Social media CA3 project UML

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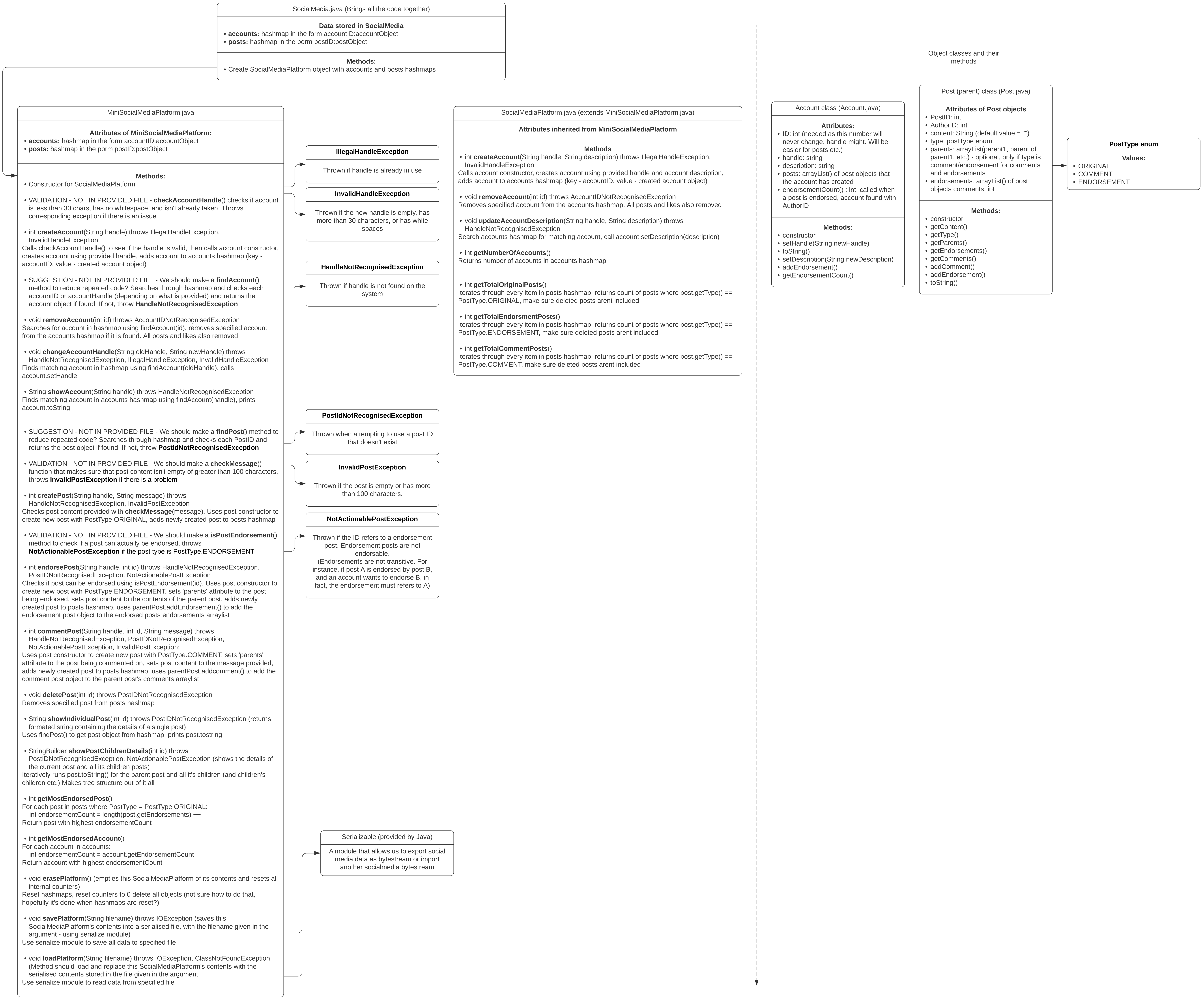

SocialMedia.java (Brings all the code together)

Data stored in SocialMedia
- **accounts:** hashmap in the form accountID:accountObject
- **posts:** hashmap in the porm postID:postObject

Methods:
- Create SocialMediaPlatform object with accounts and posts hashmaps

MiniSocialMediaPlatform.java

Attributes of MiniSocialMediaPlatform:
- **accounts:** hashmap in the form accountID:accountObject
- **posts:** hashmap in the porm postID:postObject

Methods:
- Constructor for SocialMediaPlatform

- VALIDATION - NOT IN PROVIDED FILE - **checkAccountHandle**() checks if account is less than 30 chars, has no whitespace, and isn't already taken. Throws corresponding exception if there is an issue

- int **createAccount**(String handle) throws IllegalHandleException, InvalidHandleException

Calls checkAccountHandle() to see if the handle is valid, then calls account constructor, creates account using provided handle, adds account to accounts hashmap (key - accountID, value - created account object)

- SUGGESTION - NOT IN PROVIDED FILE - We should make a **findAccount**() method to reduce repeated code? Searches through hashmap and checks each accountID or accountHandle (depending on what is provided) and returns the account object if found. If not, throw **HandleNotRecognisedException**

- void **removeAccount**(int id) throws AccountIDNotRecognisedException

Searches for account in hashmap using findAccount(id), removes specified account from the accounts hashmap if it is found. All posts and likes also removed

- void **changeAccountHandle**(String oldHandle, String newHandle) throws HandleNotRecognisedException, IllegalHandleException, InvalidHandleException

Finds matching account in hashmap using findAccount(oldHandle), calls account.setHandle

- String **showAccount**(String handle) throws HandleNotRecognisedException

Finds matching account in accounts hashmap using findAccount(handle), prints account.toString

- SUGGESTION - NOT IN PROVIDED FILE - We should make a **findPost**() method to reduce repeated code? Searches through hashmap and checks each PostID and returns the post object if found. If not, throw **PostIdNotRecognisedException**

- VALIDATION - NOT IN PROVIDED FILE - We should make a **checkMessage**() function that makes sure that post content isn't empty of greater than 100 characters, throws **InvalidPostException** if there is a problem

- int **createPost**(String handle, String message) throws HandleNotRecognisedException, InvalidPostException

Checks post content provided with **checkMessage**(message). Uses post constructor to create new post with PostType.ORIGINAL, adds newly created post to posts hashmap

- VALIDATION - NOT IN PROVIDED FILE - We should make a **isPostEndorsement**() method to check if a post can actually be endorsed, throws **NotActionablePostException** if the post type is PostType.ENDORSEMENT

- int **endorsePost**(String handle, int id) throws HandleNotRecognisedException, PostIDNotRecognisedException, NotActionablePostException

Checks if post can be endorsed using isPostEndorsement(id). Uses post constructor to create new post with PostType.ENDORSEMENT, sets 'parents' attribute to the post being endorsed, sets post content to the contents of the parent post, adds newly created post to posts hashmap, uses parentPost.addEndorsement() to add the endorsement post object to the endorsed posts endorsements arraylist

- int **commentPost**(String handle, int id, String message) throws HandleNotRecognisedException, PostIDNotRecognisedException, NotActionablePostException, InvalidPostException;

Uses post constructor to create new post with PostType.COMMENT, sets 'parents' attribute to the post being commented on, sets post content to the message provided, adds newly created post to posts hashmap, uses parentPost.addcomment() to add the comment post object to the parent post's comments arraylist

- void **deletePost**(int id) throws PostIDNotRecognisedException

Removes specified post from posts hashmap

- String **showIndividualPost**(int id) throws PostIDNotRecognisedException (returns formated string containing the details of a single post)

Uses findPost() to get post object from hashmap, prints post.tostring

- StringBuilder **showPostChildrenDetails**(int id) throws PostIDNotRecognisedException, NotActionablePostException (shows the details of the current post and all its children posts)

Iteratively runs post.toString() for the parent post and all it's children (and children's children etc.) Makes tree structure out of it all

- int **getMostEndorsedPost**()

```
For each post in posts where PostType = PostType.ORIGINAL:
    int endorsementCount = length(post.getEndorsements) ++
Return post with highest endorsementCount
```

- int **getMostEndorsedAccount**()

```
For each account in accounts:
    int endorsementCount = account.getEndorsementCount
Return account with highest endorsementCount
```

- void **erasePlatform**() (empties this SocialMediaPlatform of its contents and resets all internal counters)

Reset hashmaps, reset counters to 0 delete all objects (not sure how to do that, hopefully it's done when hashmaps are reset?)

- void **savePlatform**(String filename) throws IOException (saves this SocialMediaPlatform's contents into a serialised file, with the filename given in the argument - using serialize module)

Use serialize module to save all data to specified file

- void **loadPlatform**(String filename) throws IOException, ClassNotFoundException (Method should load and replace this SocialMediaPlatform's contents with the serialised contents stored in the file given in the argument

Use serialize module to read data from specified file

IllegalHandleException

Thrown if handle is already in use

InvalidHandleException

Thrown if the new handle is empty, has more than 30 characters, or has white spaces

HandleNotRecognisedException

Thrown if handle is not found on the system

PostIdNotRecognisedException

Thrown when attempting to use a post ID that doesn't exist

InvalidPostException

Thrown if the post is empty or has more than 100 characters.

NotActionablePostException

Thrown if the ID refers to a endorsement post. Endorsement posts are not endorsable.
(Endorsements are not transitive. For instance, if post A is endorsed by post B, and an account wants to endorse B, in fact, the endorsement must refers to A)

Serializable (provided by Java)

A module that allows us to export social media data as bytestream or import another socialmedia bytestream

SocialMediaPlatform.java (extends MiniSocialMediaPlatform.java)

Attributes inherited from MiniSocialMediaPlatform

Methods
- int **createAccount**(String handle, String description) throws IllegalHandleException, InvalidHandleException

Calls account constructor, creates account using provided handle and account description, adds account to accounts hashmap (key - accountID, value - created account object)

- void **removeAccount**(int id) throws AccountIDNotRecognisedException

Removes specified account from the accounts hashmap. All posts and likes also removed

- void **updateAccountDescription**(String handle, String description) throws HandleNotRecognisedException

Search accounts hashmap for matching account, call account.setDescription(description)

- int **getNumberOfAccounts**()

Returns number of accounts in accounts hashmap

- int **getTotalOriginalPosts**()

Iterates through every item in posts hashmap, returns count of posts where post.getType() == PostType.ORIGINAL, make sure deleted posts arent included

- int **getTotalEndorsmentPosts**()

Iterates through every item in posts hashmap, returns count of posts where post.getType() == PostType.ENDORSEMENT, make sure deleted posts arent included

- int **getTotalCommentPosts**()

Iterates through every item in posts hashmap, returns count of posts where post.getType() == PostType.COMMENT, make sure deleted posts arent included

Object classes and their methods

Account class (Account.java)

Attributes:
- ID: int (needed as this number will never change, handle might. Will be easier for posts etc.)
- handle: string
- description: string
- posts: arrayList() of post objects that the account has created
- endorsementCount() : int, called when a post is endorsed, account found with AuthorID

Methods:
- constructor
- setHandle(String newHandle)
- toString()
- setDescription(String newDescription)
- addEndorsement()
- getEndorsementCount()

Post (parent) class (Post.java)

Attributes of Post objects
- PostID: int
- AuthorID: int
- content: String (default value = "")
- type: postType enum
- parents: arrayList(parent1, parent of parent1, etc.) - optional, only if type is comment/endorsement for comments and endorsements
- endorsements: arrayList() of post objects comments: int

Methods:
- constructor
- getContent()
- getType()
- getParents()
- getEndorsements()
- getComments()
- addComment()
- addEndorsement()
- toString()

PostType enum

Values:
- ORIGINAL
- COMMENT
- ENDORSEMENT