

A silhouette of a rock climber is positioned on the left side of the frame, clinging to a dark, craggy rock face. The climber is wearing a helmet and a harness, with a rope visible. The background is a vibrant sunset or sunrise scene over a body of water, with mountains in the distance. The sky is filled with orange, yellow, and pink clouds, and the sun is low on the horizon, creating a strong glow. The water reflects the colors of the sky. The overall mood is adventurous and serene.

# RockRoutes

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# Goal & Motivation

## Original Plan:

Provide a clear visualization of the routes to climb. Users can turn on and off the level of difficulty (grade) they want to see, what kind of climbing they want to do (rock or boulder), and the type they can choose from (trad, sport, alpine).

## Why:

Mountain Project, rock climbing website, has a lot of routes and it takes a lot of time to sort. Reason why we want to create something that is more specific and cleaner to look at - especially for beginners.

## Who:

Beginner rock climbers looking to climb in the state of Colorado.

## Problem Getting Fixed:

Mountain Project is hard to navigate and it does not show a clear and clean looking map that is easy to follow.

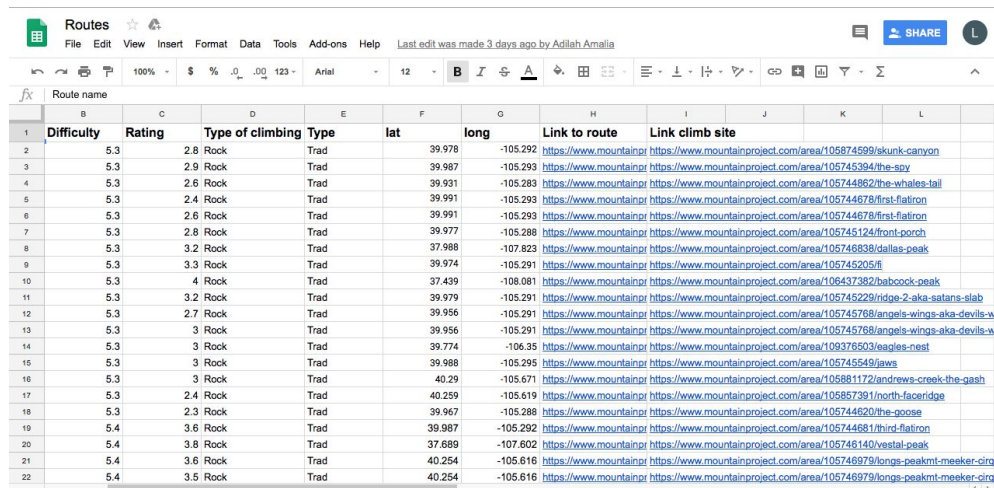
# Data Collection

Where Is the data from?

Mountain Project - <https://www.mountainproject.com/>

How was it collected?

Each person in the group was assigned a specific difficulty level to get the data from.

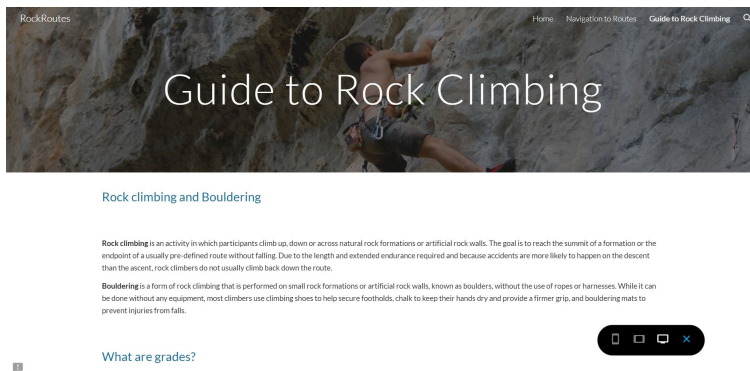
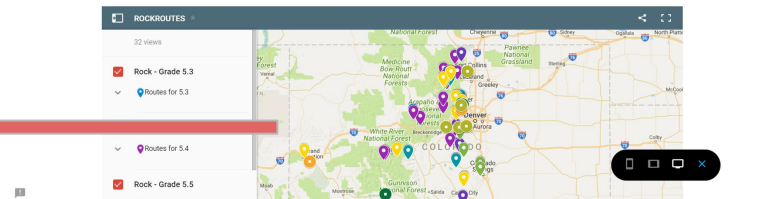
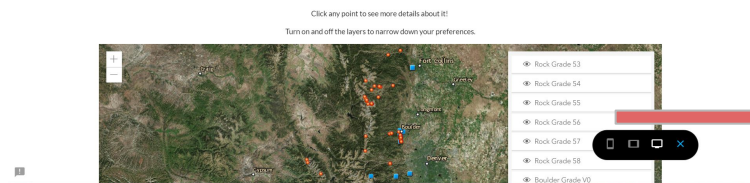
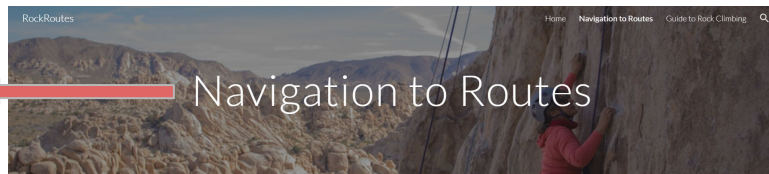


	B	C	D	E	F	G	H	I	J	K	L
	Difficulty	Rating	Type of climbing	Type	lat	long	Link to route	Link climb site			
1											
2	5.3	2.8	Rock	Trad	39.978	-105.292	<a href="https://www.mountainproject.com/area/105874599/skunk-canyon">https://www.mountainproject.com/area/105874599/skunk-canyon</a>				
3	5.3	2.9	Rock	Trad	39.987	-105.293	<a href="https://www.mountainproject.com/area/105745394/the-spy">https://www.mountainproject.com/area/105745394/the-spy</a>				
4	5.3	2.6	Rock	Trad	39.931	-105.283	<a href="https://www.mountainproject.com/area/105744862/the-whales-tail">https://www.mountainproject.com/area/105744862/the-whales-tail</a>				
5	5.3	2.4	Rock	Trad	39.991	-105.293	<a href="https://www.mountainproject.com/area/105744678/first-flatiron">https://www.mountainproject.com/area/105744678/first-flatiron</a>				
6	5.3	2.6	Rock	Trad	39.991	-105.293	<a href="https://www.mountainproject.com/area/105744678/first-flatiron">https://www.mountainproject.com/area/105744678/first-flatiron</a>				
7	5.3	2.8	Rock	Trad	39.977	-105.288	<a href="https://www.mountainproject.com/area/105745124/front-porch">https://www.mountainproject.com/area/105745124/front-porch</a>				
8	5.3	3.2	Rock	Trad	37.988	-107.823	<a href="https://www.mountainproject.com/area/105746838/dallas-peak">https://www.mountainproject.com/area/105746838/dallas-peak</a>				
9	5.3	3.3	Rock	Trad	39.974	-105.291	<a href="https://www.mountainproject.com/area/105745205/fi">https://www.mountainproject.com/area/105745205/fi</a>				
10	5.3	4	Rock	Trad	37.439	-108.081	<a href="https://www.mountainproject.com/area/106437382/babcock-peak">https://www.mountainproject.com/area/106437382/babcock-peak</a>				
11	5.3	3.2	Rock	Trad	39.979	-105.291	<a href="https://www.mountainproject.com/area/105745229/ridge-2-aka-satans-slab">https://www.mountainproject.com/area/105745229/ridge-2-aka-satans-slab</a>				
12	5.3	2.7	Rock	Trad	39.956	-105.291	<a href="https://www.mountainproject.com/area/105745768/angels-wings-aka-devils-w">https://www.mountainproject.com/area/105745768/angels-wings-aka-devils-w</a>				
13	5.3	3	Rock	Trad	39.956	-105.291	<a href="https://www.mountainproject.com/area/105745768/angels-wings-aka-devils-w">https://www.mountainproject.com/area/105745768/angels-wings-aka-devils-w</a>				
14	5.3	3	Rock	Trad	39.774	-106.35	<a href="https://www.mountainproject.com/area/109376503/eagles-nest">https://www.mountainproject.com/area/109376503/eagles-nest</a>				
15	5.3	3	Rock	Trad	39.988	-105.295	<a href="https://www.mountainproject.com/area/105745549/jaws">https://www.mountainproject.com/area/105745549/jaws</a>				
16	5.3	3	Rock	Trad	40.29	-105.671	<a href="https://www.mountainproject.com/area/105881172/andrews-creek-the-gash">https://www.mountainproject.com/area/105881172/andrews-creek-the-gash</a>				
17	5.3	2.4	Rock	Trad	40.259	-105.619	<a href="https://www.mountainproject.com/area/105857391/north-face/ridge">https://www.mountainproject.com/area/105857391/north-face/ridge</a>				
18	5.3	2.3	Rock	Trad	39.967	-105.288	<a href="https://www.mountainproject.com/area/105744620/the-posee">https://www.mountainproject.com/area/105744620/the-posee</a>				
19	5.4	3.6	Rock	Trad	39.987	-105.292	<a href="https://www.mountainproject.com/area/105744681/third-flatiron">https://www.mountainproject.com/area/105744681/third-flatiron</a>				
20	5.4	3.8	Rock	Trad	37.899	-107.602	<a href="https://www.mountainproject.com/area/105745140/vestral-peak">https://www.mountainproject.com/area/105745140/vestral-peak</a>				
21	5.4	3.6	Rock	Trad	40.254	-105.616	<a href="https://www.mountainproject.com/area/105746979/longs-peakmt-meeker-city">https://www.mountainproject.com/area/105746979/longs-peakmt-meeker-city</a>				
22	5.4	3.5	Rock	Trad	40.254	-105.616	<a href="https://www.mountainproject.com/area/105746979/longs-peakmt-meeker-city">https://www.mountainproject.com/area/105746979/longs-peakmt-meeker-city</a>				

133 total routes collected from  
9 different difficulty levels

# Website Layout

## Navigation Bar Between Pages





# Creating Map

## Step 1:

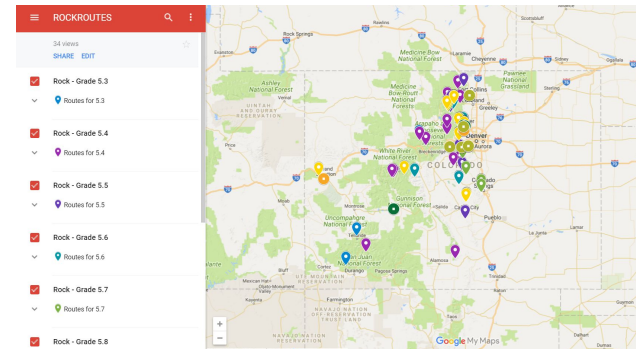
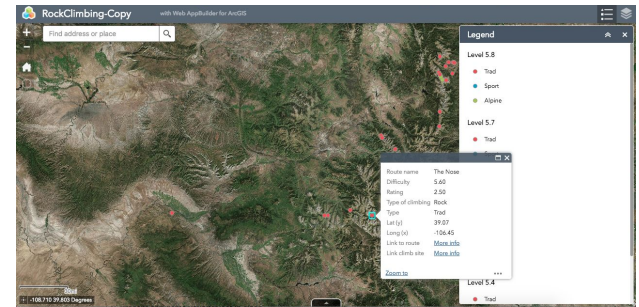
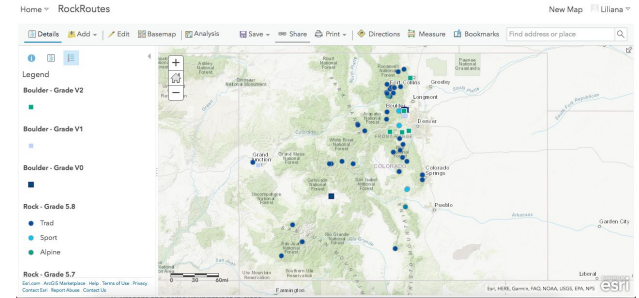
Shapefiles were created with the spreadsheet of the data that was collected from the Mountain Project website. Once that was done, the shapefiles were uploaded to ArcGIS online as hosted feature layers.

## Step 2:

Code was written to call on the hosted layers on ArcGIS online and symbology was assigned for the different grades of climbing being done on each point.

## Step 3:

The map was embedded onto the website through HTML.



# Code

## Description:

JavaScript and HTML were used to write the code behind the map.

Mainly used code that linked the shapefiles to populate a map that was embedded in our website. Different templates of code were used such as popup and layerlist.

We referenced a lot of lab from week 11 of class, as this lab was really helpful in showing us how to link the shapefiles we created to the interactive map on our website.

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <meta name="viewport" content="initial-scale=1, maximum-scale=1, user-scalable=no">
6 <title>Rock Routes in Colorado</title>
7 <style>
8   html, body, #viewDiv {
9     padding: 0;
10    margin: 0;
11    height: 100%;
12    width: 100%;
13  }
14 </style>

// Boulder Grade V2
var featureLayer9 = new FeatureLayer({
  url: "https://services1.arcgis.com/qr14biwnHA6Vis6l/arcgi

<script>
require([
  "esri/Map",
  "esri/views/MapView",
  "esri/layers/FeatureLayer",
  "esri/widgets/LayerList",
  "dojo/domReady!"
], function(Map, MapView, FeatureLayer, LayerList){
  var map = new Map({
    basemap: "hybrid"
  });

//start of pop up part
popupTemplate: {
  title: "{Route_name}",
  actions: [{
    id: "find"
  }],
  content: [{
    type: "fields",
    fieldInfos: [{
      fieldName: "Route_name",
        label: "Route Name"
    }], {
      fieldName: "Difficulty",
        label: "Grade"
    }], {
      fieldName: "Rating"
    }], {
      fieldName: "Type_of_cl",
        label: "Type of climbing"
    }
  ]
}
```

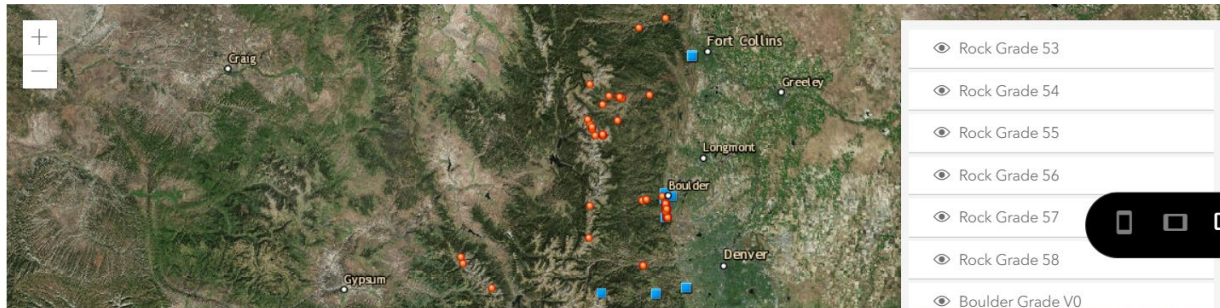
Boulder Grade V2 (Features: 7, Selected: 0)						
Route_name	Difficulty	Rating	Type_of_cl	Type	Lat_y_	Long_x_
The Ladder	V2	3.60	Boulder	Boulder	39.63	-105.62
Dihedral Problem	V2	3.00	Boulder	Boulder	39.63	-105.34
Breashears' Crack	V2	3.00	Boulder	Boulder	39.65	-105.19
Beached Whale	V2	2.70	Boulder	Boulder	40.57	-105.16
My Two Cent	V2	2.80	Boulder	Boulder	40.57	-105.16

<https://github.tamu.edu/GEOG478Project/RockRoutesCO/blob/master/CODE/MAP.html>



Click any point to see more details about it!

Turn on and off the layers to narrow down your preferences.



<https://sites.google.com/tamu.edu/rockroutes/home>

# Discussion

## Expectations:

This webpage is expected to help beginner rock climbers to browse and find routes they can climb in Colorado. It can help them to navigate to the route quickly, as well as provide them with introduction info to climbing.

## Finished Product:

The website is able to be accessed via desktop or mobile devices where the user can turn on and off layers based on the climbing types and grades they prefer. The home page lets them browse the location based on preference. The navigation page connects them to Google Maps. The guide page informs them about rock climbing.



# Conclusion

In conclusion, we reached our goal of having a

1. Map with the ability of choosing which routes in specific want to be seen by the user
2. Map helping the user navigate to the route using google maps
3. Beginners' guideline to rock climbing