Project Title: **Summiting Risks: Analyzing fatalities in the world's eight-thousanders.**

Introduction:

Climbing the world's eight-thousanders, peaks over 8,000 meters, epitomizes human ambition in extreme landscapes (Cronin, 1991). However, the number of fatalities caused by risks during expeditions has drastically increased in recent years (Redaktion, 2023) (Reuters, 2023). This project examines fatalities among climbers attempting to conquer eight-thousanders. The aim is to benefit climbers, expedition organizers, policymakers, and the broader outdoor recreation community by uncovering these insights.

Motivation:

I am an avid traveller and have done my share of mountain climbing in my native country. I aim to climb the higher ranges eventually, but there are numerous risks in such pursuits. Thus, my motivation stems from becoming self-aware and creating actionable insights for fellow adventurers about these fatality patterns and guiding expedition planning for a safe and secure experience.

Questions:

1. What is the pattern of fatalities on the world's highest mountains in the last five years (geographic, nationality, time frame patterns) and what risks are associated with conquering them?
2. In which climatic conditions do these fatalities predominantly occur?

Data Source:

Dataset/Link	Timeframe	Data Dimension's	Data Description
Mountain Climbing Accidents Dataset	1985-2023	Tabular data in .csv (1053 rows x 5 columns)	Data about climbers who lost their lives while climbing the eight-thousanders. It includes a timestamp attribute Date and other categorical attributes like Name, Nationality, Cause of death and Mountain ranges.
List of Mountains in the World Dataset	Updated in 2023	Tabular data in .csv (1621 rows x 5 columns)	Captures categorical data about the mountain names and the countries that they are in along with ordinal data about the height of the mountains in meters and feet. This dataset will help narrow down the location of the mountain and its heights.
Climate Data	Updated daily	A tabular data with 226 rows x 72 columns and data	This table includes categorical columns of countries and yearly temperatures (ordinal) from 1961-2023. This helps extract country level climate conditions.
City level temperatures	Updated in 2023	A webpage with city specific climate	This webpage has monthly temperature records for specific cities identified as key locations for eight-thousanders mentioned in Q1. First, we will filter down the page to a specific city based on our ArcGIS* results and then use web scraping to extract monthly temperature, snowfall, and precipitation data.

*API (ArcGIS) be utilised to extract the spatial data (latitude and longitude of the mountain ranges).

The first two datasets and the API (ArcGIS) will answer the first question and all datasets will be used to determine average climatic conditions for specific mountain locations.

Reference:

Cronin, C. (1991). Sensation seeking among mountain climbers. *Personality and Individual Differences*, *12*(6), 653–654. https://doi.org/10.1016/0191-8869(91)90264-c

Redaktion. (2023, December 16). *Deadliest season on Everest*. Lacrux Klettermagazin. https://www.lacrux.com/en/alpinism/deadliest-season-on-everest/

Reuters. (2023, October 8). Two die in avalanches on Shishapangma mountain in Tibet. *The Guardian*. https://www.theguardian.com/world/2023/oct/08/two-die-in-avalanches-on-shishapangma-mountain-in-tibet