

report

Main Features

User Information Retrieval.

The main function of the program is to retrieve information about users specified via the command line or currently logged into the system. The information retrieved includes:

- **User name (login):** Unique identifier of the user in the system.
- **Real name:** Full name of the user, often retrieved from the GECOS field of the `/etc/passwd` file.
- **Office location and phone numbers:** Additional information about the user's location and contacts.
- **Home directory and login shell:** Information about the path to the user's home directory and the shell used for login.
- **Login time and terminal used:** Time details on the user's most recent login and the terminal used.
- **Idle time:** Calculation of the user's idle time, if available. **-Mail status:** Indication of whether the user has any new unread emails.
- **Contents of .plan, .project and .pgpkey files:** Personal information of the user, such as schedules, current projects and PGP public keys.

Viewing Modes.

The program supports several display modes:

- **Long format (-l):** Shows extended details for each user.
- **Short format (-s):** Shows only essential information in a table.
- **Format without plan (-p):** Similar to long format, but without the `.plan`, `.project` and `.pgpkey` files.
- **Format matching of user names (-m):** prevents matching of user names. Usually, a user is identified by the login name, but without the `-m` option, the

search can also include users' real names

Search by Real Name

The program also allows searching by real name (GECOS) of users, not just by login name. This feature is useful when the user's name is unknown, but other details are known.

Design Decisions

Use of Structures.

Use of the UserInfo structure allows all information pertinent to a user to be kept in a single object, making it easier to manage and visualize the data.

Parsing of Command Line Parameters.

The parse_command_line function handles the parsing of command line parameters.

command line, allowing flexible configuration of display options and user names to be searched.

Phone Number Formatting.

The format_phone_number function is designed to correctly format phone numbers according to their length, improving the readability of information.

Idle Time and Login Time Management.

The get_idle_time and get_login_time functions calculate and format users' idle time and login time, respectively, considering the difference between the current time and the last login time.

Avoiding Duplicate Processed Users

The handle_user_info function ensures that each user is processed only once, avoiding duplicate information display.

GECOS Storage.

The copy_ecos_list function dynamically copies users' GECOS field values, allowing separate processing of usernames and additional information.