FEATURE LAYER (ARCGIS)

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ArcGIS.

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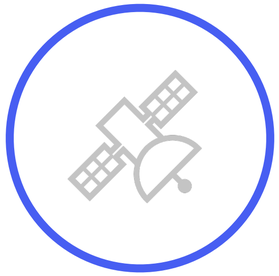
INTRODUCTION

An ArcGIS feature layer is a web service that allows users to share and access geographic data and map features over the internet.

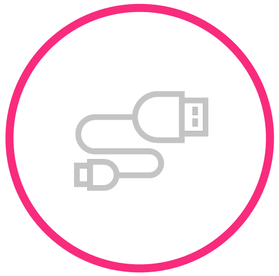
PURPOSE

To provide a centralized location for storing, managing, and displaying spatial data, allowing users to gain insights.



SIGNIFICANCE

helping users to make better decisions and gain insights into complex spatial relationships.



INTRODUCTION

Means of visualizing, analyzing, and sharing geographic data.

BACKGROUND

a detailed overview of the history of ArcGIS Feature Layers.

1999

ArcGIS was released in 1999, and it included basic support for feature layers

2008

In 2008, Esri introduced ArcGIS Server. Allowed users to publish and share their layers with others.

2010

In 2010, Esri introduced ArcGIS Online. Allowed users to create and share interactive maps and applications with others.

FEATURES

Features such as querying, filtering, symbology, labeling, pop-ups, and editing, making it a powerful tool for spatial data analysis.

MAP CREATION AND CUSTOMISATION

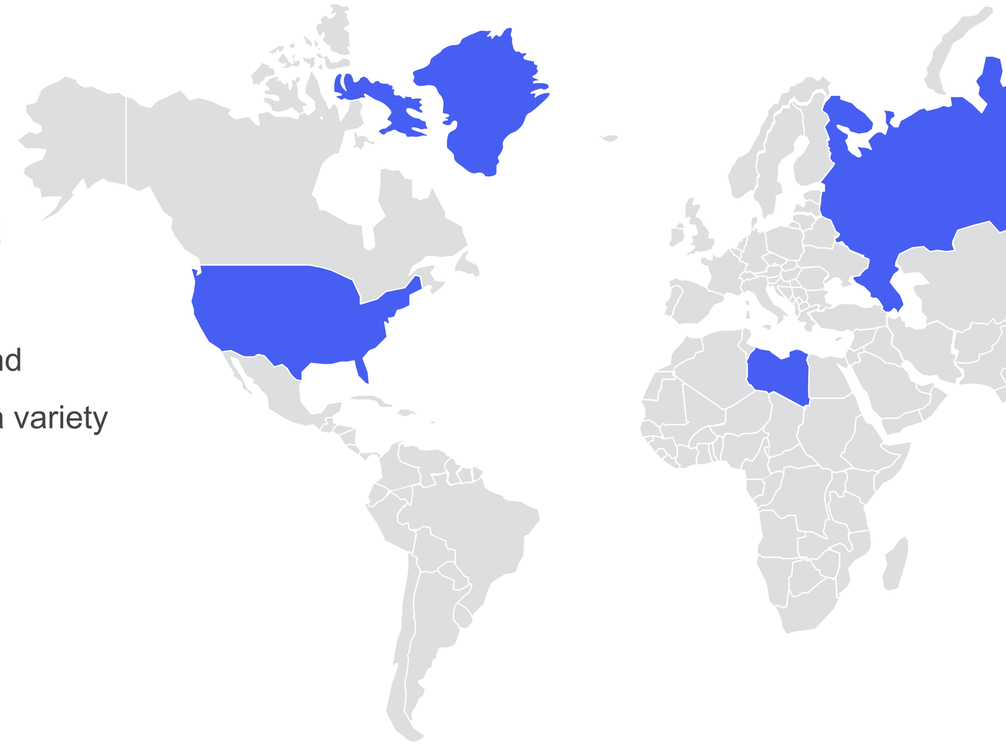
tools and techniques for creating and customizing maps to suit specific needs.

COLLABORATION AND SHARING

users to share and collaborate on their maps and data with others in real-time

SPATIAL ANALYSIS TOOLS

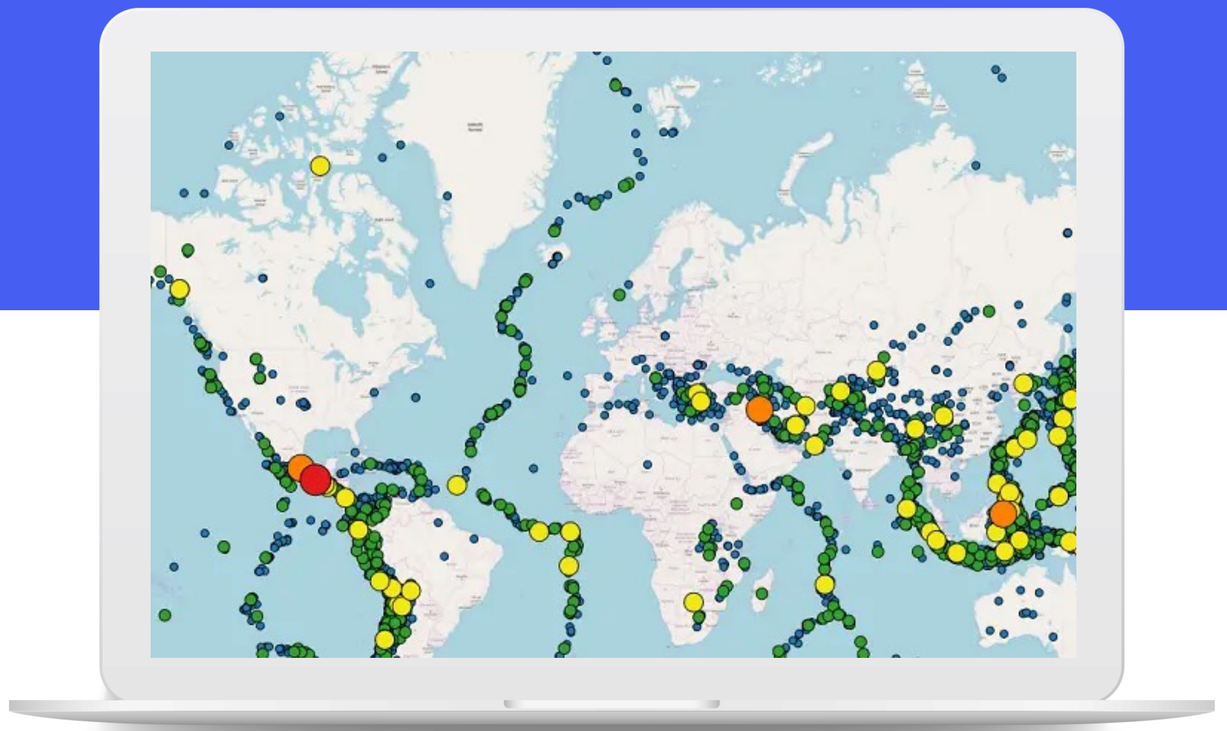
allowing users to analyze and manipulate spatial data for a variety of applications.



USABILITY

ADVANTAGES

- Centralized Data Management
- Powerful Analysis Tools
- Customizable Symbology and Labelling



LIMITATIONS

- slow performance,
- cost of licensing, and
- training and expertise to utilize the tool's.

EXAMPLES

- Urban planning,
- Natural resource management,
- Emergency management

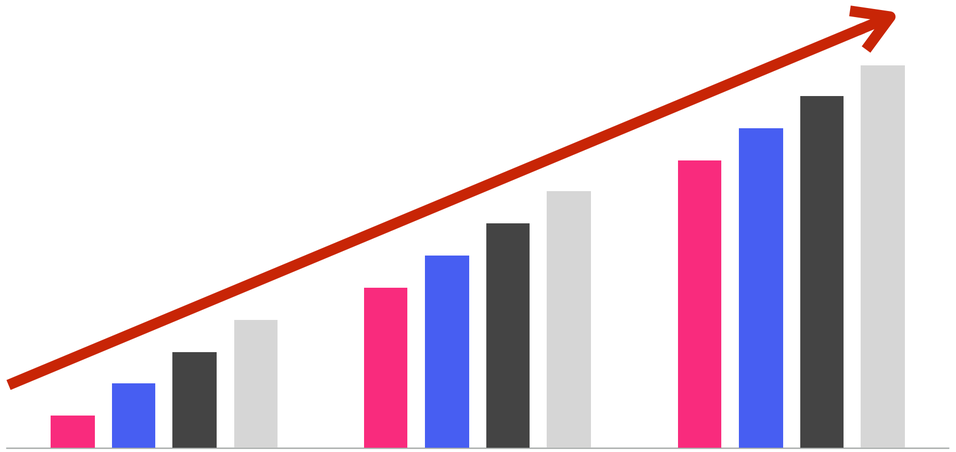
CHALLENGES

- Data Quality
- Data Security
- Integration with other softwares

IMPROVEMENTS

SIMPLIFYING USER INTERFACE

DOCUMENTATION AND TRAINING



DATA FILTERING AND QUERYING

MACHINE LEARNING ALGORITHMS

PERFORMANCE AND SCALABILITY

SIMPLIFYING USER-INTERFACE

to enhance usability and reduce the learning curve for new users.

CLEAR AND CONCISE LANGUAGE

Avoid technical jargon and use simple terms

STREAMLINE WORKFLOWS

Reducing the number of steps required to complete common tasks.

INTUITIVE DESIGN

create an interface that is easy to navigate and understand

CUSTOMIZE INTERFACE

ability to hide or display different features based on user preferences

BETTER DOCUMENTATION AND TRAINING

comprehensive user manuals, video tutorials, and help guides to assist users

CLEAR AND CONCISE DOCUMENTATION

simple language and avoid technical jargon to make it easy for users to understand.

STEP-BY-STEP TUTORIALS

help users learn how to use ArcGIS Feature Layers more quickly and efficiently.

VIDEO TUTORIALS

Tutorials can be especially helpful for users who prefer visual learning.

ON-DEMAND TRAINING

such as webinars and online courses, that users can access at their own pace

ENHANCING DATA FILTERING AND QUERYING

refining and extracting specific subsets of data from ArcGIS Feature Layers based on various criteria.

ADVANCED FILTERING

filtering by date ranges, multiple attribute values, or custom expressions.

SPATIAL QUERYING

users to filter data based on its spatial relationship to other data. Filtering by distance, proximity, or spatial join.

AUTO-SUGGEST AND AUTO-COMPLETE

quickly find and select the data users need, and reduce the likelihood of errors in the query syntax.

QUERY HISTORY

view and repeat past queries

INCORPORATING MACHINE LEARNING ALGORITHMS

help users automate and enhance spatial data analysis

CLASSIFICATION

you could classify land cover based on satellite imagery data.

REGRESSION

create predictive models based on spatial data. Predict the likelihood of a natural disaster based on historical data.

CLUSTERING

To group spatial data into clusters based on similarity.

NATURAL LANGUAGE PROCESSING

extract insights from unstructured data, such as text or speech data.

IMPROVING PERFORMANCE AND SCALABILITY

help users automate and enhance spatial data analysis

CACHING

reduce the time it takes to load and display data

LOAD BALANCING

distribute the load across multiple servers., especially for large datasets or high- traffic applications.

IMPLEMENT COMPRESSION

reduce the size of data being transferred over the network.

PARALLEL PROCESSING

distribute computational tasks across multiple processors or cores

CONCLUSION

Key Findings: Definition, history, key features, usability, limitations, and potential for improvement, with examples of its use and impact on decision-making.

01 FUTURE FOR RESEARCH AND DEVELOPMENT

- Integration with Emerging Technologies
- Cloud-based Solutions
- Real-Time Analytics
- Collaboration and Data sharing

02 IMPORTANCE IN SPATIAL DATA ANALYSIS AND DECISION MAKING

The ability to visualize spatial data in real-time and query and filter data based on specific criteria allows for more informed decision-making.

REFERENCES

- Esri. (n.d.). ArcGIS Feature Layers. Retrieved from https://www.esri.com/en-us/arcgis/products/arcgis-online/overview/feature-layers
- Kumar, A., & Rai, S. (2017). A review on ArcGIS online: A cloud-based GIS platform. Journal of Civil Engineering and Environmental Technology, 4(2), 142-146.
- Schuurman, N. (2018). Spatial data infrastructures, GIS, and health: Future directions. International Journal of Health Geographics, 17(1), 1-7.
- Shrestha, R. K. (2019). GIS-based flood inundation mapping using ArcGIS. Journal of Water and Climate Change, 10(3), 689-700.
- Taner, M. F., & Ozkul, M. A. (2019). Evaluating the spatial variability of soil fertility parameters using GIS and kriging methods. Communications in Soil Science and Plant Analysis, 50(1), 89-100.
- Wainwright, H. M., Ayris, P. M., & Barlow, J. (2018). Implementing geospatial solutions for effective conservation of endangered species: A case study of the San Francisco garter snake. Conservation Science and Practice, 1(4), e52.

THANK YOU!