ITCS495 Special Topics in Databases and Intelligent Systems

US NATURAL DISASTER DECLARATIONS (1953 - 2023)

Present
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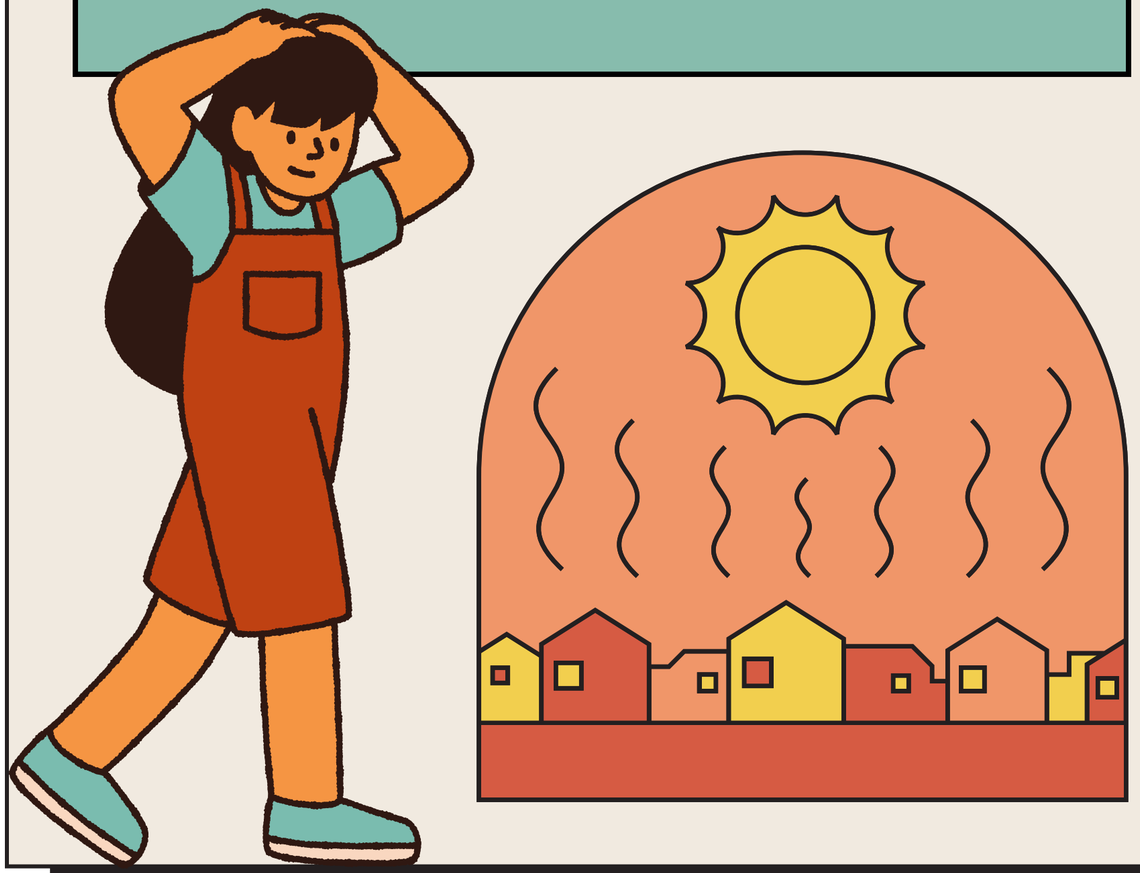
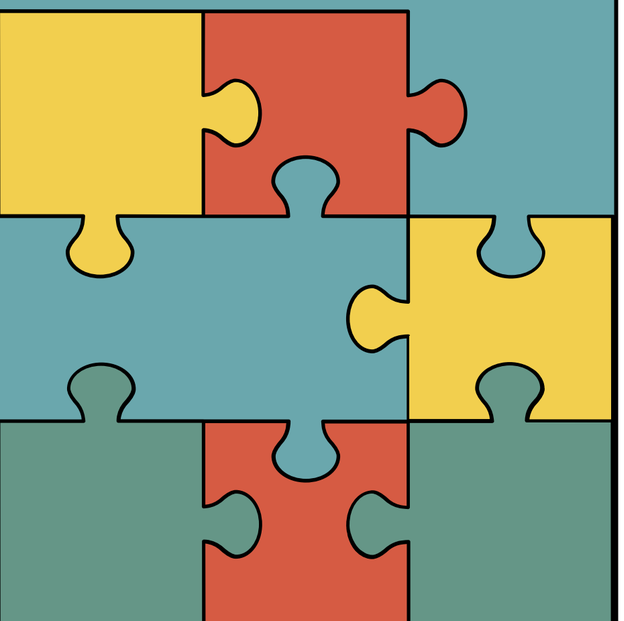
AGENDA



- Business Domain
- Important Factors Chossing Domain
- Benefits of Analyzing this Domain
- Objectives
- Data Description



Business Domain

The U.S. Natural Disaster Declarations dataset relates to disaster management and risk mitigation, focusing on analyzing, preparing for, responding to, and recovering from natural disasters. The aim is to minimize the impact on lives, infrastructure, and the economy while enhancing community resilience.

Important Factors for Choosing this Domain

The increasing frequency of natural disasters, their economic and social impacts, regional differences, and the need for government and business preparedness make disaster management essential for minimizing damage and improving recovery.

Important Factors for Choosing the Domains

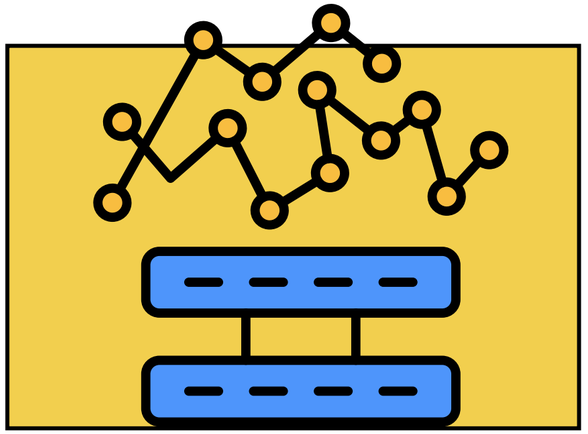
These are the Importnat Factors for Choosing the Domains

Frequency of Natural Disasters

Rising natural disasters from climate change make disaster management urgent

Economic and Social Impact

Predicting or mitigating natural disasters saves lives, cuts costs, and reduces economic disruptions



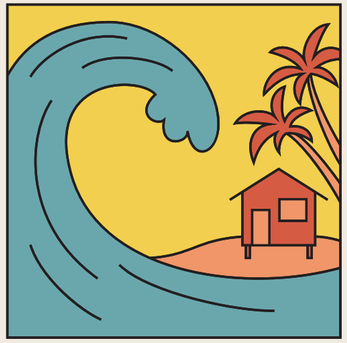
Geographical Variability

Location-specific data is key to tailored disaster response, as regions face different types of disasters

Government and Business Preparedness

Studying past disasters helps governments and businesses improve preparedness and speed up recovery

Benefits of Analyzing Domains



PREDICTIVE ANALYSIS & IMPROVING RISK MANAGEMENT	RESOURCE ALLOCATION & INSURANCE AND FINANCIAL PLANNING	POLICY AND STRATEGY DEVELOPMENT & COMMUNITY AWARENESS AND PREPAREDNESS
Predicting disasters aids preparation, while data-driven risk management protects businesses and infrastructure	Disaster data guides resource allocation and financial planning, helping fund relief efforts and set insurance risks	Disaster data informs policies, strengthens infrastructure, and boosts community awareness for better preparedness

Target User

Federal Emergency Management Agency (FEMA) uses disaster data to enhance response and preparedness strategies

FEMA

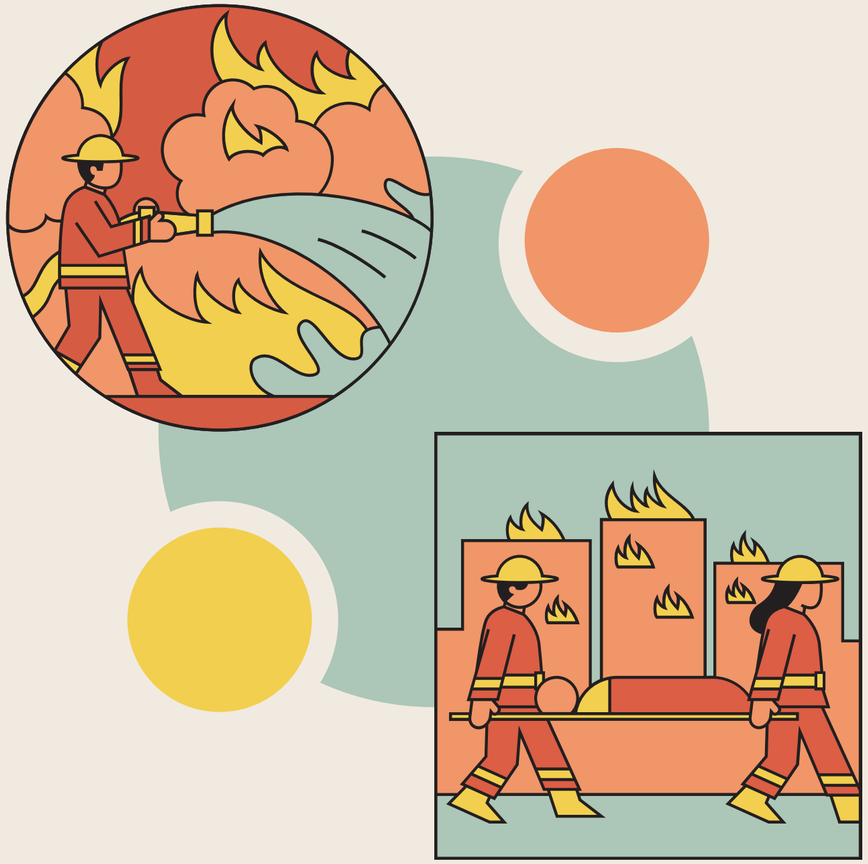
Characteristics

FEMA uses disaster data to prioritize resources and manage recovery, enhancing support for affected communities

Pain Points

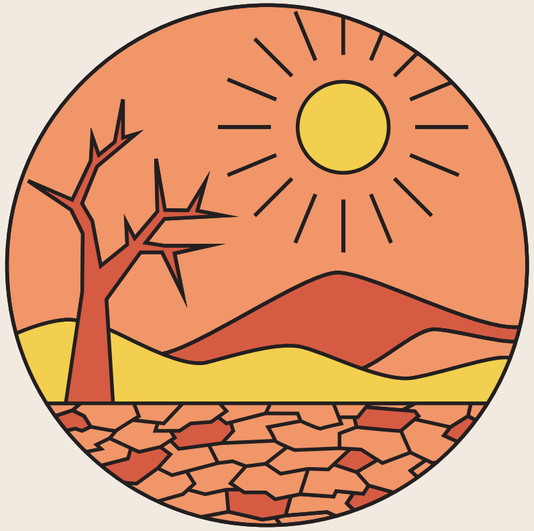
FEMA encounters challenges specifically related to delays in both disaster response and recovery efforts.

OBJECTIVES



- To develop predictive insights that help FEMA anticipate future disasters and proactively prepare

- To enhance FEMA’s capacity to predict, mitigate, and assist people from the impact of future disasters

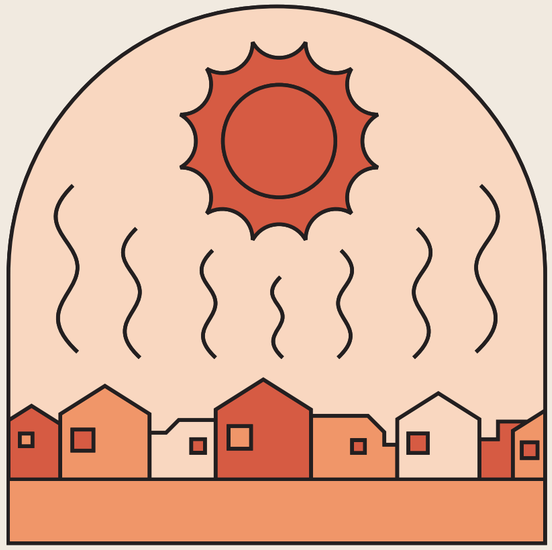


OBJECTIVES

01 What times of year are certain disasters most likely to occur?

02 Which states are most at risk for certain types of disasters?

03 Which assistance programs are most likely to be needed for future disasters?



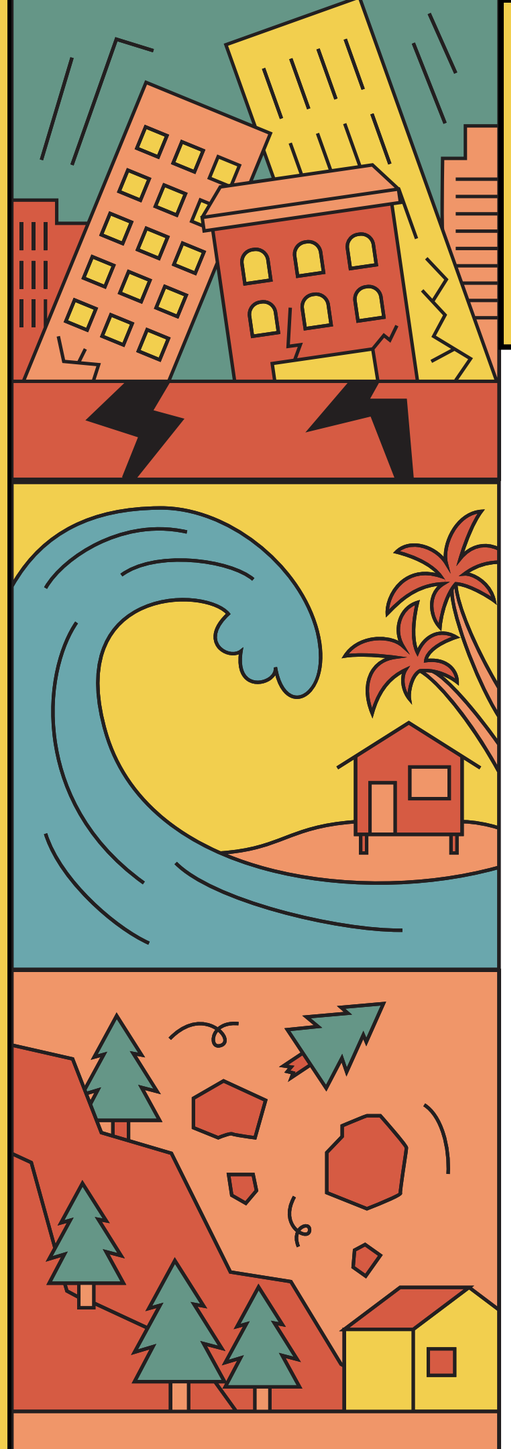
OBJECTIVES

04 What types of disaster incidents receive the most funding amount from FEMA?

05 What category of emergency management receives the most funding amount from FEMA?

06 Which states are the slowest to receive funding from FEMA?

DATA DESCRIPTION



US Natural Disaster Declarations (1953 - 2023)

This dataset covers U.S. disasters (1953-2023) from FEMA, detailing county-level data, disaster types, timing, and aid programs

Column:

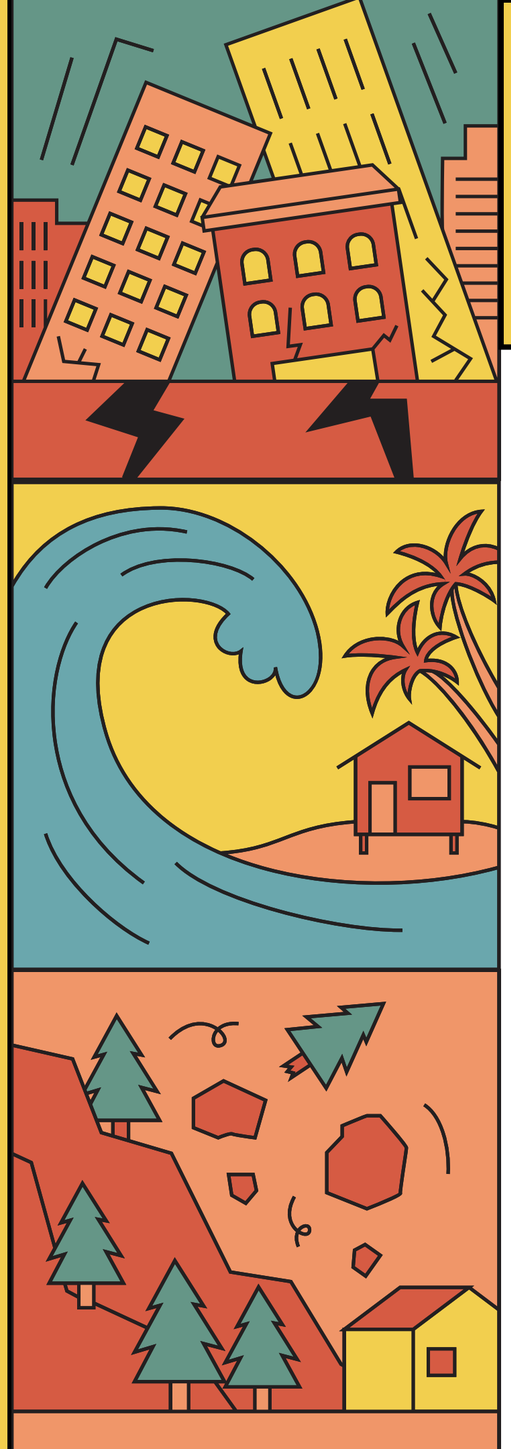
- fema_declaration_string
- disaster_number
- State
- declaration_type
- declaration_date
- fy_declared
- incident_type
- declaration_title
- ih_program_declared
- ia_program_declared
- pa_program_declared
- hm_program_declared
- incident_begin_date

Column:

- incident_end_date
- disaster_closeout_date
- fips
- place_code
- designated_area
- declaration_request_number
- hash
- last_refresh
- id
- Last_ia_filing_date

Link: https://www.kaggle.com/datasets/headsortails/us-natural- disaster-declarations?select=us_disaster_declarations.csv

DATA DESCRIPTION



Public Assistance Funded Projects Details

This dataset contains the financial obligations details of the grant of FEMA in Public Assistance(PA) projects.

Column:

- disasterNumber
- declarationDate
- incidentType
- pwNumber
- applicationTitle
- applicantId
- damageCategoryCode
- projectSize
- county
- countyCode

Column:

- state
- stateCode
- stateNumberCode
- projectAmount
- federalShareObligated
- totalObligated
- obligatedDate
- dcc
- damageCategory
- lastRefresh
- hash
- id

Link: https://www.kaggle.com/datasets/headsortails/us-natural- disaster-declarations?select=us_disaster_declarations.csv