Project 2a Gitlet Design Doc

1. Classes and Data Structures

Repository

This class stores …

Fields

- File directory; // the current directory of the repository of the project

- String head;   // the id for the most recent commit

- Branch master;  // the master branch of the gitlet program

- HashSet<String> commits;

  /\* a hashset that maintains all the commits made in the repository since initialization\*/

- HashMap<String, String> blobs;

  /\* a hashmap that maintains all the blobs that were added since initialization \*/

StagingArea

This class stores...

Fields

- File directory; // the current directory of the staging area

- private HashMap<String, String> stagedAdd;

  /\* maintains an hashmap that stores the blobs that are staged for addition \*/

- private HashMap<String, String> stagedRemove;

  /\* maintains an hashmap that stores the blobs that are staged for removal \*/

Commit

This class stores…

Fields

- private File directory; // the current directory commit files

- private String parent; // stores the id of the previous commit

- private String commitID; // stores the current commit’s id

- private String message; // stores the commit message

- private String timeStamp; // stores the time when the commit happened

- private HashMap<String, String> blobs;

  /\* maintains an hashmap that stores the blobs added in the commit \*/

Blob

This class stores…

Fields

- private File directory; // the current directory of blob files

- private String blobID; // stores the id of the blob

- private String fileName; // stores the fileName of the blob

- private byte[] fileContent; // stores the content of the blob

Branch

This class stores…

Fields

- private String branchName;

2. Algorithms

Repository

- public void init(); // sets up a new repository and initialize all other elements

- public void add(String fileName); // adds the input file to the staging area

- public void commit(String message);

  /\* adds a new commit to the repository with the message \*/

- public void rm(String fileName); // removes the input file from the staging area

- public void log();

  /\* display all the information of commits starting back from current commit \*/

- public void globalLog();

  /\* display all the information of commits including different branches \*/

- public void find(String message); // prints out all commits with the input message

- public void status();  // display all branches and files at the staging area

- public void checkOut(String fileName);

- public void checkOut(String commitID, String fileName);

- public void checkOut(String branchName);

- public void branch(String branchName); // create a new branch with the input name

- public void rmBranch(String branchName); // removes the branch with the input name

- public void reset(String commitID); //

- public void merge(String branchName);

- public void rebase(String branchName);

Staging Area

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Commit

- public String getParent(); // returns the parent’s commit id

- public String getID(); // returns the id of this commit

- public String getMessage(); // returns the message for this commit

- public String getTime(); // returns the time the commit happened

- public void setID(Object… vals); // sets an unique id for this commit using sha1

- public void setMessage(String message); // sets the message for this commit

- public void setTime(); // sets the time when this commit happened

- public HashMap<String, String> getBlobs(); // returns the blobs of this commit;

Blob

- public String getID();

- public String getName();

- public byte[] getContent();

- public void serialize();

- public Blob deserialize(String blobID);

Branch

3. Persistence