# Unlock the Power of Mapping: A Beginner's Guide to Creating 2D and 3D Maps and Editing Geospatial Data With QGIS, ArcGIS, and MapInfo

In today's rapidly evolving world, the ability to create and analyze maps is becoming increasingly essential. Maps are used in a wide range of fields, from urban planning and environmental conservation to business intelligence and marketing. If you're new to the world of mapping, this beginner's guide will provide you with the foundation you need to get started.

We'll cover the basics of creating 2D and 3D maps, editing geospatial data, and using some of the most popular GIS software packages, including QGIS, ArcGIS, and MapInfo. Whether you're a student, researcher, or professional, this guide will help you unlock the power of mapping.
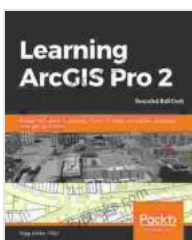
Learning ArcGIS Pro 2: A beginner's guide to creating 2D and 3D maps and editing geospatial data with ArcGIS Pro, 2nd Edition by Matt Chandler

★★★★☆ 4.6 out of 5

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Chapter 1: Getting Started With GIS

In this chapter, we'll introduce you to the basics of GIS and some of the most common GIS software packages. We'll also cover the different types of spatial data and how to import and export data from different sources.

What is GIS?

GIS stands for geographic information system. It is a computer system that allows you to store, manage, and analyze spatial data. Spatial data is data that has a geographic reference, such as a latitude and longitude.

GIS Software Packages

There are many different GIS software packages available, each with its own strengths and weaknesses. Some of the most popular GIS software packages include:

- QGIS

- ArcGIS

- MapInfo

Types of Spatial Data

There are two main types of spatial data: vector data and raster data.

- **Vector data** represents geographic features as points, lines, and polygons. Vector data is often used to represent roads, rivers, and other linear features.

- **Raster data** represents geographic features as a grid of cells. Raster data is often used to represent elevation, land use, and other

continuous data.

Importing and Exporting Data

GIS software packages can import and export data from a variety of sources. This includes data from GPS devices, aerial photography, and other GIS software packages.

Chapter 2: Creating 2D Maps

In this chapter, we'll show you how to create 2D maps using QGIS, ArcGIS, and MapInfo. We'll cover the basics of map layout, symbolization, and labeling.

Map Layout

The map layout is the overall design of your map. It includes the map frame, legend, title, and other elements.

Symbolization

Symbolization is the process of assigning symbols to geographic features. Symbols can represent different attributes of features, such as their type, size, or value.

Labeling

Labeling is the process of adding text to geographic features. Labels can identify features, provide additional information, or both.

Chapter 3: Creating 3D Maps

In this chapter, we'll show you how to create 3D maps using QGIS, ArcGIS, and MapInfo. We'll cover the basics of 3D visualization, including

perspective, lighting, and shadows.

3D Visualization

3D visualization allows you to view geographic data in a three-dimensional space. This can be helpful for understanding the relationships between different features and for making informed decisions.

Perspective

Perspective is the point of view from which you view your map. You can choose to view your map from a top-down perspective, a side perspective, or an oblique perspective.

Lighting

Lighting can be used to create realistic shadows and highlights on your map. This can help to improve the overall appearance of your map and make it easier to interpret.

Shadows

Shadows can be used to add depth to your map. Shadows can be cast by buildings, trees, and other objects.

Chapter 4: Editing Geospatial Data

In this chapter, we'll show you how to edit geospatial data using QGIS, ArcGIS, and MapInfo. We'll cover the basics of data editing, including adding, deleting, and modifying features.

Data Editing

Data editing is the process of changing the attributes or geometry of geographic features. Data editing can be used to correct errors, update data, or create new features.

Adding Features

Adding features is the process of creating new geographic features. Features can be added to a map using a variety of tools, including the point tool, the line tool, and the polygon tool.

Deleting Features

Deleting features is the process of removing existing geographic features from a map. Features can be deleted using the delete tool.

Modifying Features

Modifying features is the process of changing the attributes or geometry of existing geographic features. Features can be modified using a variety of tools, including the select tool, the edit tool, and the move tool.

Chapter 5: Using QGIS, ArcGIS, and MapInfo

In this chapter, we'll provide a brief overview of QGIS, ArcGIS, and MapInfo. We'll cover the strengths and weaknesses
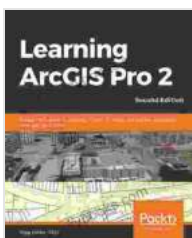
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