TimelineServiceImpl
- User user
- ArrayList<Tweet> tweets
- TweetManager tweetManager

+ void addTweetsFromFile(ArrayList<Tweet> tweets)
- void sortTweetsByTime()
+ void update(Tweet tweet, Boolean state)
+ ArrayList<Tweet> refresh()

TweetingServiceImpl
- TweetManager tweetManager

+ TweetingServiceImpl(User user)
+ Tweet addNewTweet(User author, String text)
+ void removeTweet(Tweet tweet, User user)
+ void like(Tweet tweet, User user)
+ void unLike(Tweet tweet, User user)
+ void reply(Tweet tweet, Tweet replyTweet)
+ void removeReply(Tweet tweet, Tweet replyTweet)
+ Retweet retweet(Tweet tweet, User user, String text)
+ void removeRetweet(Tweet tweet, User user, Retweet retweet)
+ ArrayList<JSONObject> toJsonArrayTweet()

UserAccount
- final User user
- TweetingServiceImpl tweetingService
- TimelineServiceImpl timelineService
- ObserverServiceImpl observerService
- TweetManager tweetManager

- void getTweetsFromDataBase(User user)
+ void addFollowing(User user)
+ void removeFollowing(User user)
+ Tweet addNewTweet(String text)
+ void removeTweet(Tweet tweet)
+ void like(Tweet tweet)
+ void unLike(Tweet tweet)
+ void reply(Tweet tweet, String text)
+ void removeReply(Tweet tweet, Tweet replyTweet)
+ Retweet retweet(Tweet tweet, String text)
+ void removeRetweet(Tweet tweet, Retweet retweet)
+ ArrayList<Tweet> getTweets()
+ User getUser()

LogDataBase
- Path path
+ void writeLogFile(boolean state, String username, String detail)
+ String readLogFile()
- String attempt(String detail, String username, boolean state)

<<Enumeration>>
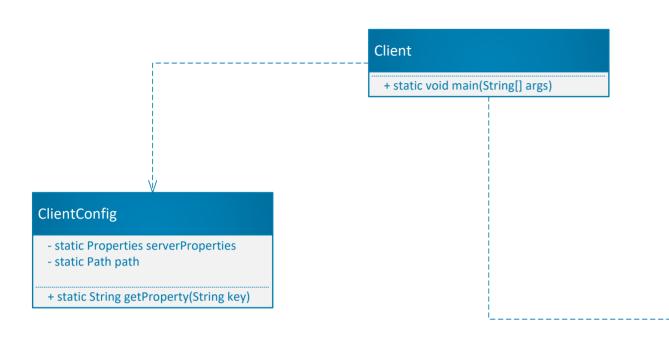**ServiceWordsEnum**

+SIGNUP
+SIGNIN
+TWEET
+REMOVETWEET
+RETWEET
+REMOVERETWEET
+LIKE
+DISLIKE
+REPLY
+REMOVEREPLY
+EXIT
+TIMELINE
+MANAGE_TWEETS
+MANAGE_FOLLOWS
+SHOW_MY_TWEETS
+FOLLOW
+UNFOLLOW
+SHOW_FOLLOWINGS
+SHOW_USERS

dateSorter
+int compare(Tweet o1, Tweet o2)

ServerConfig
- static Properties serverProperties
- static Path path
+ static String getProperty(String key)

TweetManager
- UserManager userManager
- static TweetManager instance
- TweetDataBase database
- static HashMap<Long, Tweet> tweets
- static HashMap<String, HashSet<Tweet>> userToTweets

- static TweetManager getInstance()
+ ArrayList<Tweet> getDataFromDatabase(User user)
+ ArrayList<Tweet> getTimeline(User user)
- void addReplies(JSONObject tweet)
- void addLikes(JSONObject tweet)
+ ArrayList<Tweet> addToUserToTweets(Tweet tweet)
+ ArrayList<Tweet> removeFromUserToTweets(Tweet tweet)
+ ArrayList<Tweet> HashSetToArrayList(String username)
- User getAuthor(String username)
+ ArrayList findTweetsByAuthor(User author)
+ ArrayList findTweetsByTime(LocalDateTime date)
- void checkDate(LocalDateTime date)
+ void addNewTweet(Tweet tweet)
+ void removeTweet(Tweet tweet, User user)
+ ArrayList<Tweet> getTweets()
+ Tweet findTweet(Long id)
+ boolean isNotExistID(long id)
+ long makeID()
+ void update(Tweet tweet, Boolean state)

Server
+ static void configureServer()
+ static void main(String[] args)

<<Interface>>
Subscriber
+update(Tweet tweet,Boolean state)

SubscriberManager
+static HashMap<User ,HashMap<User , Subscriber >>subscribers

+Operation 1 ()

ObserverServiceImpl
- UserManager userManager

+ void subscribe(User user, Subscriber subscriber, User subscriberUser)
+ void unSubscribe(User user, Subscriber subscriber, User subscriberUser)

ServerProcessor
- AuthenticationServiceImpl authenticationService
- TweetManager tweetManager
- UserAccount userAccount
- UserManager userManager
- JSONObject response
- LogDataBase logDataBase

+ JSONArray toJsonArrayTweet(ArrayList<Tweet> list)
+ JSONArray toJsonArrayUser(ArrayList<User> list)
+ ArrayList<String> getIds(ArrayList<User> users)
- Tweet findTweet(JSONObject jsonParameters)
- JSONObject processRequest(JSONObject jsonObject)
- JSONObject signUp(JSONObject jsonParameters)
- JSONObject signIn(JSONObject jsonParameters)
+ JSONObject toJsonObject()

ClientHandler
- final Socket connectionSocket
+ void run()

TweetDataBase
- Path path
+ void writeFile(String id, String username, JSONObject jsonObject)
+ JSONObject readFile(String id, String username)
+ HashMap<Long, JSONObject> getDirectoryFiles(User user)
+ void removeFile(String id, String username)

Publisher
+ void notify(Tweet tweet, Boolean state)

ToHexString
+ static byte[] getSHA(String input)
+ static String toHexString(byte[] hash)

AuthenticationServiceImpl
- User user;
- AuthenticationService authenticationService;
- UserManager userManager;

+ User signUp(String firstName, String lastName, String username, String password, LocalDate birthDate)
+ User signIn(String username, String password)
+ User verify()
- String getHash(String password)

SignUp
- UserManager userManager
- String firstName
- String lastName
- String username
- String password
- LocalDate birthDate
- ArrayList<String> exceptions

- void checkAge(LocalDate birthDate)
- void checkUsername(String username)
- void checkName(String text)
+ User verify()

Tweet
- final long id;
- final User author;
- JSONObject jsonObject;
- String text;
- HashSet<User> likes = new HashSet<>();
- ArrayList<Tweet> replies = new ArrayList<>();
- HashSet<JSONObject> retweets = new HashSet<>();
- final LocalDateTime sendDate;

+ void setLikes(HashSet<User> likes)
+ void setReplies(ArrayList<Tweet> replies)
+ void likeTweet(User liker)
+ void removeLike(User liker)
+ void addNewReply(Tweet tweet)
+ void removeReply(Tweet tweet)
+ String getText()
+ void editText(String text)
+ HashSet<User> getLikes()
+ ArrayList<Tweet> getReplies()
+ User getAuthor()
- void checkTweetCharacters(String text)
+ void addRetweet(Retweet retweet)
+ int getRetweetNumber()
+ int getLikeNumber()
+ void removeRetweet(Tweet retweet)
+ String toString()
+ HashSet<String> toHashSetLikes(HashSet<User> likes)
+ ArrayList<JSONObject> toJsonArrayTweet(ArrayList<Tweet> list)
+ JSONArray toJsonArrayRetweet(HashSet<JSONObject> list)
+ long getId()
+ Tweet findReply(long id)
+ JSONObject toJson()

UserManager
- static UserManager instance
- static UserDataBase databaseHandler
- static HashMap<String, User> users
- SubscribersManager subscribersManager

+ static UserManager getInstance()
- void getDataFromDatabase()
- void addFollowing()
+ User findUser(String username)
+ User findName(String username)
+ String getUserPassword(String username)
+ LocalDate getUserBirthDate(String username)
+ boolean isNotUsernameExist(String username)
+ void addNewUser(User user)
+ ArrayList<User> getUsers()
+ void update(User user)

User
- String firstName
- String lastName
- String username
- String password
- LocalDate birthDate
- LocalDate registryDate
- String biography
- JSONObject jsonObject
- HashSet<User> followings
- HashSet<User> followers

+String getFirstName()
+void setFirstName(String firstName)
+String getLastName()
+void setLastName(String lastName)
+getUsername()
+setUsername(String username)
+getPassword()
+setPassword(String password)
+LocalDate getBirthDate()
+setBirthDate(LocalDate birthDate)
+LocalDate getRegistryDate()
+String getBiography()
+void setBiography(String biography)
+void checkBiography(String text)
+ArrayList<String> toJsonArrayUserStr(HashSet<User> list)
+ArrayList<JSONObject> toJsonArrayUser(HashSet<User> list)
+JSONObject toJson()
+void addFollower(User user)
+void removeFollower(User user)
+void addFollowing(User user)
+void removeFollowing(User user)
+ArrayList<User> getFollowings()
+ArrayList<User> getFollowers()
+JSONObject getJsonObject()

SignIn
- String username
- String password
- UserManager userManager

+ User verify()

UserDataBase
- Path path
+ void writeFile(String id, JSONObject jsonObject)
+ JSONObject readFile(String id)
+ ArrayList<JSONObject> getDirectoryFiles()
+ void removeFile(String id)

Retweet
-Tweet retweetedTweet;
+ Tweet getRetweetedTweet()
+ String toString()
+ JSONObject toJson()

Client

+ static void main(String[] args)

CommandParserServiceImpl

- final ConsoleViewServiceImpl consoleViewService
- ConnectionServiceImpl connectionService

+ void run()
- ServiceWordsEnum authentication()
- void signIn()
- void signUp()
- void mainMenu()
- ServiceWordsEnum mainMenuCommandAnalyzer()
- void manageTweets()
- ServiceWordsEnum manageTweetsCommandAnalyzer()
- JSONArray showTimeLineTweets()
- JSONObject makeRequest(ServiceWordsEnum serviceWordsEnum, JSONObject jsonObject)
- void tweetCommand()
- void removeTweetCommand()
- void retweetCommand()
- void replyCommand()
- void retweetCommand()
- void replyCommand()
- void removeReplyCommand()
- void likeCommand()
- void unlikeCommand()
- ServiceWordsEnum manageFollowsCommandAnalyzer()
- JSONArray showAllUsers()
- JSONArray showFollowings()
- void manageFollows()
- JSONArray showMyTweets()
- void followCommand()
- void unfollowCommand()

<<Enumeration>>
ServiceWordsEnum

+SIGNUP
+SIGNIN
+TWEET
+REMOVETWEET
+RETWEET
+REMOVERETWEET
+LIKE
+DISLIKE
+REPLY
+REMOVEREPLY
+EXIT
+TIMELINE
+MANAGE_TWEETS
+MANAGE_FOLLOWS
+SHOW_MY_TWEETS
+FOLLOW
+UNFOLLOW
+SHOW_FOLLOWINGS
+SHOW_USERS

ClientConfig

- static Properties serverProperties
- static Path path

+ static String getProperty(String key)

ConsoleViewServiceImpl

+ void welcome()
+ void mainMenu()
+ void manageTweetsMenu()
+ void manageFollowsMenu()
+ void showTimeline(JSONArray tweets)
+ void showUsers(JSONArray users)
+ void processServerResponse(ServiceWordsEnum serviceWordsEnum, JSONObject response)
- String showTweet(JSONObject tweet)
- String showUser(JSONObject user)
- String showRetweet(JSONObject retweet)

ConnectionServiceImpl

- Socket client
- OutputStream out
- InputStream in

+ JSONObject request(JSONObject jsonObject)