

# Contents

Preface	ix
Acknowledgments	xi

## Part 1 Getting to know GIS

Chapter 1	Introducing GIS	1
Chapter 2	Introducing ArcGIS	19

## Part 2 Getting started with maps and data

Chapter 3	Interacting with maps	29
Exercise 3a	Displaying map data	33
Exercise 3b	Navigating a map	49
Exercise 3c	Using basic tools	56
Exercise 3d	Looking at feature attributes	68
Chapter 4	Interacting with data	79
Exercise 4a	Browsing through map data	82
Exercise 4b	Adding data to a map	93
Exercise 4c	Working with map layers	106
Chapter 5	Exploring online resources	121
Exercise 5a	Creating a web map	126
Exercise 5b	Merging online and local layers	138
Exercise 5c	Sharing a map package	148

## Part 3 Displaying and presenting data

Chapter 6	Working with coordinate systems and projections	153
Exercise 6a	Examining coordinate systems	164
Exercise 6b	Projecting data	173
Exercise 6c	Defining a map projection	189
Exercise 6d	Georeferencing a raster	199
Chapter 7	Symbolizing features	213
Exercise 7a	Creating custom symbology	217
Exercise 7b	Symbolizing features by categorical attributes	228
Exercise 7c	Using styles and creating layer files	239
Exercise 7d	Symbolizing rasters	247
Chapter 8	Classifying features	259
Exercise 8a	Classifying features by standard methods	263
Exercise 8b	Mapping density	278
Exercise 8c	Using graduated and chart symbols	286
Chapter 9	Labeling features	299
Exercise 9a	Using dynamic labels	302
Exercise 9b	Setting rules for label placement	308
Exercise 9c	Creating graphic labels	319
Exercise 9d	Converting dynamic labels to annotation	326
Chapter 10	Making maps for presentation	333
Exercise 10a	Creating a layout	336
Exercise 10b	Adding titles and additional text	352
Exercise 10c	Adding standard map elements	361
Exercise 10d	Adding final touches and setting print options	377

## Part 4 Creating and editing data

Chapter 11	Building geodatabases	389
Exercise 11a	Creating a geodatabase	392
Exercise 11b	Creating feature classes	399
Chapter 12	Creating features	411
Exercise 12a	Drawing features	414
Exercise 12b	Using more construction tools	423
Chapter 13	Editing features	435
Exercise 13a	Deleting and modifying features	436
Exercise 13b	Splitting and merging features	449
Exercise 13c	Editing feature attribute values	458
Chapter 14	Geocoding addresses	467
Exercise 14a	Creating an address locator	470
Exercise 14b	Matching addresses	478
Exercise 14c	Rematching addresses	489

## Part 5 Getting information about features

Chapter 15	Querying data	499
Exercise 15a	Selecting and finding features	501
Exercise 15b	Using attribute queries	517
Exercise 15c	Creating reports	528
Chapter 16	Selecting features by location	539
Exercise 16a	Using location queries	540
Exercise 16b	Combining attribute and location queries	550
Chapter 17	Joining and relating data	557
Exercise 17a	Joining data by attribute	563
Exercise 17b	Relating data	578
Exercise 17c	Joining data by location	590

## Part 6 Analyzing geospatial data

Chapter 18	Preparing data for analysis	601
Exercise 18a	Dissolving features	603
Exercise 18b	Clipping layers	616
Exercise 18c	Creating a data subset	624
Exercise 18d	Running tools in a model	631
Chapter 19	Geoprocessing vector data	645
Exercise 19a	Buffering features	648
Exercise 19b	Overlaying data	657
Exercise 19c	Calculating attribute values	670
Exercise 19d	Creating graphs	680
Chapter 20	Using Spatial Analyst	689
Exercise 20a	Creating raster surfaces	693
Exercise 20b	Combining raster surfaces	709
Appendix A	ArcGIS Pro: A first look	723
Appendix B	Data source credits	751
Appendix C	Data license agreement	761
	Glossary	765
	Index	779