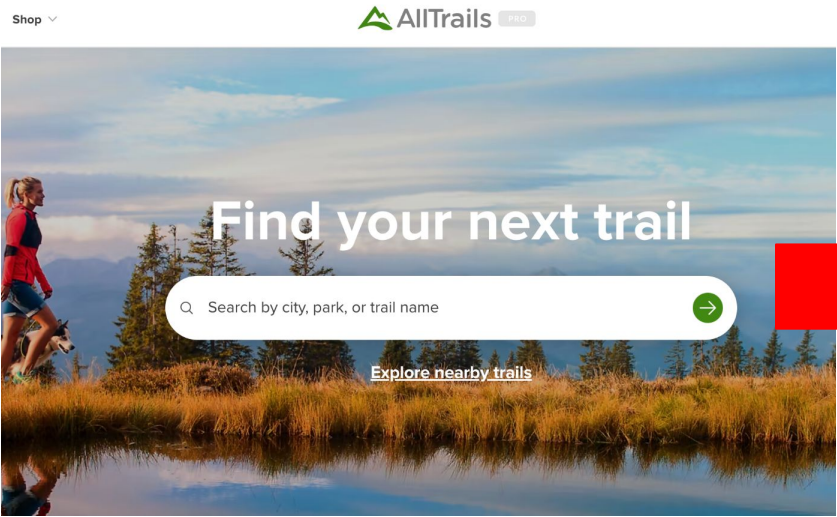




# Trails in U.S. National Parks

Haley Johnson, `username: haleyej`

# Data Source



**National Park Trails**

Data Code (3) Discussion (4) Metadata

23 New Notebook

Detail Compact Column 10 of 18 columns

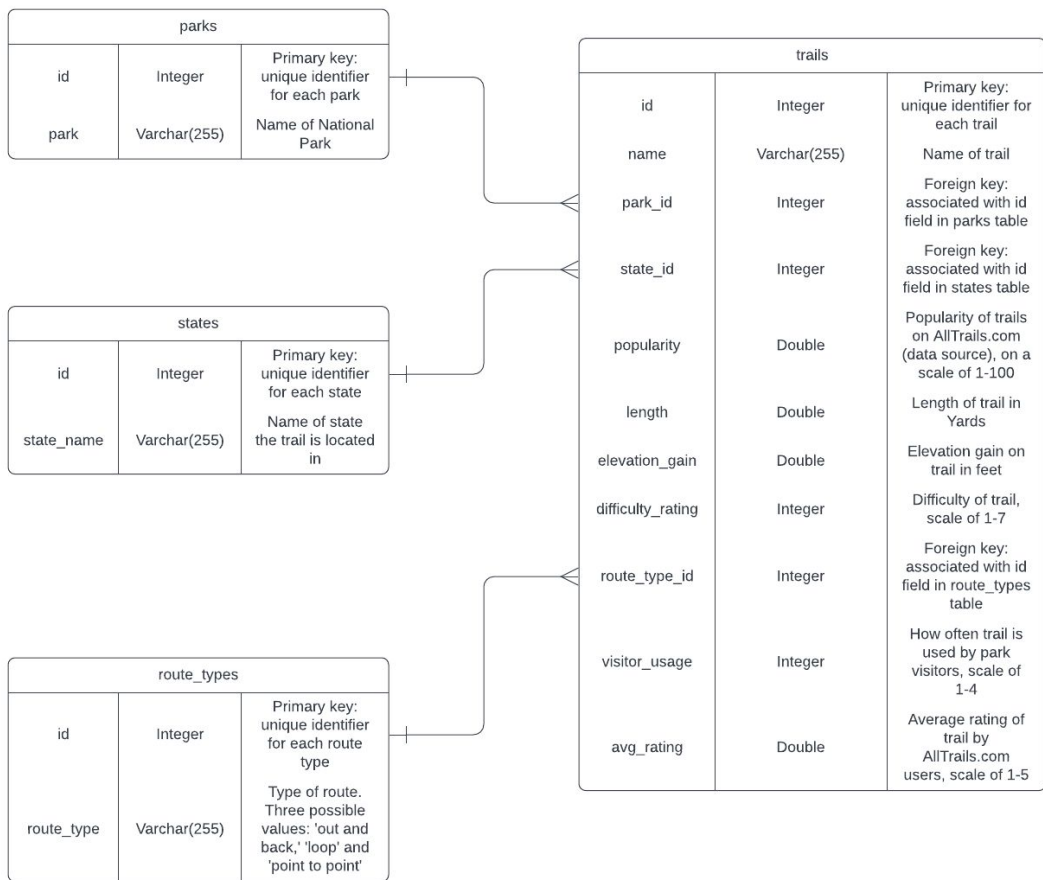
**About this file**

Each row details a trail in the National Parks Service

Trail ID	Name	Area Name	City Name	State Name
		Great Smoky Mount... 9%	Yellowstone Nation... 6%	California
		Yosemite National P... 7%	Yosemite Valley 6%	Washington
		Other (2778) 84%	Other (2910) 88%	Other (228)
10020048	Harding Ice Field Trail	Kenai Fjords National Park	Seward	Alaska
10236086	Mount Healy Overlook Trail	Denali National Park	Denali National Park	Alaska
10267857	Exit Glacier Trail	Kenai Fjords National Park	Seward	Alaska

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# Entity Relationship Diagram



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# Normalization

```
1 def create_table(df, col):  
2     '''  
3     Turns column in the dataframe  
4     into a new dataframe that just  
5     contains the unique values in  
6     that column  
7  
8     Function is used to split  
9     big dataframe into smaller table  
10    for normalization  
11  
12    Returns a new dataframe, just  
13    made up of the target column  
14    '''  
15    temp = df[col].unique()  
16    df = pd.DataFrame(temp, columns = [col])  
17    df = df.reset_index()  
18    df = df.rename(columns = {'index': 'id'})  
19    df['id'] = df['id'].apply(lambda s: s + 1)  
20    return df  
21
```

```
1 def normalize(df1, df2, target, fk):  
2     '''  
3     Normalize tables to prepare for SQL  
4     puts foreign keys into main table  
5  
6     Takes in four arguments:  
7     two dataframes that are being merged,  
8     the column used to merge them  
9     the foreign key connecting the table  
10  
11    Return a dataframe with the  
12    foreign key normalized  
13    '''  
14    df1 = df1.merge(df2, on = target)  
15    df1 = df1.rename(columns = {'id': fk})  
16    df1 = df1.drop(columns = target)  
17    return df1
```

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# Homework Question

Give me a list of trails and the parks they're located in that have high difficulty ratings (greater than or equal to 5), but are frequently used by visitors.

- **Note:** difficulty is reported on a 1-7 scale, visitor usage is reported on a 1-4 score

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# Homework Question

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```
cur.execute('''SELECT t.name, p.park, t.difficulty_rating, t.visitor_usage
FROM trails t
JOIN parks p
ON t.park_id = p.id
WHERE t.difficulty_rating >= 5
AND t.visitor_usage =
      (SELECT max(visitor_usage) FROM trails)''')
```

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# Homework Question

Give me a list of trails and the parks they're located in that have high difficulty ratings (greater than or equal to 5), but are frequently used by visitors.

- **Note:** difficulty is reported on a 1-7 scale, visitor usage is reported on a 1-4 score

Merced Lake High Sierra Camp Trail in Yosemite National Park  
Visitor Usage Rating (1-4): 4.0  
Difficulty Rating: 5

Alum Cave Trail to Mount LeConte in Great Smoky Mountains National Park  
Visitor Usage Rating (1-4): 4.0  
Difficulty Rating: 5

Chimney Tops Trail in Great Smoky Mountains National Park  
Visitor Usage Rating (1-4): 4.0  
Difficulty Rating: 5

Angels Landing Trail in Zion National Park  
Visitor Usage Rating (1-4): 4.0  
Difficulty Rating: 5

Old Rag Mountain Loop in Shenandoah National Park  
Visitor Usage Rating (1-4): 4.0  
Difficulty Rating: 5

Lena Lake Trail to Upper Lena Lake Trail in Olympic National Park  
Visitor Usage Rating (1-4): 4.0  
Difficulty Rating: 5

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# Things I'd Do Differently

A features		A activities	
['dogs-no', 'forest', '...	5%	['birding', 'hiking', 'n...	14%
['dogs-no', 'views', '...	4%	['birding', 'hiking', 'n...	8%
Other (3017)	91%	Other (2614)	79%
['dogs-no', 'forest', 'river', 'views', 'waterfall', 'wild- flowers', 'wildlife']		['birding', 'camping', 'hiking', 'nature-trips', 'trail-running']	
['dogs-no', 'forest', 'views', 'wild-flowers', 'wildlife']		['birding', 'camping', 'hiking', 'nature-trips', 'walking']	
['dogs-no',		['hiking',	

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## Linking tables

i.e. activities  
parks\_to\_activities