by Year of Arriv...	AU_Govt_A...	2016-08...	2016-08...
SA1-G11c Proficiency in Spoken Eng by Year of Arriv...	AU_Govt_A...	2016-08...	2016-08...
AEDC - Social Competence (SA2 Modified) 2009-2018	AU_Govt_A...	2009-01...	2018-12...
SA1-G13c Language Spoken At Home by Proficiency ...	AU_Govt_A...	2016-08...	2016-08...
ABS Census - B11 Language Spoken At Home By Sex...	AU_Govt_A...	1991-08...	1991-08...
SA1-based B01 Selected Person Characteristics by S...	AU_Govt_A...	2011-01...	2011-12...
ABS Census - T01 Selected Characteristics - All Perso...	AU_Govt_A...	1981-06...	1991-08...
SA1-based B12a Proficiency in Spoken English/Lang...	AU_Govt_A...	2011-01...	2011-12...
VIC DET - School Zones - Secondary Year 9 (Polygon)...	VIC_Govt_DET	2020-01...	2020-12...
AEDC - Vulnerable on One or More Domains (SA2 Mo...	AU_Govt_A...	2009-01...	2018-12...
AEDC - Health Subdomain 2 (SA2) 2009-2018	AU_Govt_A...	2009-01...	2018-12...
VIC DET - School Zones - Single Sex Schools (Polygo...	VIC_Govt_DET	2020-01...	2020-12...
ABS Census - U01 Selected Characteristics (LGA) 1991	AU_Govt_A...	1991-08...	1991-08...
SA2-G12a Proficiency in Spoken Eng by Parents by A...	AU_Govt_A...	2016-08...	2016-08...
ABS Census - E12 Birthplace (Countries) By Proficien...	AU_Govt_A...	1991-08...	1991-08...
ABS Census - U16 Language Spoken At Home By Sex...	AU_Govt_A...	1991-08...	1991-08...
ABS Census - C13 Competency In Eng Lang Of Overs...	AU_Govt_A...	1981-06...	1981-06...
SA1-P12b Proficiency in Spoken Eng by Parents by A...	AU_Govt_A...	2016-08...	2016-08...
National Health Services Directory (NHSD) (Point) 2...	Healthdirect	2015-10...	2015-10...
ABS Census - E15 Language Spoken At Home By Pro...	AU_Govt_A...	1991-08...	1991-08...
SA1-G13a Language Spoken At Home by Proficiency...	AU_Govt_A...	2016-08...	2016-08...
ABS Census - B12 Proficiency In English By Year Of A...	AU_Govt_A...	1991-08...	1991-08...
National Health Services Directory (NHSD) (Point) 2...	Healthdirect	2017-01...	2017-12...
SA2-P01 Selected Person Characteristics by Sex-Cen...	AU_Govt_A...	2016-08...	2016-08...
SA2-G13c Language Spoken At Home by Proficiency ...	AU_Govt_A...	2016-08...	2016-08...
SA2-P11b Proficiency in Spoken Eng by Year of Arriv...	AU_Govt_A...	2016-08...	2016-08...
SA1-G12b Proficiency in Spoken Eng by Parents by A...	AU_Govt_A...	2016-08...	2016-08...
SA2-W08a Industry of Employment by Year of Arrival...	AU_Govt_A...	2016-08...	2016-08...
LGA Population & People - National Regional Profile ...	AU_Govt_ABS	2010-01...	2014-12...
SA1-P01 Selected Person Characteristics by Sex-Cen...	AU_Govt_A...	2016-08...	2016-08...
ABS Census - E16 Age By Proficiency In English By Se...	AU_Govt_A...	1991-08...	1991-08...
SA1-P12a Proficiency in Spoken Eng by Parents by A...	AU_Govt_A...	2016-08...	2016-08...
AEDC - Communication Skills and General Knowled...	AU_Govt_A...	2009-01...	2018-12...
SA2-W08b Industry of Employment by Year of Arrival...	AU_Govt_A...	2016-08...	2016-08...

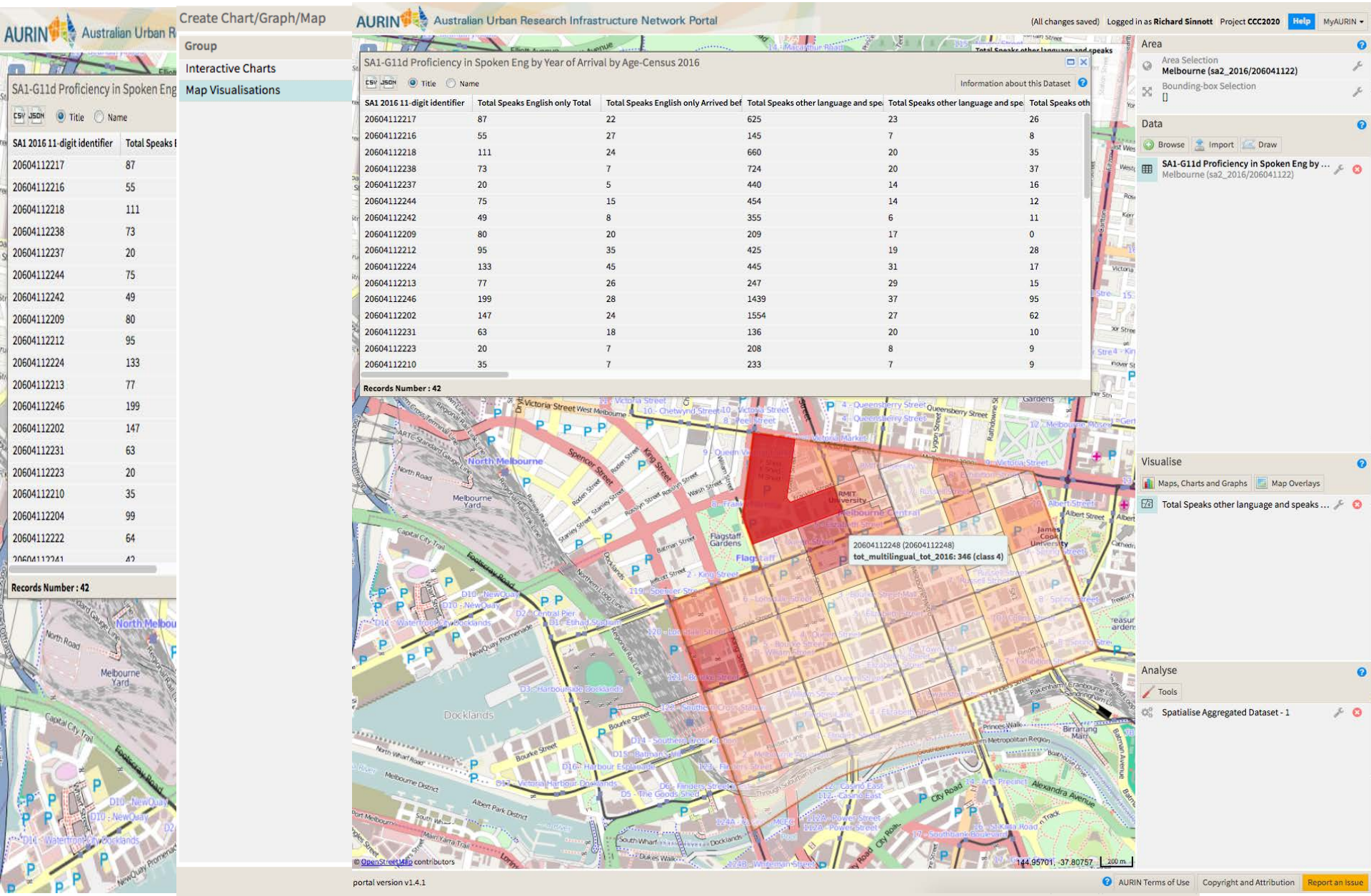
Save as: SA1-G11d Proficiency in Spoken Eng by Year of Arrival by Age-Census 2016

Total Speaks English only Year of arrival not stated (tot_spks_eng_only_arrival_notstated)
Total Speaks English only Year of arrival not stated.

Attribute	Name	Type
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_spks_eng_well...	Integer
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_spks_eng_well...	Integer
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_spks_eng_well...	Integer
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_spks_eng_well...	Integer
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_spks_eng_well...	Integer
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_spks_eng_well...	Integer
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2000_05	Integer
<input type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2006_10	Integer
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2011	Integer
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2012	Integer
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2013	Integer
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2014	Integer
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2015	Integer
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_2016	Integer
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilineal_tot_arrival_nots...	Integer
<input checked="" type="checkbox"/> Total Speaks other language an	Total Speaks other language and speaks English Total Arrived 2016.	
<input checked="" type="checkbox"/> Total Speaks other language and ...	tot_multilingual_tot_tot	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2000_05	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2006_10	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2011	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2012	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2013	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2014	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2015	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_2016	Integer
<input checked="" type="checkbox"/> Total Speaks English only Year of ...	tot_spks_eng_only_arrival_notst...	Integer
<input checked="" type="checkbox"/> Total Speaks English only Arrived ...	tot_spks_eng_only_bef_2000	Integer
<input checked="" type="checkbox"/> Total Speaks English only Total	tot_spks_eng_only_tot	Integer
<input type="checkbox"/> Total Total Arrived 2000-2005	tot_tot_2000_05	Integer
<input type="checkbox"/> Total Total Arrived 2006-2010	tot_tot_2006_10	Integer
<input type="checkbox"/> Total Total Arrived 2011	tot_tot_2011	Integer
<input type="checkbox"/> Total Total Arrived 2012	tot_tot_2012	Integer
<input type="checkbox"/> Total Total Arrived 2013	tot_tot_2013	Integer
<input type="checkbox"/> Total Total Arrived 2014	tot_tot_2014	Integer
<input type="checkbox"/> Total Total Arrived 2015	tot_tot_2015	Integer
<input type="checkbox"/> Total Total Arrived 2016	tot_tot_2016	Integer
<input type="checkbox"/> Total Total Year of arrival not stated	tot_tot_arrival_notstated	Integer
<input type="checkbox"/> Total Total Arrived before 2000	tot_tot_bef_2000	Integer
<input type="checkbox"/> Total Total Total	tot_tot_tot	Integer

Add & Op

Data Shopping/Mapping



Data Download (e.g. CSV, JSON)

AURIN Australian Urban Research Infrastructure Network Portal (All changes saved) Logged in as Richard Sinnott Project CCC2020 Help MyAURIN

SA1-G11d Proficiency in Spoken Eng by Year of Arrival by Age-Census 2016

CSV JSON Title Name Information about this Dataset

SA1 2016 11-digit identifier	Total Speaks English only Total	Total Speaks English only Arrived bef	Total Speaks other language and spe	Total Speaks other language and spe	Total Speaks oth
20604112217	87	22	625	23	26
20604112216	55	27	145	7	8
20604112218	111	24	660	20	35
20604112238	73	7	724	20	37
20604112237	20	5	440	14	16
20604112244	75	15	454	14	12
20604112242	49	8	355	6	11
20604112209	80	20	209	17	0
20604112212	95	35	425	19	28
20604112224	133	45	445	31	17
20604112213	77	26	247	29	15
20604112246	199	28	1439	37	95
20604112202	147	24	1554	27	62
20604112231	63	18	136	20	10
20604112223	20	7	208	8	9
20604112210	35	7	233	7	9
20604112204	99	13	495	22	35
20604112222	64	15	383	8	10
20604112241	40	11	308	7	17

Records Number: 42

Visualise
Maps, Charts and Graphs Map Over
Total Speaks other language and sp

Tools

Data

Browse Import Draw

SA1-G11d Proficiency in Spoken Eng by ...
Melbourne (sa2_2016/)

- Open Attribute Table
- Rename Dataset
- Display on Map
- Zoom to Layer
- Place Bounding Box Here
- Edit Attribute Selection
- Reload Dataset
- Information about this Dataset
- Download CSV
- Download JSON
- Edit Aggregation Level
- Remove Dataset

Data Spatialising

(aka creating Shapefiles (or select data with geometry included))

The screenshot displays the QGIS software interface. On the left, the 'Tools' panel is open, showing a list of available items. The 'Spatial Tools' group is selected, and 'Spatialise Aggregated Dataset' is highlighted. The main workspace shows the 'Parameters' panel for this tool, with the description 'Attaches geometries to a dataset' and the dataset 'SA1-G11d Proficiency in Spoken English by LGA Melbourne (sa2_2016/206041122)'. The 'Run Result' panel shows the workflow execution status: 'Starting the workflow ...', 'Running workflow. Time elapsed: 2.03 seconds', and 'Workflow execution is successfully completed ...'. A context menu is open over the 'Data' panel, listing actions for the dataset 'SA1-G11d Proficiency in Spoken Eng by ... Melbourne (sa2_2016/206041122)'. The menu options are: 'Open Attribute Table', 'Rename Dataset', 'Display on Map', 'Information about this Dataset', 'Download CSV', 'Download SHP', 'Download JSON', 'Edit Aggregation Level', and 'Remove Dataset'.

Group	Available Items
Charts	Contiguous Spatial Weight Matrix
Cluster and Hotspot Analysis	Distance Decay Spatial Weight Matrix
Dataset and Table Processing	Distance Spatial Weight Matrix
Indices	Lat Lon to Points Dataset
Spatial Statistical Analysis	Count Points In Polygons
Spatial Tools	Geocoder
Statistical Analysis	Spatialise Aggregated Dataset
Walkability	Point Join

Parameters

Description: Attaches geometries to a dataset ?

Dataset: SA1-G11d Proficiency in Spoken English by LGA Melbourne (sa2_2016/206041122)

Edit and Run Tool

Run Result

Starting the workflow ...
Running workflow. Time elapsed: 2.03 seconds
Workflow execution is successfully completed ...

Data

SA1-G11d Proficiency in Spoken Eng by ...
Melbourne (sa2_2016/206041122)

Output: spatialise-dataset Mar.03 12:55

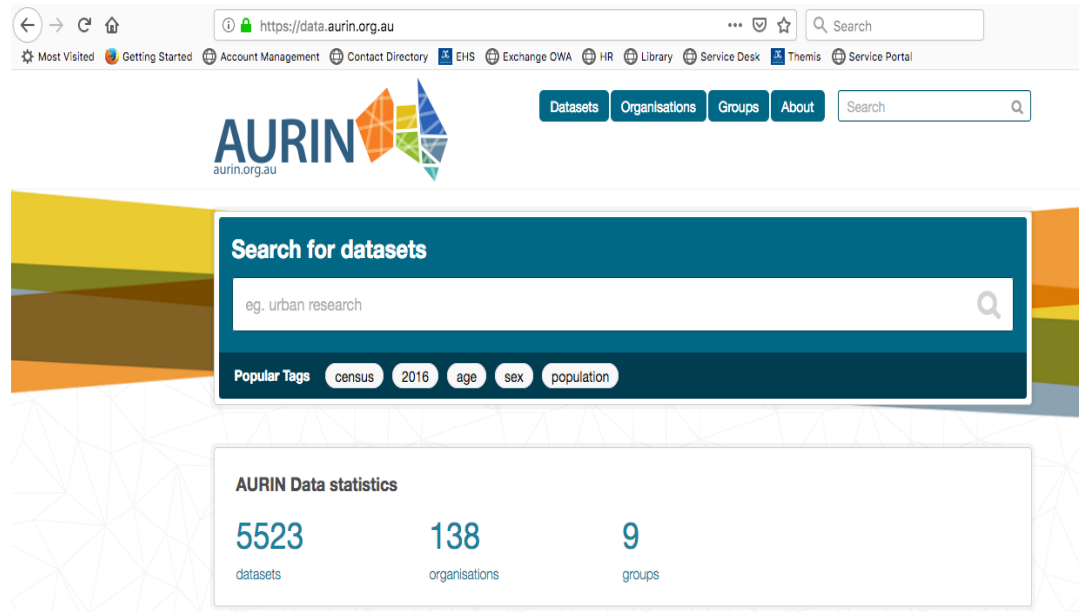
- Open Attribute Table
- Rename Dataset
- Display on Map
- Information about this Dataset
- Download CSV
- Download SHP
- Download JSON
- Edit Aggregation Level
- Remove Dataset

Save Tool as: Spatialise Aggregated Dataset - 1

Other Things

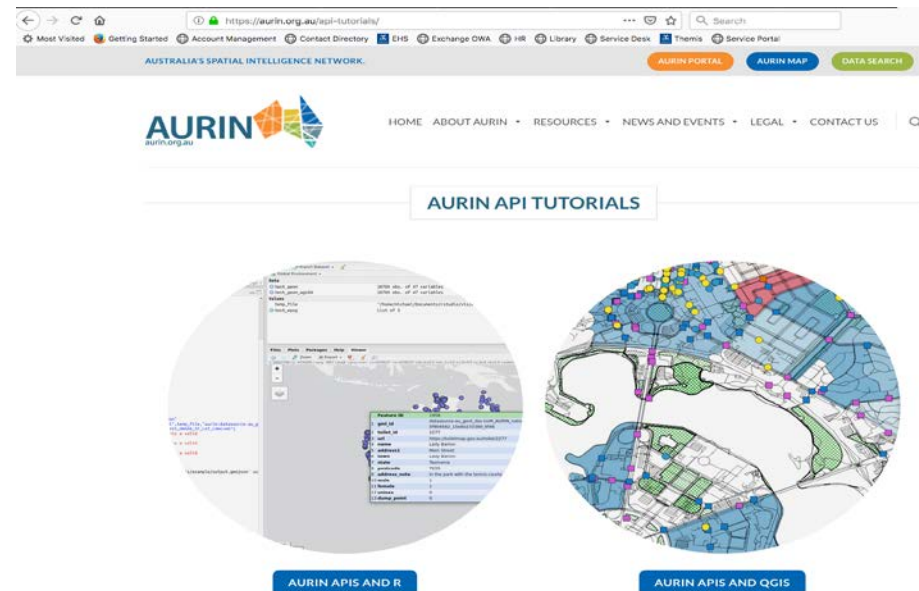
- Data overview

- <https://data.aurin.org.au>



- Programmatic access to data

- <https://aurin.org.au/api-tutorials/>



(Non-assessed) Homework Test Cases

- Which suburb (SLA) of Victoria has the highest percentage of people that get less than 7 hours sleep per night?
- Which school in Sydney recorded the highest levels of air pollution (PM10 microgramme/m³) in 2019?
- Which local government area (LGA) in Victoria had the most cancer cases in 2015?
- Which suburb (SA2) of Australia has the highest percentage of high earners (weekly family income > \$4000) according to the 2016 census?
- How many public toilets were there in Greater Melbourne in 2017? Which SLA had the most toilets?
 - (Hint see Tools::Spatial Tools::Count Points in Polygons)