

Introduction to Spatial Data & GIS

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EDINA, Geoservices Support

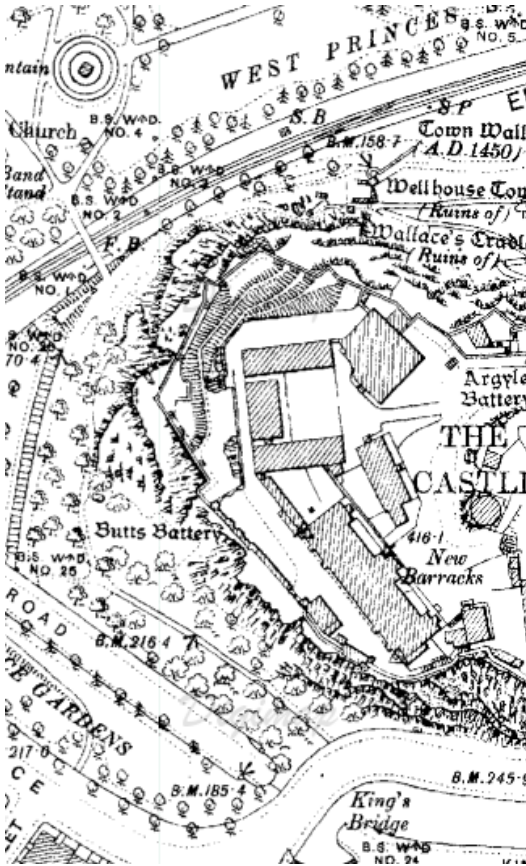


Introduction

- What is Spatial Data?
- What is GIS?
 - What is QGIS?
- Making Spatial Data
- Practical 1
 - Adding Data to QGIS
- Practical 2
 - Making Spatial Data in QGIS



What is Spatial Data?



Helge Pedersen

Summary Notes

Name: Helge Pedersen

Index	Time	Leg Distance	Leg Time	Leg Spe...	Elev...	Leg Course
614	2015-09-28, 17:30:00	2.0 mi	0:10:00	12 mph	6451 ft	262° true
615	2015-09-28, 17:25:00	1.2 mi	0:10:00	7 mph	6460 ft	280° true
616	2015-09-28, 17:15:00	1.3 mi	0:10:00	8 mph	6510 ft	295° true
617	2015-09-28, 17:05:00	6.0 mi	0:10:00	36 mph	6697 ft	345° true
618	2015-09-28, 16:55:00	1.5 mi	0:40:00	2.3 mph	6470 ft	336° true
619	2015-09-28, 16:15:00	7 ft	0:10:00	0.0 mph	6483 ft	90° true
620	2015-09-28, 16:05:00	47.2 mi	9:24:00	5 mph	6467 ft	335° true
621	2015-09-29, 01:29:00	47.1 mi	21:18:00	2.2 mph	6988 ft	156° true
622	2015-09-28, 04:11:00	154 mi	1 day 4:49:00	5 mph	6585 ft	174° true
623	2015-09-26, 23:22:00	157 mi	3 days 5:46:00	2.0 mph	3537 ft	152° true
624	2015-09-23, 17:36:00	59.5 mi	1 day 18:29:00	1.4 mph	2188 ft	153° true
625	2015-09-21, 23:07:00	56.2 mi	1 day 3:56:00	2.0 mph	2087 ft	171° true
626	2015-09-20, 19:11:00	69.1 mi	2 days 0:52:00	1.4 mph	965 ft	162° true
627	2015-09-18, 18:19:00	67.0 mi	1 day 23:07:00	1.4 mph	748 ft	171° true
628	2015-09-16, 19:12:00	12.0 mi	1 day 20:34:00	0.3 mph	558 ft	153° true
629	2015-09-14, 22:38:00	85.6 mi	23:07:00	3.7 mph	636 ft	253° true
630	2015-09-13, 23:31:00	60.7 mi	23:36:00	2.6 mph	2405 ft	288° true
631	2015-09-12, 23:55:00	245 mi	2 days 20:54:00	3.6 mph	561 ft	167° true
632	2015-09-10, 03:01:00	793 mi	17 days 22:40:00	1.8 mph	745 ft	354° true
633	2015-09-28, 01:41:00	191 ft	0:10:00	0.2 mph	6634 ft	219° true
634	2015-09-28, 01:31:00	0.1 mi	0:10:00	0.8 mph	6638 ft	128° true
635	2015-09-28, 01:21:00	5.9 mi	0:10:00	35 mph	6621 ft	149° true
636	2015-09-28, 01:11:00	2.2 mi	0:10:15	13 mph	6731 ft	166° true
637	2015-09-28, 01:00:45	2.0 mi	0:10:00	12 mph	6714 ft	171° true
638	2015-09-28, 00:50:45	7.1 mi	0:10:00	42 mph	6595 ft	262° true
639	2015-09-28, 00:40:45	1.4 mi	0:10:00	8 mph	5182 ft	83° true
640	2015-09-28, 00:30:45	6.8 mi	0:10:00	41 mph	5462 ft	91° true
641	2015-09-28, 00:20:45	7.2 mi	0:10:00	43 mph	6646 ft	109° true
642	2015-09-28, 00:10:45	6.0 mi	0:10:00	36 mph	6663 ft	100° true
643	2015-09-28, 00:00:45	1.1 mi	0:10:00	7 mph	8136 ft	34° true
644	2015-09-27, 23:50:45	4.8 mi	0:10:00	29 mph	7774 ft	88° true

Points	Distance	Area	Elapsed Time	Avg. Speed	Ascent	Descent	Max Elevation	Min Elevation	Avg. Grade
11	966 mi	25471 sq mi	18 days 1:...	2.2 mph	1099 ft	7011 ft	6585 ft	558 ft	-0.1 %

Color: Dark Gray Center on Selected

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Calibri 11 A A Wrap Text Merge & Center

	A	B	C	D	E
1	ID	SCHOOL	STREET	POSTCODE	COUNTRY
2	1	St Thomas Of Aquin's High School	7 Gillespie Street	EH3 9NH	UK
3	2	Boroughmuir High School	Viewforth	EH104LR	UK
4	3	St Mary's Music School	25 Grosvenor Crescent	EH125EL	UK
5	4	George Heriot's School	Lauriston Place	EH3 9HE	UK
6	5	James Gillespie's High School	Lauderdale Street	EH9 1DD	UK
7	6	St Serf's School	5 Wester Coates Gardens	EH125LT	UK
8	7	Tynecastle High School	McLeod Street	EH112NJ	UK
9	8	St George's School for Girls	Garscube Terrace	EH126BG	UK
10	9	Rudolf Steiner School of Edinbur	60 Spylaw Road	EH105BR	UK
11	10	George Watson's College	67-71 Colinton Road	EH105EG	UK
12	11	Edinburgh Academy Senior School	42 Henderson Row	EH3 5BL	UK
13	12	Broughton High School	Carrington Road	EH4 1EG	UK
14	13	Drummond Comm High School	41 Bellevue Place	EH7 4BS	UK
15	14	Fettes College	Carrington Road	EH4 1QX	UK
16	15	Mary Erskine School	Ravelston	EH4 3NT	UK
17	16	Daniel Stewart's and Melville Co	Ravelston	EH4 3NT	UK
18	17	Mannafields Christian School	170 Easter Road	EH7 5QE	UK
19	18	St Margaret's School	East Suffolk Road	EH165PJ	UK
20	19	Leith Academy	20 Academy Park	EH6 8JQ	UK
21	20	Firrhill High School	Firrhill	EH141DP	UK
22	21	Trinity Academy	Craighall Avenue	EH6 4RT	UK
23	22	Craigroyston Comm High School	Pennywell Road	EH4 4QP	UK
24	23	Holy Rood High School	Duddingston Road West	EH153ST	UK
25	24	Merchiston Castle School	294 Colinton Road	EH130PU	UK



What is GIS?

“A geographic information system (or GIS) is a system designed to capture, store, manipulate, analyse, manage, and present spatial or geographic data.” Wikipedia 2017.

“GIS can show many different kinds of data on one map. This enables people to more easily see, analyse, and understand patterns and relationships.” National Geographical Society 2016.

Essential Components: Database for storing data, Tools for capturing and creating data, Tools for analysing data, Tools for graphically representing the data, and Tools for outputting the data.



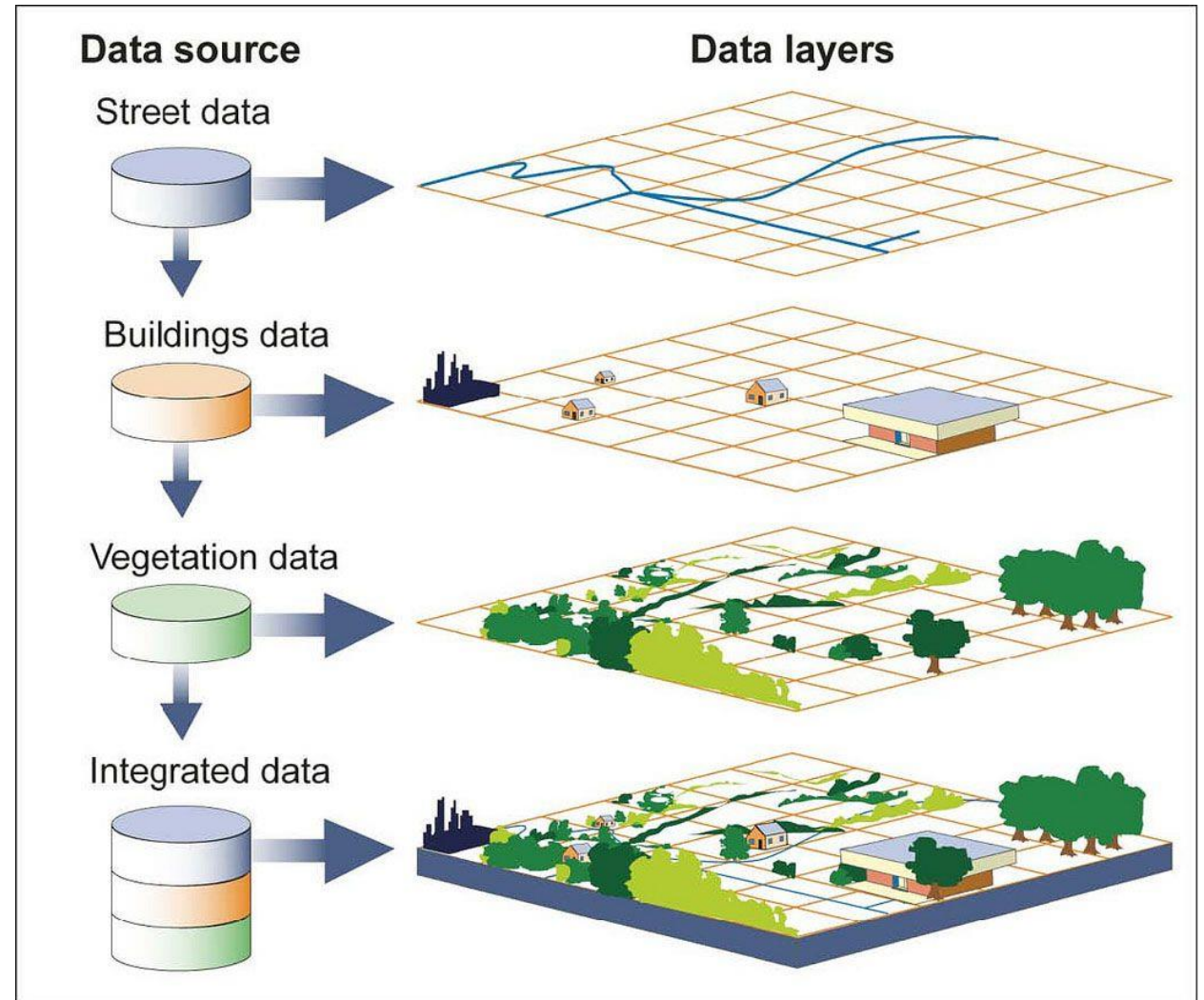
What is QGIS?

- Free OpenSource GIS Software
 - <http://qgis.com/>
- Functionally comparable to commercial GIS.
- Community of developers to core code and added functionality plugins.



Making Spatial Data

- Collecting in the field
- Georeferencing data
- Processing existing data



Practical 1

- Creating a map from existing spatial data.
- Turning spreadsheets into map data, Geocoding.



Practical 2

- Georeferencing a scanned map.
- Capturing data from a base map.
- Selecting features by attribute.
- Selecting features by location.

