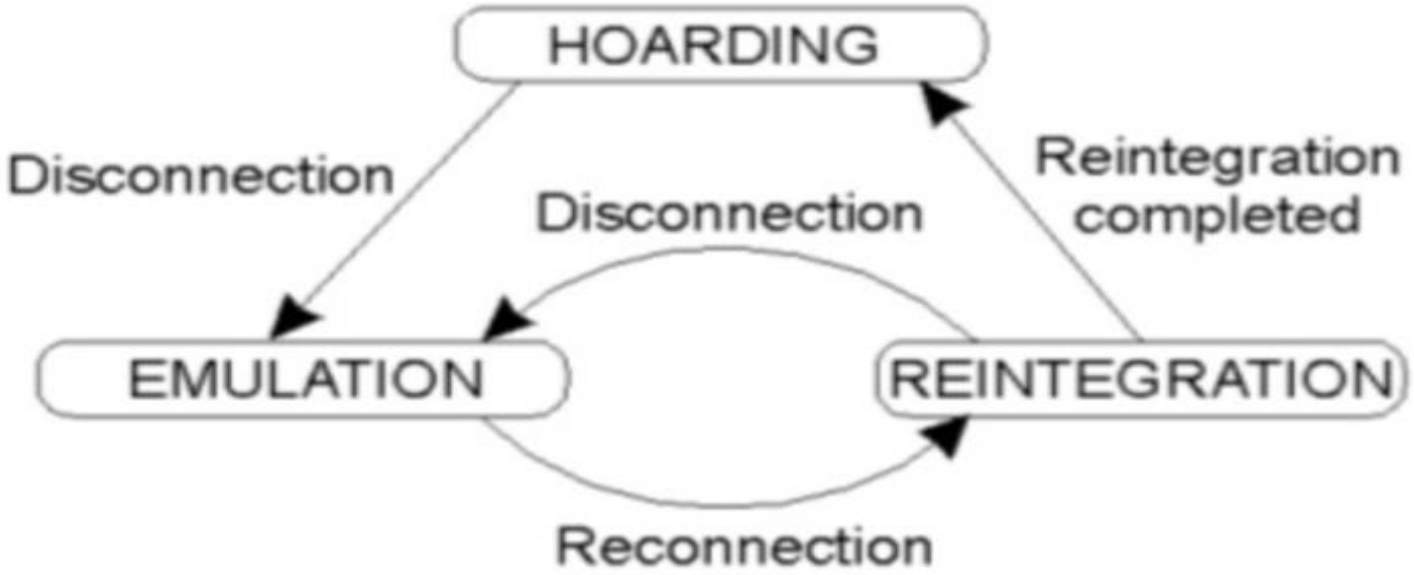
Disconnected Operation:

Hoarding – Filling the cache in advance with all the files that might be required in near future while disconnected.

Emulation – when disconnected, behavior of the server is emulated by the client.

Reintegration – transfer updates to server, resolves conflicts

State Diagram of a Client in disconnected operation



Question. On what basis Hoarding is done?
You should know the three conditions – based on which the cache is said to be in equilibrium.

Crucial to the success of continuous operation while disconnected is that the cache maintains all the necessary data.

Coda uses sophisticated priority mechanism to ensure that useful data is indeed cached.

First a user can explicitly state which files he/she finds important by storing there pathnames in the hoard database.

Such a database is maintained at each workstation in CODA.

Combining the information in the hoard database with the info. on recent references to a file allows CODA to compute a current priority on each file, after which it fetches the files in priority such that the following 3 conditions are met:

1. There is no uncached file with a higher priority than any cached file.
2. The cache is full or no uncahed file has non zero priority.
3. Each cached file is a copy of the one maintained in the client's AVSG.

- If all the conditions are met the cache is said to be in equilibrium.

- The priority of a file may change over a time period and cached files may need to be removed from the cache to make room for the other files, thus cache equilibrium needs to be recomputed from time to time. This process is known as hoard walk.

- *However the technique does not guarantee that the data required by the user in future will always be cached in the client's machine, in such cases the process will fail due to unavailability of data.*

Assignment 3

1. You are required to explain the importance of
   - Call Back Messages
   - Coda Version Vectors
2. Define the following terms:
   - Hoarding
   - Hoard walk
   - Hoard Database
3. Explain the three states a Venus process / Client can be in.

Note: Take suitable examples and use diagrams to explain your answers