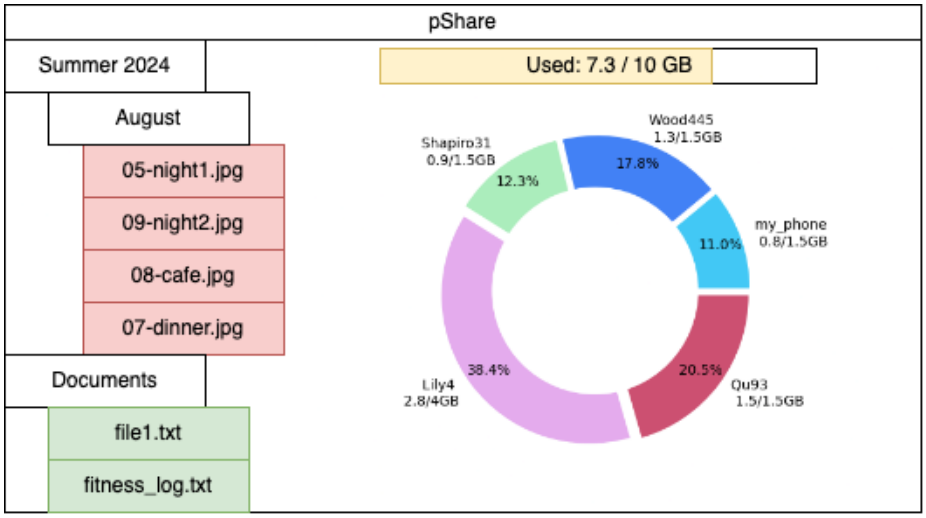
WAN research V1.0 (01/26/25)

Example UI to illustrate potential WAN functionality

On the left of the image are the unencrypted files on the local device. Red indicates that the specified file has not been stored on any remote node (local availability only), green indicates local availability + remote availability, white means stored remotely but not locally. Folders are currently all white, regardless of the status of their content's storage. Similar functionality can be implemented for folders: the image was intended to be simple. The local device has a list of IPs indicating where each file (and potentially part of file) is located, alongside access credentials for a partition within each of these devices set aside for it (this way the remote user cannot access the full device, only interact with our application to retrieve files previously stored remotely). The right side of the image contains a donut chart with a breakdown of how much each remote user is storing, as well as the total allotted amount. These are encrypted files: the local device does not have the ability to read the unencrypted form.



Function: uploading

1. Double click on a red file to begin the upload to the network of storage nodes.
    a. The local device sends out a series of requests to the relevant devices to upload the specified file.
        i. By default, we provide an algorithm to determine which remote device(s) the file is stored on. The user can manually override this in settings.
2. Upon successful remote storage, the file color changes to green, indicating that the file is now stored both locally and remotely.

Function: downloading

1. Double click on a white file to begin the download from the network of storage nodes.
    a. The local device sends out a series of requests to the relevant devices to retrieve the specified file.
2. See step 2 of *Uploading*.

Function: removing local copy

1. Double click a green file to turn it white, which indicates the file has been deleted from local storage and is now only available remotely.

Function: configuring local storage available to remote devices

1. Right click on the portion of the donut chart (a simplification: a dropdown / search may be more practical) and edit the allotted storage for the specified user. By default, this pings the remote device and deletes after a confirmation is received from the remote device, unless overridden by the user.

Next week's research goals

1. Confirm the proposed functions / functionality with the group.
2. *Look into* how existing technologies do something similar, and *evaluate* whether this would be useful for implementing the above functionality.
    a. P2P File Sharing (Resilio Sync)
        i. Sync a file / folder between 2 computers
    b. External File Transfer Services
        i. Send anywhere
        ii. We transfer
    c. SSH
    d. FTP
3. Based on this research, choose a method, in order to implement the functions specified above (starting in the February sprint).