

Table of Contents

- Introduction
 - What is GIS?
 - Objectives
 - Concepts
 - What is GIS?
 - What Can a GIS Do?
 - GIS Project Management
 - Project Case Study: A Thorny Issue
 - Types of GIS Projects
 - Planning a GIS Project
 - Example of a GIS Project Proposal
 - Prediction of Thistle Infected Areas in Badlands National Park Using a GIS model
- Chapter 1: Introducing ArcGIS
 - Mastering the Concepts
 - Objectives
 - Concepts
 - ArcGIS Overview
 - Introduction to Raster and Vector Data Models
 - Data Files in ArcGIS
 - Properties of Spatial Data Files
 - Introduction to Metadata
 - Overview of the ArcGIS Interface
 - Object Properties
 - About ArcCatalog
 - About ArcToolbox
 - Chapter Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 2: Working with ArcMap
 - Mastering the Concepts
 - Objectives
 - Concepts
 - Overview of ArcMap Windows and Menus
 - The Help System
 - Data Frames
 - Data Layer Properties
 - Working with Symbols and Styles
 - Map Scale Concepts

- Labeling Concepts
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 3: Coordinate Systems and Map Projections
 - Mastering the Concepts
 - Objectives
 - Concepts
 - About Map Projections and GIS
 - Geographic Coordinate Systems
 - Spheroids and Datums
 - Map Projections
 - A Note on Terminology
 - Common Projection Systems
 - Map Projections in ArcMap
 - Managing Coordinate Systems
 - Projecting Data
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 4: Drawing and Symbolizing Features
 - Mastering the Concepts
 - Objectives
 - Concepts
 - Types of Maps
 - Classifying Numeric Data
 - Using Map Layer Files
 - Editing Symbols and Using Styles
 - Displaying Rasters
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 5: Working with Tables

- Mastering the Concepts
 - Objectives
 - Concepts
 - Overview of Tables in ArcGIS
 - Table Formats
 - Field Types
 - Queries on Tables
 - Joining and Relating Tables
 - Getting Statistics on Tables
 - Summarizing Tables
 - Editing and Calculating Fields
 - Summary
 - Chapter Review Questions
- Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 6: Presenting Data
 - Mastering the Concepts
 - Objectives
 - Concepts
 - Tips for Making Maps
 - Maps and Reports in ArcGIS
 - Working with Map Elements
 - Working with Map Scales
 - Setting Up Scale Bars
 - The Layout Toolbar
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 7: Queries
 - Mastering the Concepts
 - Objectives
 - Concepts
 - What are Queries?
 - Interactive Selection
 - Selecting by Attribute
 - Selecting by Location
 - Choosing the Selection Method
 - Definition Queries

- Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 8: Spatial Joins
 - Mastering the Concepts
 - Objectives
 - Concepts
 - What is a Spatial Join?
 - Types of Spatial Joins
 - Examples of Joins
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 9: Map Overlay
 - Mastering the Concepts
 - Objectives
 - Concepts
 - Map Overlay
 - Examples of Using Map Overlay
 - Buffering
 - Using the Geoprocessing Wizard
 - Coordinate Systems and Map Units
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 10: Geocoding
 - Mastering the Concepts
 - Objectives
 - Concepts
 - What is Geocoding?
 - How Does Geocoding Work?
 - Available Geocoding Styles
 - The Geocoding Process

- Setting up a Geocoding Service
 - The Reference Data
 - Adding XY Coordinates
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 11: Basic Editing in ArcMap
 - Mastering the Concepts
 - Objectives
 - Concepts
 - Editing Overview
 - The Editor Toolbar
 - General Information About Editing
 - Snapping Features
 - Creating Adjacent Polygons
 - Editing Features
 - Editing Attributes
 - Saving Work
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 12: More Editing Techniques
 - Mastering the Concepts
 - Objectives
 - Concepts
 - Using Different Sketch Tools
 - Changing Existing Features
 - Combining Features Together
 - Buffering Features
 - Editing shared Features
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference

- Chapter 13: Working with Geodatabases
 - Mastering the Concepts
 - Objectives
 - Concepts
 - About Geodatabases
 - Creating Geodatabases
 - Creating Feature Datasets
 - Using Default Values
 - Setting Up Domains
 - Split and Merge Policies
 - About Subtypes
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 14: Analyzing Networks
 - Mastering the Concepts
 - Objectives
 - Concepts
 - About Networks
 - Types of Networks
 - Network Analysis
 - The Utility Analysis Toolbar
 - Generic Trace Solvers
 - Utility Trace Solvers
 - Building Networks
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Chapter 15: Raster Analysis
 - Mastering the Concepts
 - Objectives
 - Concepts
 - Benefits and Disadvantages of Raster and Vector Models
 - About Rasters
 - Coordinate Systems and Rasters
 - Raster Analysis
 - Boolean Map Overlay

- Controlling Analysis Options
 - Summary
 - Chapter Review Questions
 - Mastering the Skills
 - Teaching Tutorial
 - Exercises
 - Challenge Problem
 - Skills Reference
- Glossary
- Answers