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1 Overview

The **hikecalc** is intended to help you find and plan hikes suitable for your available time and energy. It lets you pick alternatives that include various waypoints and provides total and cummulative miles. You provide constraints, it does the figuring.

The data file for **hikecalc** is a simply formatted text file. You can write your own or use data files that come with the package. Generally, one data file rikeflects distances between points in a fairly local region. The points usually represent Trail Heads or Junctions. For instance, one of the supplied data files is for the Catalina Mountain range that is North of Tucson, Arizona.

2   Reports; what hikecalc can tell you

Every time you invoke hikecalc, it outputs something. We call the outputs
"reports" even though they are sometimes very simple lists.

3   Example Use Cases

3.1   Get help

```
hc --help
```

```
hc shortest --help
```

3.2   What trailheads are in the file?

```
hc th $CATDATA
```

3.3   What waypoints are in the file?

```
hc wp $CATDATA
```

3.4   How far is it from Sabino visitor center to The Window?

```
hc shortest -w SabinoTH -w TheWindow  $CATDATA
```

3.5   What is the detail distance from Butterfly to Palisades Ranger Station?

```
hc shortest -w ButterflyTH  -w PalisadesRangerTH --details $CATDATA
```

3.6   Figure out multi-day hike with given end-points

We want start at Marshall Gulch and end at Sabino Visitor center. I car
shuttle will be used. So, its a thru-hike, not out-and-back or loop. We will
take 4 days (3 nights).

First we list the trail-heads so we know the precise names of our start
and end points as given in the data file.

```
hc th data/catalina.dat
```

Then we calculate the basic route:

```
hc shortest --details -w MarshallGulchTH -w SabinoTH $CATDATA
```

This gives are the route, tells us the total trip will be 18.7 miles. Since we want to take 4 days, we should AVERAGE 4.7 per day. But we expect to start a little later on the first day since we have to get up the mountain and we don't like getting up real early.

Looking at our detail route, we pick the waypoints of the places we want to camp near. We choose LemmonPoolJct, WestFortTE, BridalVeilFalls.

```
hc shortest --details -w MarshallGulchTH  -w SabinoTH -c LemmonPoolJct 1   -c WestFork
```

This lists 3 columns of distances:

1. segment

2. running total for day

3. running total for trip

We see that day 1 and day 3 are lower milage days. This feels right since we'll start later on day 1 and day 3 goes up and over Cathedral Saddle so will be harder. The last day is the the highest milage but we'll be on the road for a little and besides, we'll be sleeping in our own bed that night!

4 Example: Use HC + org-mode to generate planning document with hike options

This example was from an actually planning activity.

The use of HC for this activity was imbedded in a text document that was edited using Emacs and org-mode. If that means nothing to you, that's ok. The example should still be informative.

4.0.1 For Emacs Users

If you use Emacs, you should take a look at org-mode and at this very file (docs/hikecalc.org). It will show you how you can write a nice looking document that includes anything you want to say about a trip AND includes reports from HC but avoids having to cut/paste the HC output. The beauty is that as you develop your planning document you can be free to tweak the parameters to HC in the reader friendly document, without the hassle of having to re-import or cut/paste. Emacs and org-mode will run HC for you when you publish/export your document and include the HC reports for you.

4.1   Grand Canyon, East of Hermit

4.2   "The Works" (4 nights)

Covers everything Steve has burning need to do between Kaibab and Hermit. Hits the Colorado - TWICE!

Includes optional side-hikes to:

1. Plateau$_{Point}$ at Sunset! (day pack)

2. Granite$_{Rapids}$ (camp)

3. Hermit$_{RapidsBM8}$ (with time to relax, day pack)

No Plateau sunset. Could do Plateau at end of Day 1 but it would add to overall miles and make day one 3 miles longer.

4.3   "A Quicky" (2 nights)

The shortest trip that finishes Steve's Thanksgiving hike EXCEPT it adds Plateau$_{Point}$ at sunset (day pack).

- No South Kaibab.

- No River.

4.4   "Git'r Done!" (2 nights)

Minimize camping, but hike a long day 2 (which is all Tonto).

- No River

- No Plateau sunset.

Could do Plateau at end of Day 1 but it would add to overall miles and make day one 3 miles longer.

4.5   "The Middle Way" (3 nights)

A compromise of the other options.

- Plateau$_{Point}$ at sunset (day pack).

- Hits the river once (day pack).

5   TODO (NOT IMPLEMENTED YET)

5.1   Types

OB out-and-back, from Trail-Head to some destination. Retrace path back to TH.

Loop Start and end at the same TH. But don't retrace path.

Through Start and end at different Trail-Heads. You probably need a shuttle to get back to where you started.

5.2   Things you can do

For each path, you can get a simple summary of the total, or you can get a segment by segment running total of the milage.

☐ OB (Out and Back) - "Round Trip".

- You provide TH and turn around point
- Returns the shortest route out and back to your turn-around point (turn-around point must be a waypoint in the data file)

☐ OB - max distance

- You provide TH and the maximum distance you want to hike.
- Reports possible turn around points with round-trip distance to each.

☐ Through hike with shuttle

- You provide start and end TH.
- Report