CS 341: Homework 4 (Go)

Jon A. Solworth

Due: Nov. 14 2023 at 11:59 PM

1   Description

You are to write a password manager, which manages a set of entries, each entry containing the following information:

site the domain name of the site

user user name

password password

for each site and user contained. There may be multiple users per site listed (each with their own password).

Your program will implement the following commands

l list out the contents of the passwordMap

    l

Use fixed widths so that the site, user, and password columns line up in tabular form. The name of the function which performs this is called `pmList`.

a add the site, user, and password

    a s u p

where s is the site, u is the user, and p is the password
Adding a password for the existing site, user pair gives a "add: duplicate entry" error. The name of the functions which performs this is called `pmAdd`.

r remove a site and user

- `r s` (remove the user from the site if only there is a single user. Otherwise give: "remove: attempted to remove multiple errors" error) . Use `pmRemoveSite` for this function.
- `r s u` (remove the user from the site, if not present gives a "remove: user not found" error). The name of the function which performs this is called `pmRemove`.

It is an error to remove a non-existent user/site, and `pm` should print an appropriate error message.

x exit the program

The passwords are kept in a `passwordMap`, a map.

The program should initialize the `passwordMap` from the file `passwordVault` using `pmRead`. It should overwrite the file every time the `passwordMap` is update using `pmWrite`.

2 Structure

It is to consist of a single files, `main.go` and is part of the `main` package:

3 Sample tests

3.1 Sample inputs

```
l
a google.com samuel youllNeverGuessThis
a google.com raj    noWay
l
r google.com
l
r google.com raj
l
a facebook.com aryan NoGoISay
a amazon.com syed fjaslkjf
a google.com ke fjd
a facebook.com syed ldflj
a facebook.com krishna dfk
r upside.com
r stackoverflow.org sarthak
a facebook.com syed fdljaf
l
x
```

3.2 Sample screenshots

```
l
a google.com samuel youllNeverGuessThis
a google.com raj noWay
l
                                    google.com              samuel   youllNeverGuessThis
                                    google.com                 raj               noWay
r google.com
attempted to remove multiple users
▯
```

```
l
                                    google.com              samuel   youllNeverGuessThis
                                    google.com                 raj               noWay
r google.com raj
```

```
l
                                    google.com              samuel   youllNeverGuessThis
a facebook.com aryan NoGoISay
a amazon.com syed fjaslkjf
a google.com ke fjd
a facebook.com syed ldflj
a facebook.com krishna dfk
r upside.com
remove: site not found
r stackoverflow.org sarthak
remove: site not found
a facebook.com syed fdljaf
add: duplicate entry
l
                                google.com              samuel   youllNeverGuessThis
                                google.com                  ke                   fjd
                            facebook.com               aryan              NoGoISay
                            facebook.com                syed                 ldflj
                            facebook.com             krishna                   dfk
                              amazon.com                syed              fjaslkjf
```