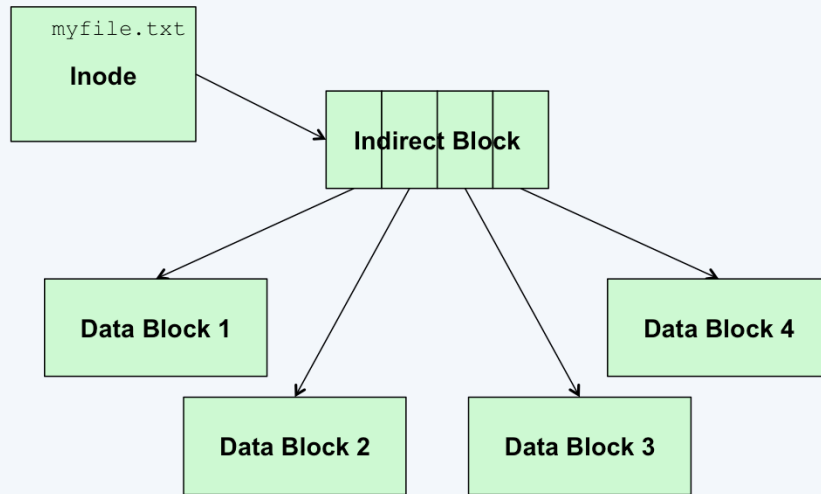


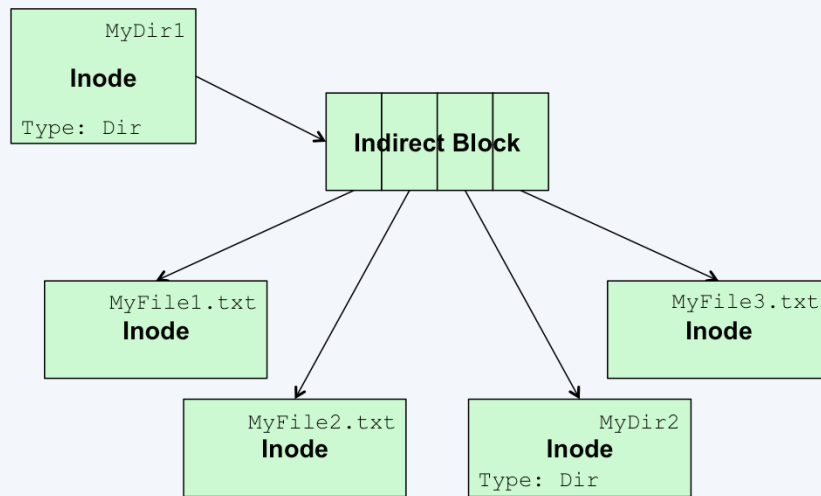


# CS 138: PuddleStore

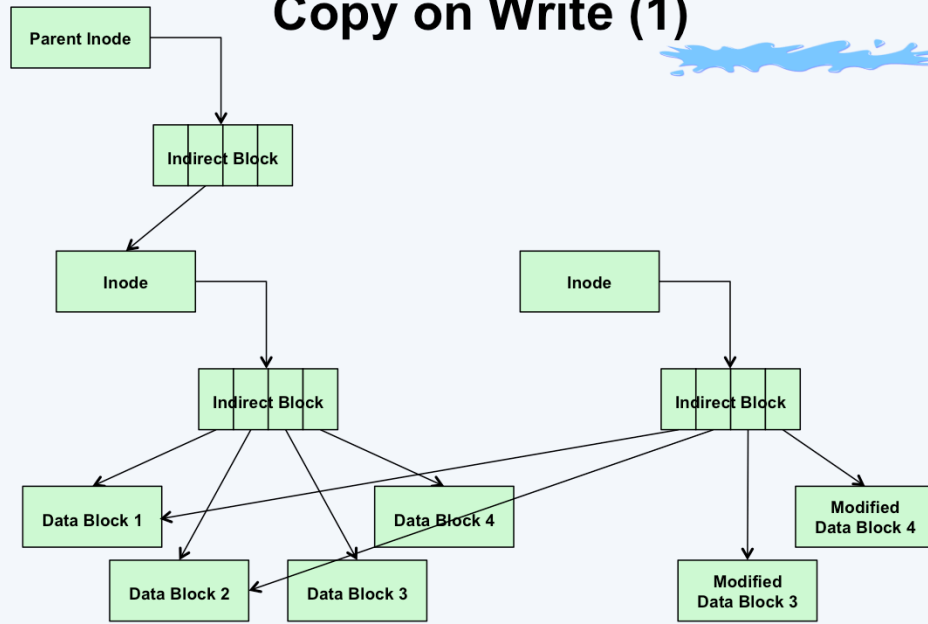
# A File



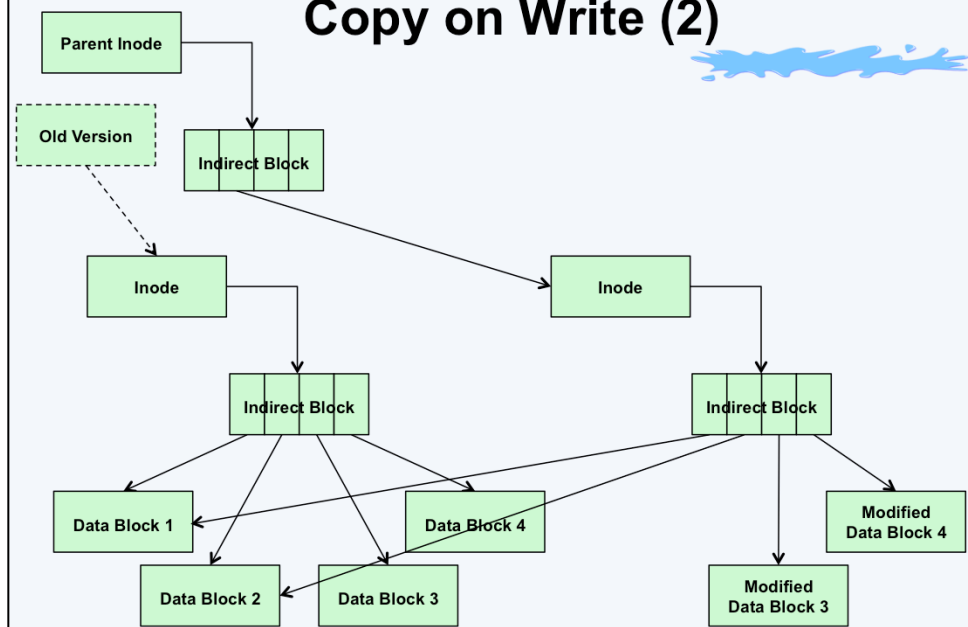
# A Directory



# Copy on Write (1)



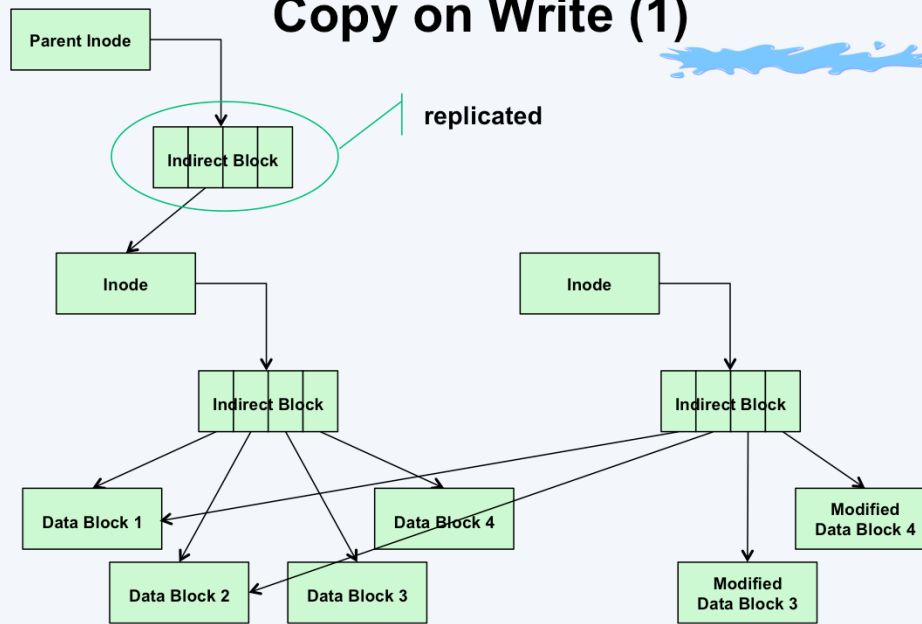
## Copy on Write (2)



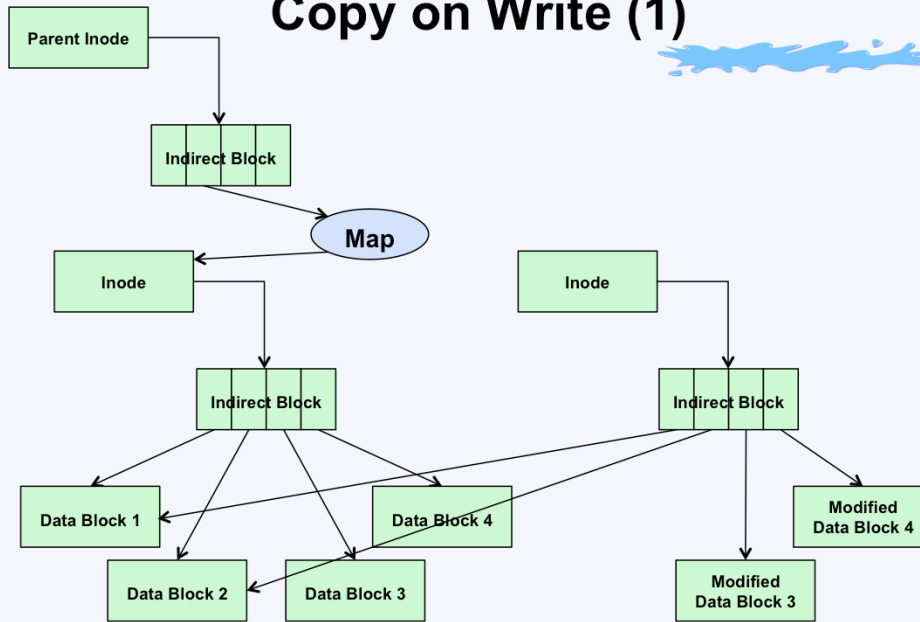
# Tapestry

- **Inodes, indirect blocks, and data blocks**
  - stored in Tapestry
  - identified by GUIDs
  - replicated

# Copy on Write (1)

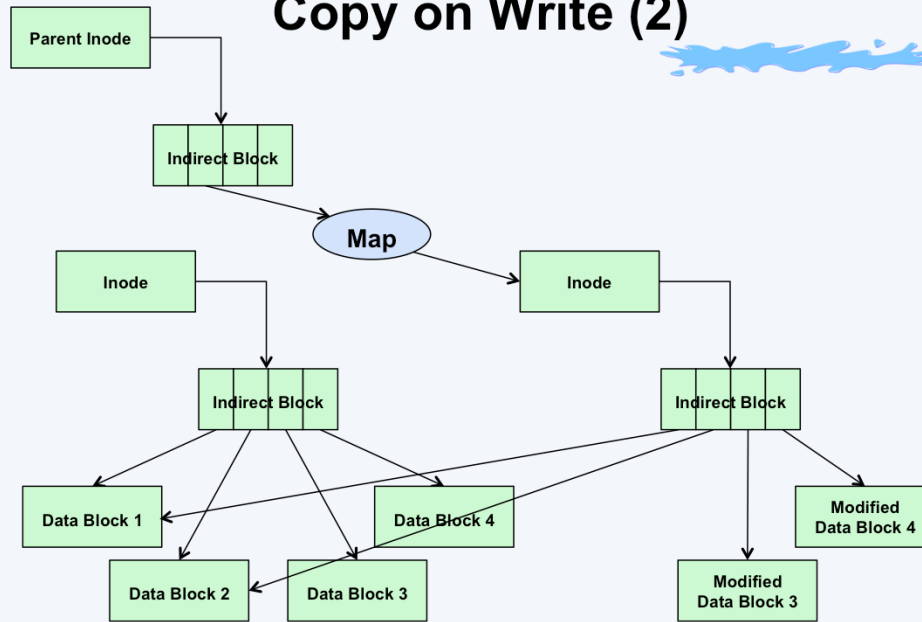


# Copy on Write (1)





## Copy on Write (2)



# Raft

- The map is handled by Raft
  - inodes referred to by *Active GUIDS* (AGUIDs)
  - mapped to *Version GUIDs* (VGUIDs)

# Membership Server

- **Well known server**
  - i.e., all clients know how to contact it
- **Identifies Tapestry and Raft nodes**
- **Identifies root directory's AGUID**
- **Facilitates adding nodes to Raft and Tapestry**

# Required API

- **Open**
- **Read**
- **Write**
- **Create**
  - both file and directory
- **List**
  - contents of directory
- **Remove**
  - deletes file or empty directory

# Tapestry and Raft

- **Your choice**
  - use your own
    - (please don't post it publicly on github!)
  - use the TA version
    - you don't own your project
    - you must sign an NDA

# Final PuddleStore



- You put all this together
  - we give you (most of) the B design
    - if you implement it completely: you get a B
    - if you improve it (reasonably well): you get an A
      - you're encouraged to discuss your design with other teams
- Due May 9

# Design Document

- **Due Friday, April 22**
  - hand it in earlier, you'll get it back earlier
- **Describes A-level features (if any)**
  - what is required to implement them?
- **Describes API**
- **How will you test the API?**
- **What else will you do to test your code?**