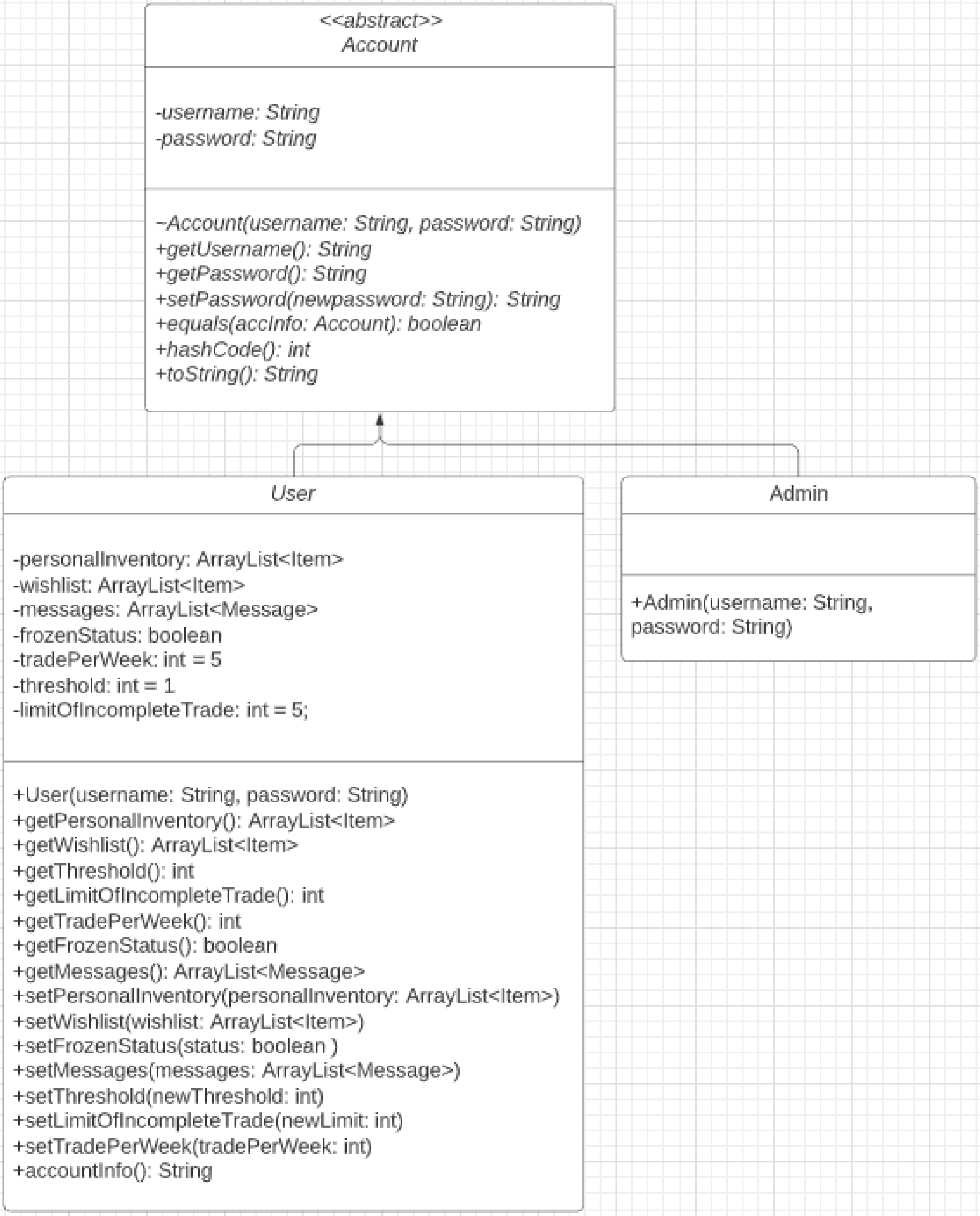
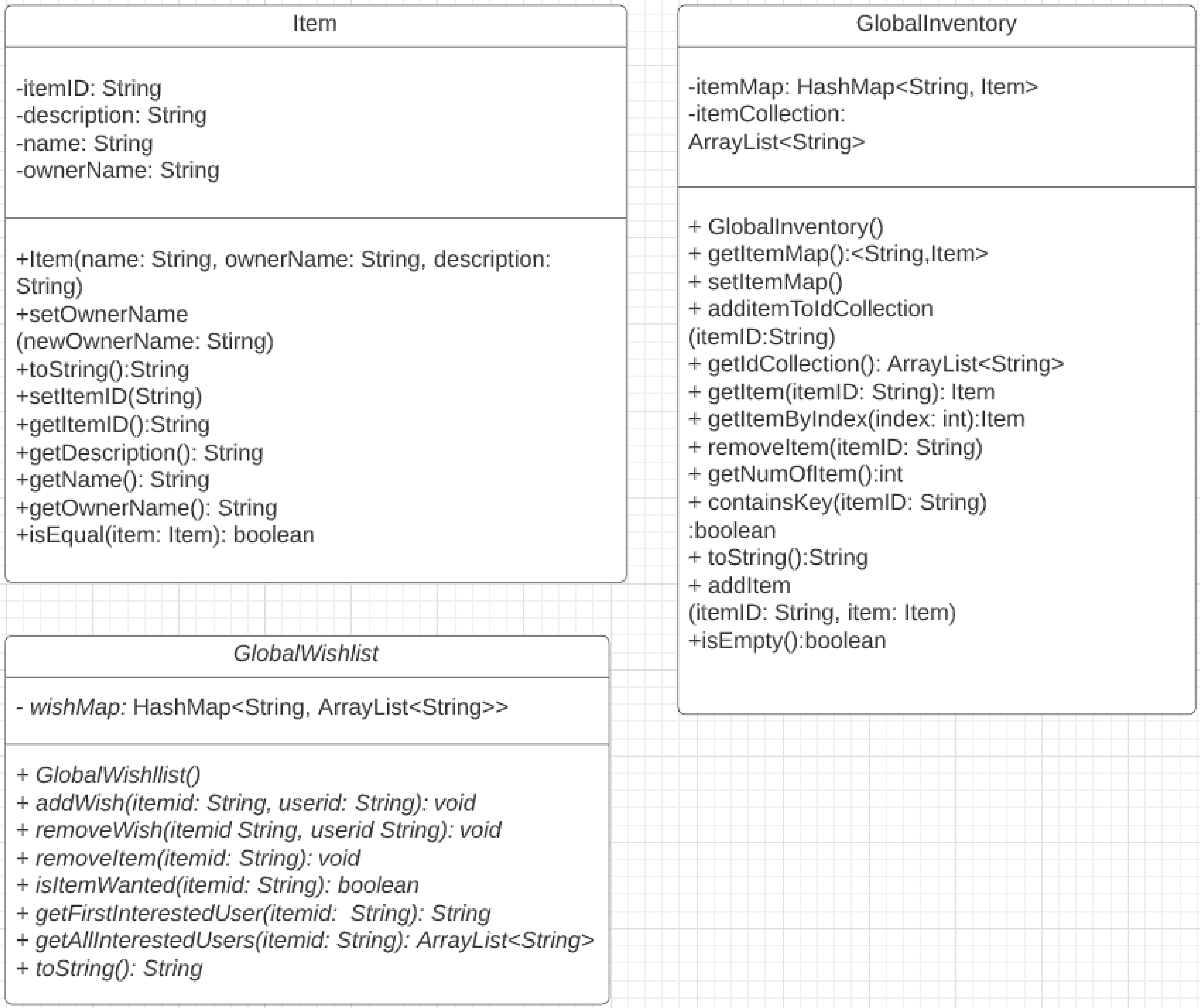
Phase 1 UML Diagram Group 0147

Entities

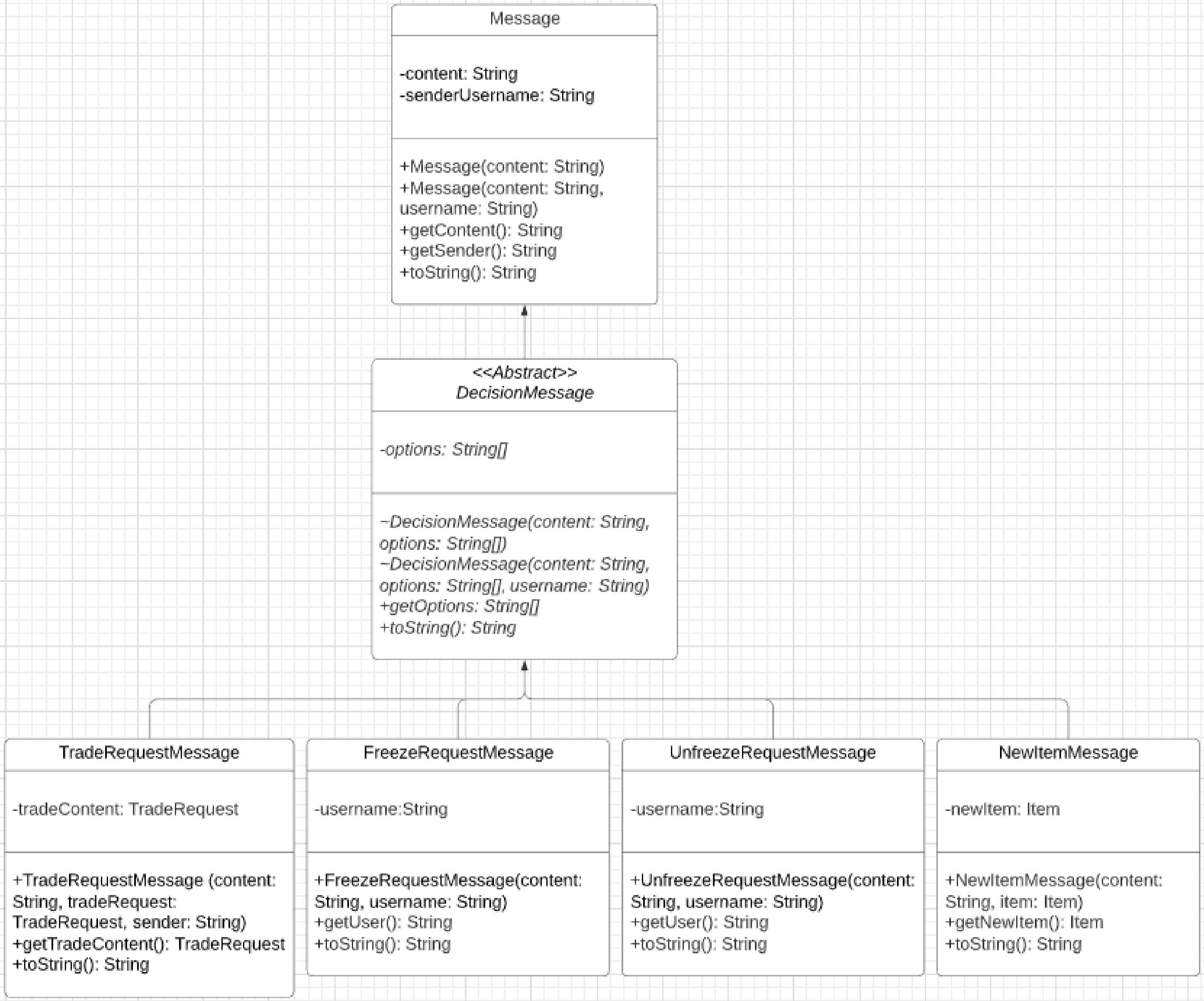

<<abstract>>
Account
-username: String
-password: String
~Account(username: String, password: String)
+getUsername(): String
+getPassword(): String
+setPassword(newpassword: String): String
+equals(accInfo: Account): boolean
+hashCode(): int
+toString(): String
User
-personalInventory: ArrayList<Item>
-wishlist: ArrayList<Item>
-messages: ArrayList<Message>
-frozenStatus: boolean
-tradePerWeek: int = 5
-threshold: int = 1
-limitOfIncompleteTrade: int = 5;
+User(username: String, password: String)
+getPersonalInventory(): ArrayList<Item>
+getWishlist(): ArrayList<Item>
+getThreshold(): int
+getLimitOfIncompleteTrade(): int
+getTradePerWeek(): int
+getFrozenStatus(): boolean
+getMessages(): ArrayList<Message>
+setPersonalInventory(personalInventory: ArrayList<Item>)
+setWishlist(wishlist: ArrayList<Item>)
+setFrozenStatus(status: boolean)
+setMessages(messages: ArrayList<Message>)
+setThreshold(newThreshold: int)
+setLimitOfIncompleteTrade(newLimit: int)
+setTradePerWeek(tradePerWeek: int)
+accountInfo(): String
Admin
+Admin(username: String, password: String)

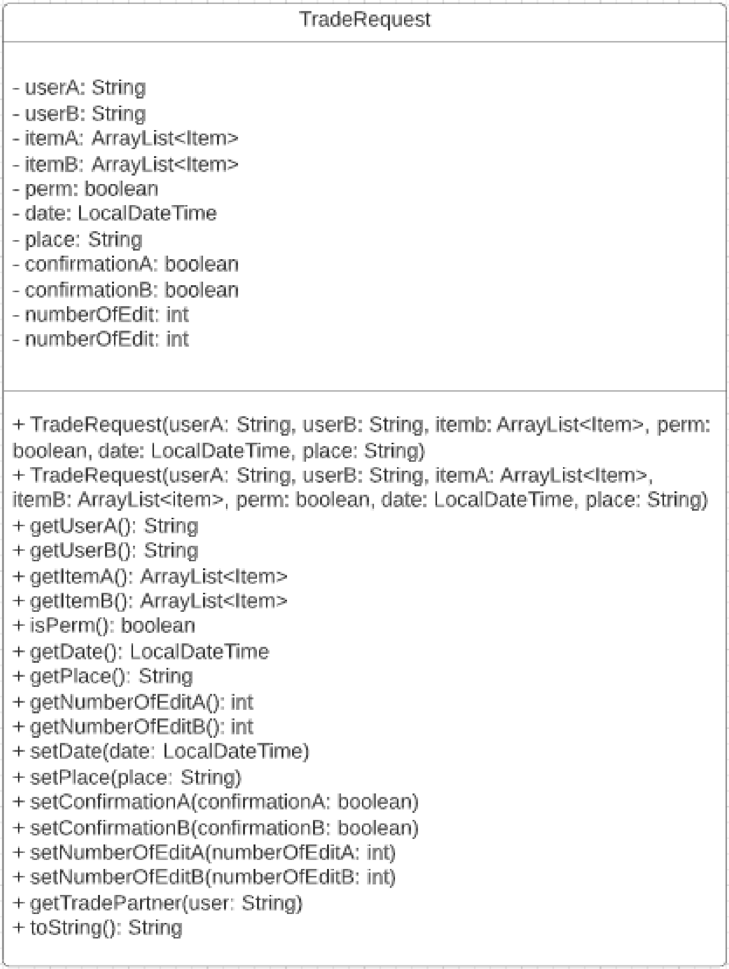


```
Item
-itemID: String
-description: String
-name: String
-ownerName: String

+Item(name: String, ownerName: String, description:
String)
+setOwnerName
(newOwnerName: Stirng)
+toString():String
+setItemID(String)
+getItemID():String
+getDescription(): String
+getName(): String
+getOwnerName(): String
+isEqual(item: Item): boolean
```

```
GlobalInventory
-itemMap: HashMap<String, Item>
-itemCollection:
ArrayList<String>

+ GlobalInventory()
+ getItemMap():<String,Item>
+ setItemMap()
+ additemToIdCollection
(itemID:String)
+ getIdCollection(): ArrayList<String>
+ getItem(itemID: String): Item
+ getItemByIndex(index: int):Item
+ removeItem(itemID: String)
+ getNumOfItem():int
+ containsKey(itemID: String)
:boolean
+ toString():String
+ addItem
(itemID: String, item: Item)
+isEmpty():boolean
```

```
GlobalWishlist
- wishMap: HashMap<String, ArrayList<String>>

+ GlobalWishllist()
+ addWish(itemid: String, userid: String): void
+ removeWish(itemid String, userid String): void
+ removeItem(itemid: String): void
+ isItemWanted(itemid: String): boolean
+ getFirstInterestedUser(itemid:  String): String
+ getAllInterestedUsers(itemid: String): ArrayList<String>
+ toString(): String
```


Message
-content: String
-senderUsername: String
+Message(content: String)
+Message(content: String, username: String)
+getContent(): String
+getSender(): String
+toString(): String
<<Abstract>>
DecisionMessage
-options: String[]
~DecisionMessage(content: String, options: String[])
~DecisionMessage(content: String, options: String[], username: String)
+getOptions: String[]
+toString(): String
TradeRequestMessage
-tradeContent: TradeRequest
+TradeRequestMessage (content: String, tradeRequest: TradeRequest, sender: String)
+getTradeContent(): TradeRequest
+toString(): String
FreezeRequestMessage
-username:String
+FreezeRequestMessage(content: String, username: String)
+getUser(): String
+toString(): String
UnfreezeRequestMessage
-username:String
+UnfreezeRequestMessage(content: String, username: String)
+getUser(): String
+toString(): String
NewItemMessage
-newItem: Item
+NewItemMessage(content: String, item: Item)
+getNewItem(): Item
+toString(): String



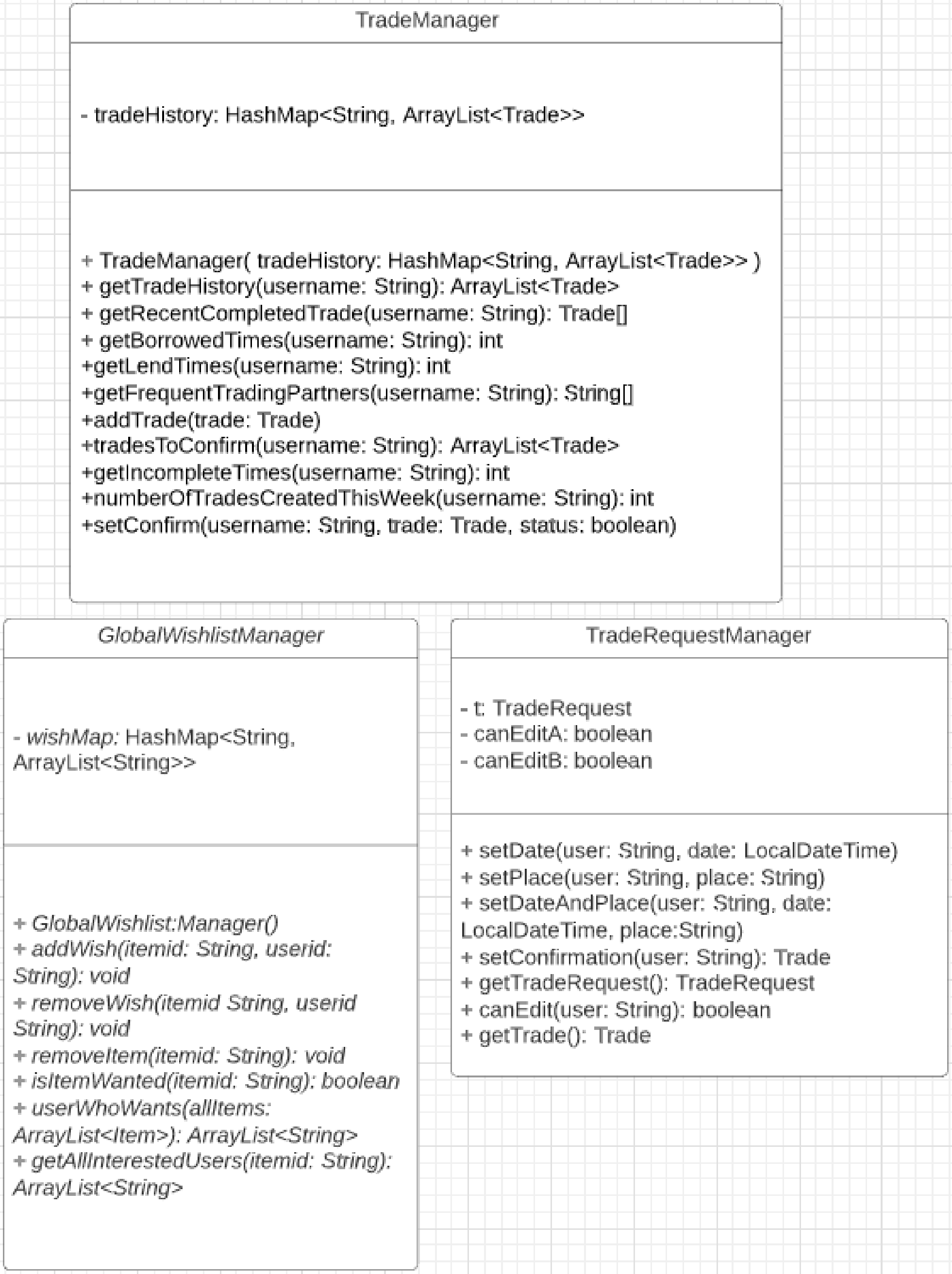
```
TradeRequest

- userA: String
- userB: String
- itemA: ArrayList<Item>
- itemB: ArrayList<Item>
- perm: boolean
- date: LocalDateTime
- place: String
- confirmationA: boolean
- confirmationB: boolean
- numberOfEdit: int
- numberOfEdit: int

+ TradeRequest(userA: String, userB: String, itemb: ArrayList<Item>, perm:
boolean, date: LocalDateTime, place: String)
+ TradeRequest(userA: String, userB: String, itemA: ArrayList<Item>,
itemB: ArrayList<item>, perm: boolean, date: LocalDateTime, place: String)
+ getUserA(): String
+ getUserB(): String
+ getItemA(): ArrayList<Item>
+ getItemB(): ArrayList<Item>
+ isPerm(): boolean
+ getDate(): LocalDateTime
+ getPlace(): String
+ getNumberOfEditA(): int
+ getNumberOfEditB(): int
+ setDate(date: LocalDateTime)
+ setPlace(place: String)
+ setConfirmationA(confirmationA: boolean)
+ setConfirmationB(confirmationB: boolean)
+ setNumberOfEditA(numberOfEditA: int)
+ setNumberOfEditB(numberOfEditB: int)
+ getTradePartner(user: String)
+ toString(): String
```

Use Cases

UserManager

- userManager: HashMap<String, User>

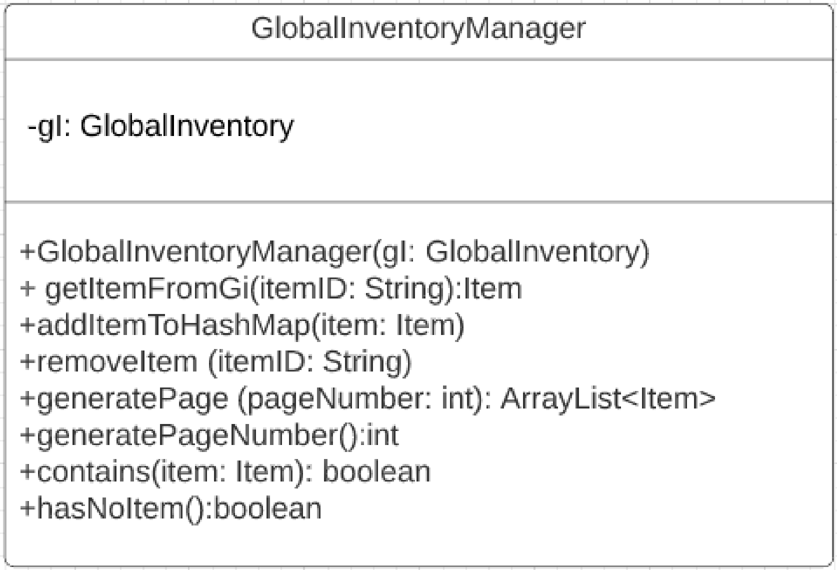
+ UserManager(allUsers: HashMap<String, User>)
+ login(username: String, password: String) : boolean
+ createNewUser(username: String, password: String, tradeHistory: HashMap<String,
ArrayList<Trade>>) : boolean
+ changePassword(username: String, password: String) : void
+ isValidUser(username: String) : boolean
+ toString() : String
+ getCanTrade(user: String, borrowedTimes: int, lendTimes: int, numIncomplete: int,
numTradesMadeThisWeek: int) : boolean
+ getCanTradesIgnoreBorrowsLoans(username: String, numIncomplete: int,
numTradesMadeThisWeek: int) : boolean
+ getUserWishlist(user: String) : ArrayList<Item>
+ getUserInventory(user: String) : ArrayList<Item>
+ getUserMessages(username: String) : ArrayList<Message>
+ setUserMessages(username: String, message: ArrayList<Message>) : void
+ getUserIncompleteTrades(username: String) : int
+ getTradesPerWeekForUser(username: String) : int
+ getUserInfo(username: String) : String
+ getUserFrozenStatus(username: String) : boolean
+ getUserThreshold(username: String) : int
+ addUserMessage(username: String, message: Message) : void
+ removeUserMessage(username: String, message: Message) : void
+ removeItemFromUserInventory(user: String, itemID: String) : void
+ removeItemFromUserWishlist(user: String, itemID: String) : void
+ removeFromMultipleUsersWishlists(users: ArrayList<String>, itemID: String) : void
+ addItemToUserInventory(item: Item, username: String) : void
+ addItemToWishlist(username: String, item: Item) : void
+ createNewItem(username: String, itemName: String, description: String) : NewItemMessage
+ createUserMessage(username: String, content: String) : void
+ createAndAddNewTradeRequestMessage(recipient: String, messageContent: String,
tradeRequest: TradeRequest, senderUsername: String) : void
+ freezeUserAccount(username: String, freezeStatus: boolean) : void
+ freezeUserAccount(username: String) : void
+ setWeeklyTrades(newTradesPerWeek: int) : void
+ setWeeklyTradesForOneUser(username: String, newTradesPerWeek: int) : void
+ removeUser(username: String) : void
+ setLimitOfIncompleteTrades(newLimit: int) : void
+ setLimitOfIncompleteTradesForOneUser(username: String, newLimit: int) : void
+ setNewThreshold(newThreshold: int) : void
+ setNewThresholdForOneUser(username: String, newThreshold: int) : void



```
TradeManager
--------------------------------------------------
- tradeHistory: HashMap<String, ArrayList<Trade>>
--------------------------------------------------
+ TradeManager( tradeHistory: HashMap<String, ArrayList<Trade>> )
+ getTradeHistory(username: String): ArrayList<Trade>
+ getRecentCompletedTrade(username: String): Trade[]
+ getBorrowedTimes(username: String): int
+getLendTimes(username: String): int
+getFrequentTradingPartners(username: String): String[]
+addTrade(trade: Trade)
+tradesToConfirm(username: String): ArrayList<Trade>
+getIncompleteTimes(username: String): int
+numberOfTradesCreatedThisWeek(username: String): int
+setConfirm(username: String, trade: Trade, status: boolean)
```

```
GlobalWishlistManager
--------------------------------------------------
- wishMap: HashMap<String,
ArrayList<String>>
--------------------------------------------------
+ GlobalWishlist:Manager()
+ addWish(itemid: String, userid:
String): void
+ removeWish(itemid String, userid
String): void
+ removeItem(itemid: String): void
+ isItemWanted(itemid: String): boolean
+ userWhoWants(allItems:
ArrayList<Item>): ArrayList<String>
+ getAllInterestedUsers(itemid: String):
ArrayList<String>
```

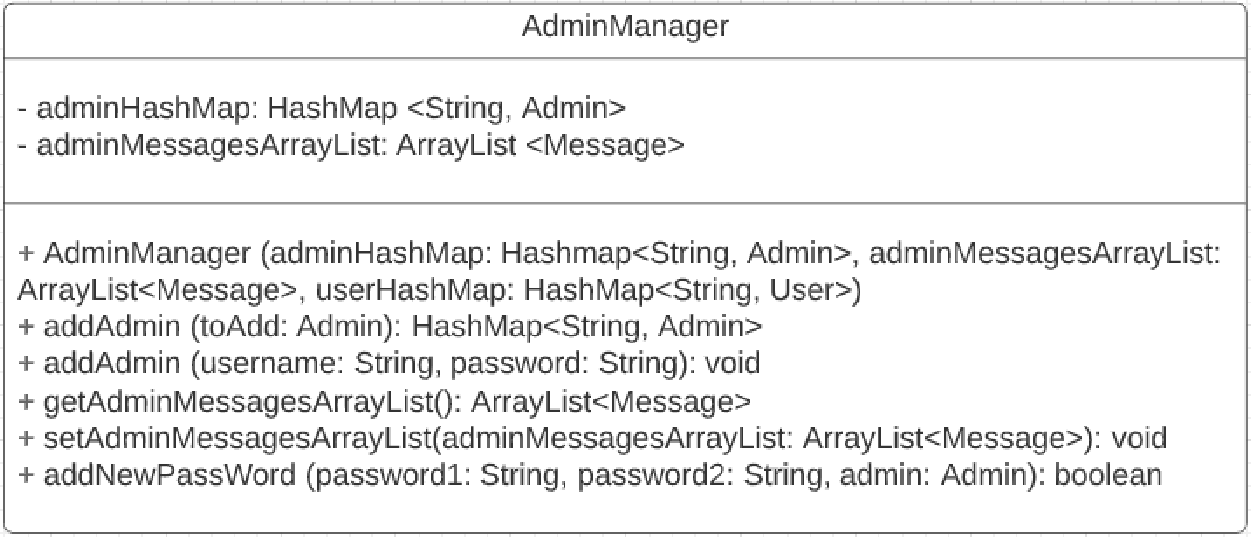
```
TradeRequestManager
--------------------------------------------------
- t: TradeRequest
- canEditA: boolean
- canEditB: boolean
--------------------------------------------------
+ setDate(user: String, date: LocalDateTime)
+ setPlace(user: String, place: String)
+ setDateAndPlace(user: String, date:
LocalDateTime, place:String)
+ setConfirmation(user: String): Trade
+ getTradeRequest(): TradeRequest
+ canEdit(user: String): boolean
+ getTrade(): Trade
```



GlobalInventoryManager

-gI: GlobalInventory

+GlobalInventoryManager(gI: GlobalInventory)
+ getItemFromGi(itemID: String):Item
+addItemToHashMap(item: Item)
+removeItem (itemID: String)
+generatePage (pageNumber: int): ArrayList<Item>
+generatePageNumber():int
+contains(item: Item): boolean
+hasNoItem():boolean

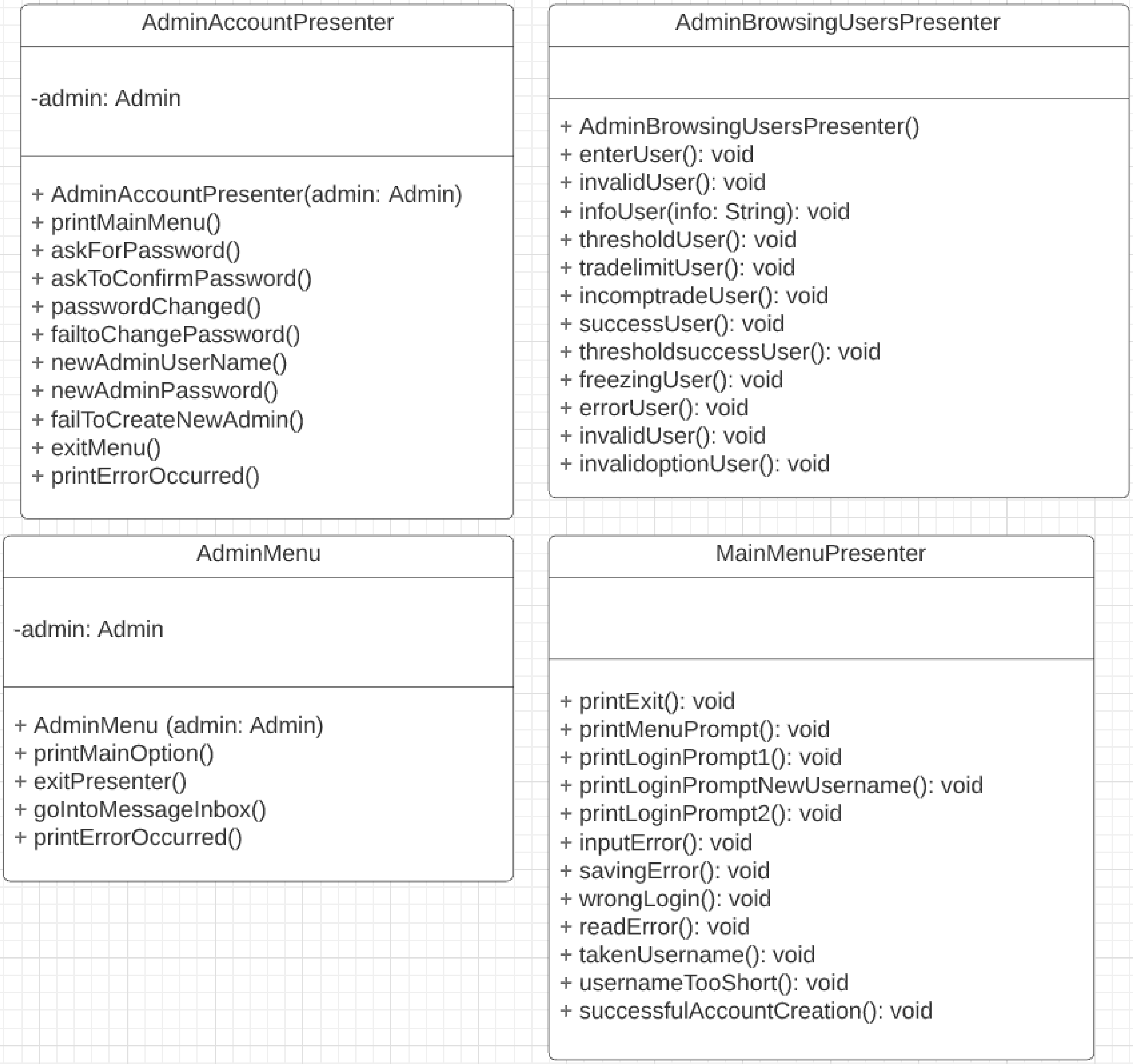


AdminManager

- adminHashMap: HashMap <String, Admin>
- adminMessagesArrayList: ArrayList <Message>

+ AdminManager (adminHashMap: Hashmap<String, Admin>, adminMessagesArrayList: ArrayList<Message>, userHashMap: HashMap<String, User>)
+ addAdmin (toAdd: Admin): HashMap<String, Admin>
+ addAdmin (username: String, password: String): void
+ getAdminMessagesArrayList(): ArrayList<Message>
+ setAdminMessagesArrayList(adminMessagesArrayList: ArrayList<Message>): void
+ addNewPassWord (password1: String, password2: String, admin: Admin): boolean

Presenters

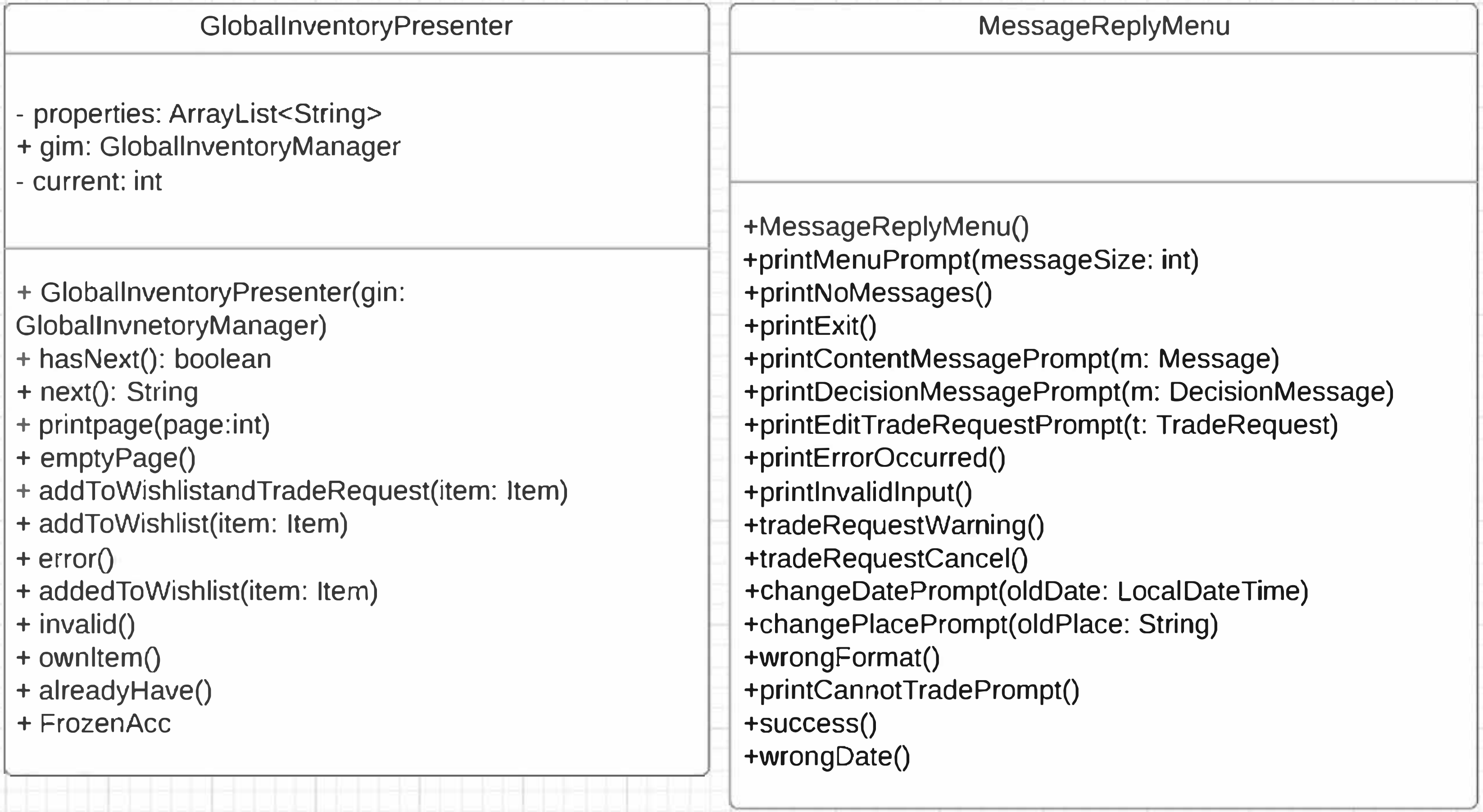


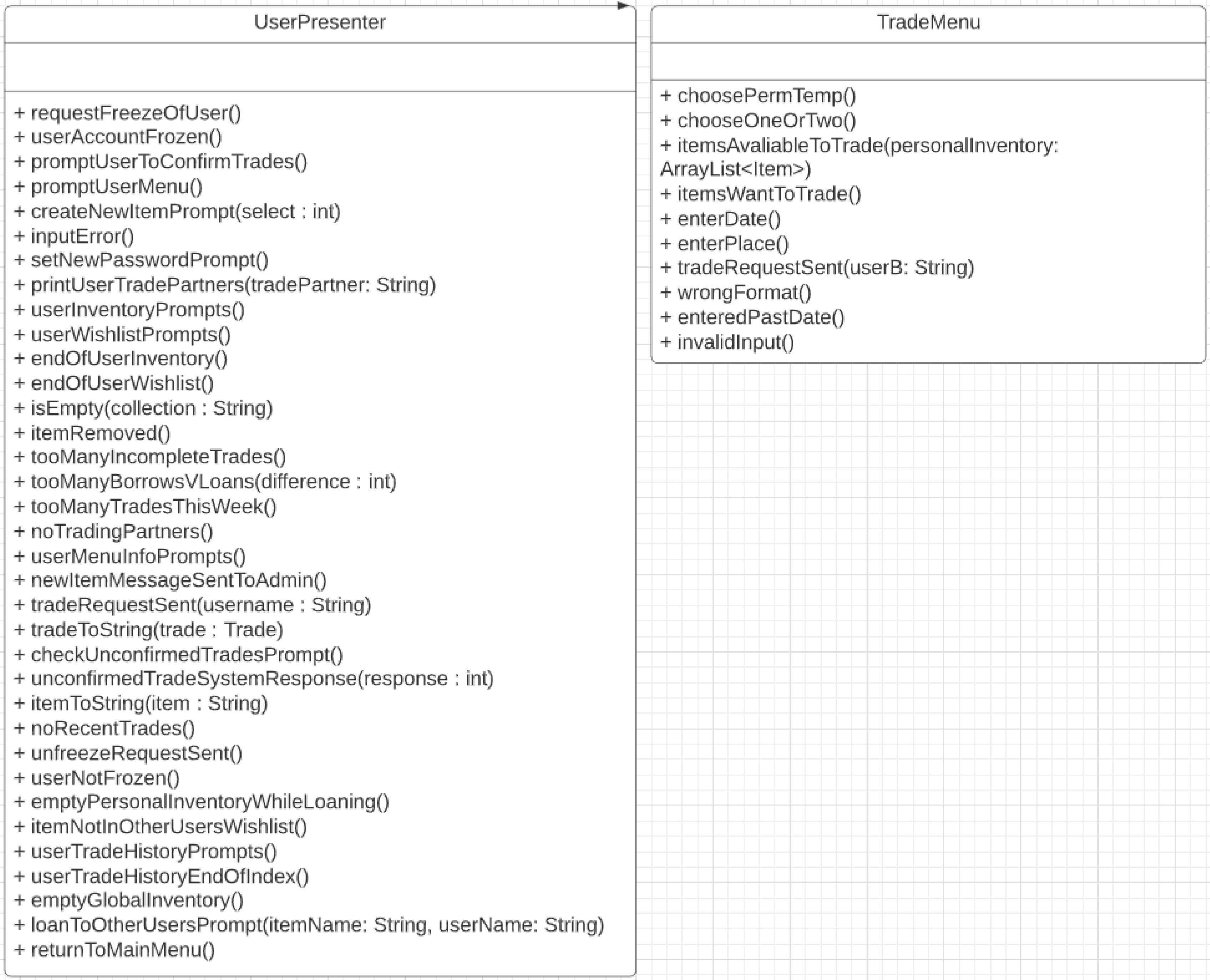
```
AdminAccountPresenter
-------------------------------------------
-admin: Admin
-------------------------------------------
+ AdminAccountPresenter(admin: Admin)
+ printMainMenu()
+ askForPassword()
+ askToConfirmPassword()
+ passwordChanged()
+ failtoChangePassword()
+ newAdminUserName()
+ newAdminPassword()
+ failToCreateNewAdmin()
+ exitMenu()
+ printErrorOccurred()
```

```
AdminBrowsingUsersPresenter
-------------------------------------------

-------------------------------------------
+ AdminBrowsingUsersPresenter()
+ enterUser(): void
+ invalidUser(): void
+ infoUser(info: String): void
+ thresholdUser(): void
+ tradelimitUser(): void
+ incomptradeUser(): void
+ successUser(): void
+ thresholdsuccessUser(): void
+ freezingUser(): void
+ errorUser(): void
+ invalidUser(): void
+ invalidoptionUser(): void
```

```
AdminMenu
-------------------------------------------
-admin: Admin
-------------------------------------------
+ AdminMenu (admin: Admin)
+ printMainOption()
+ exitPresenter()
+ goIntoMessageInbox()
+ printErrorOccurred()
```

```
MainMenuPresenter
-------------------------------------------

-------------------------------------------
+ printExit(): void
+ printMenuPrompt(): void
+ printLoginPrompt1(): void
+ printLoginPromptNewUsername(): void
+ printLoginPrompt2(): void
+ inputError(): void
+ savingError(): void
+ wrongLogin(): void
+ readError(): void
+ takenUsername(): void
+ usernameTooShort(): void
+ successfulAccountCreation(): void
```


GlobalInventoryPresenter
- properties: ArrayList<String>
+ gim: GlobalInventoryManager
- current: int
+ GlobalInventoryPresenter(gin: GlobalInvnetoryManager)
+ hasNext(): boolean
+ next(): String
+ printpage(page:int)
+ emptyPage()
+ addToWishlistandTradeRequest(item: Item)
+ addToWishlist(item: Item)
+ error()
+ addedToWishlist(item: Item)
+ invalid()
+ ownItem()
+ alreadyHave()
+ FrozenAcc
MessageReplyMenu
+MessageReplyMenu()
+printMenuPrompt(messageSize: int)
+printNoMessages()
+printExit()
+printContentMessagePrompt(m: Message)
+printDecisionMessagePrompt(m: DecisionMessage)
+printEditTradeRequestPrompt(t: TradeRequest)
+printErrorOccurred()
+printInvalidInput()
+tradeRequestWarning()
+tradeRequestCancel()
+changeDatePrompt(oldDate: LocalDateTime)
+changePlacePrompt(oldPlace: String)
+wrongFormat()
+printCannotTradePrompt()
+success()
+wrongDate()



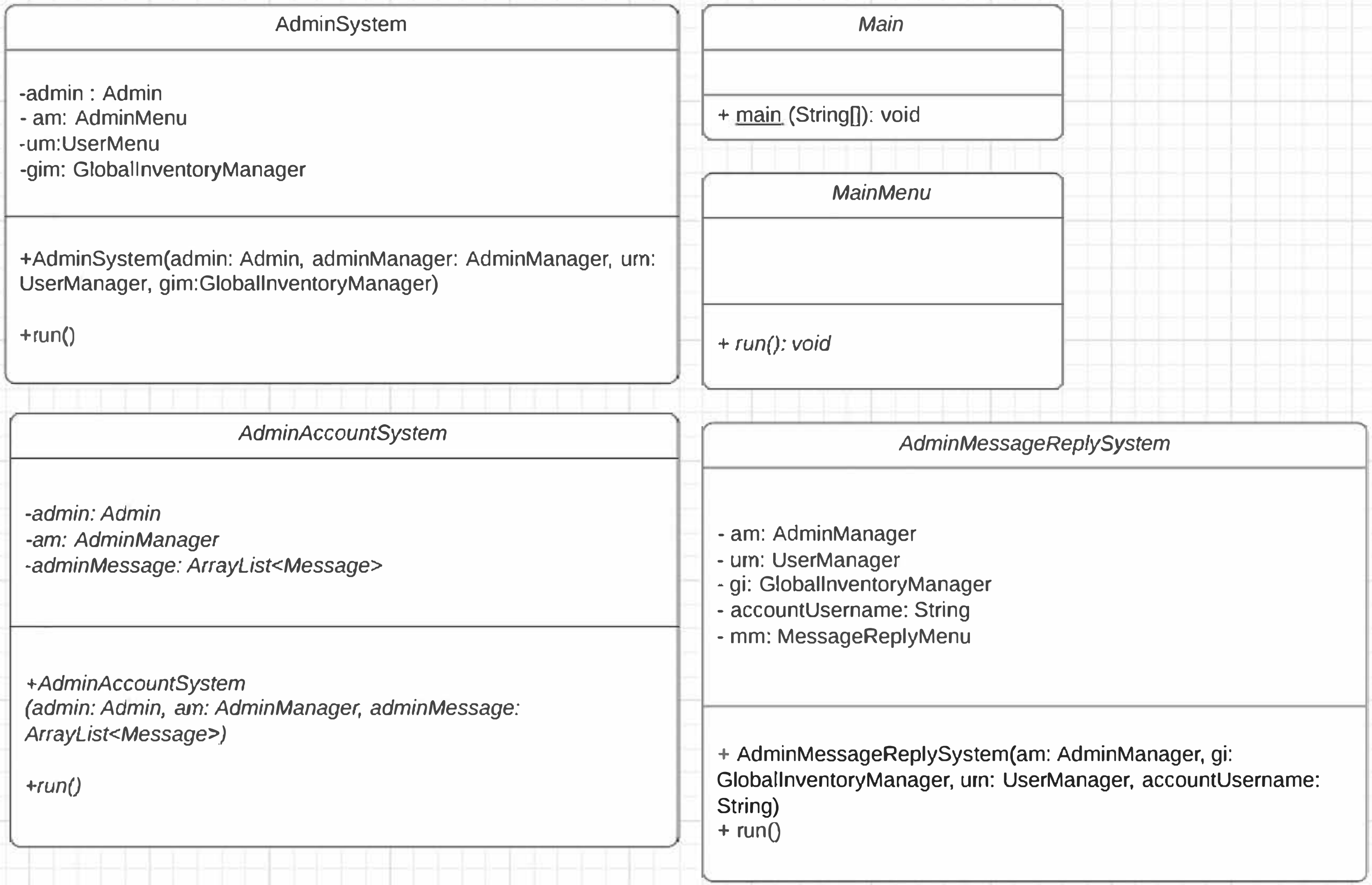
UserPresenter

+ requestFreezeOfUser()
+ userAccountFrozen()
+ promptUserToConfirmTrades()
+ promptUserMenu()
+ createNewItemPrompt(select : int)
+ inputError()
+ setNewPasswordPrompt()
+ printUserTradePartners(tradePartner: String)
+ userInventoryPrompts()
+ userWishlistPrompts()
+ endOfUserInventory()
+ endOfUserWishlist()
+ isEmpty(collection : String)
+ itemRemoved()
+ tooManyIncompleteTrades()
+ tooManyBorrowsVLoans(difference : int)
+ tooManyTradesThisWeek()
+ noTradingPartners()
+ userMenuInfoPrompts()
+ newItemMessageSentToAdmin()
+ tradeRequestSent(username : String)
+ tradeToString(trade : Trade)
+ checkUnconfirmedTradesPrompt()
+ unconfirmedTradeSystemResponse(response : int)
+ itemToString(item : String)
+ noRecentTrades()
+ unfreezeRequestSent()
+ userNotFrozen()
+ emptyPersonalInventoryWhileLoaning()
+ itemNotInOtherUsersWishlist()
+ userTradeHistoryPrompts()
+ userTradeHistoryEndOfIndex()
+ emptyGlobalInventory()
+ loanToOtherUsersPrompt(itemName: String, userName: String)
+ returnToMainMenu()

TradeMenu

+ choosePermTemp()
+ chooseOneOrTwo()
+ itemsAvaliableToTrade(personalInventory: ArrayList<Item>)
+ itemsWantToTrade()
+ enterDate()
+ enterPlace()
+ tradeRequestSent(userB: String)
+ wrongFormat()
+ enteredPastDate()
+ invalidInput()

Controllers


AdminSystem
-admin : Admin
- am: AdminMenu
-um:UserMenu
-gim: GlobalInventoryManager
+AdminSystem(admin: Admin, adminManager: AdminManager, um: UserManager, gim:GlobalInventoryManager)
+run()
Main
+ main (String[]): void
MainMenu
+ run(): void
AdminAccountSystem
-admin: Admin
-am: AdminManager
-adminMessage: ArrayList<Message>
+AdminAccountSystem (admin: Admin, am: AdminManager, adminMessage: ArrayList<Message>)
+run()
AdminMessageReplySystem
- am: AdminManager
- um: UserManager
- gi: GlobalInventoryManager
- accountUsername: String
- mm: MessageReplyMenu
+ AdminMessageReplySystem(am: AdminManager, gi: GlobalInventoryManager, um: UserManager, accountUsername: String)
+ run()

UserMenu

- currUser: String
- adminMessages: ArrayList<Message>
- userPresenter: UserPresenter
- userManager: UserManager
- globalInventoryManager: GlobalInventoryManager
- globalWishlistManager: GlobalWishlistManager
- tradeManager: TradeManager

+ UserMenu(currUser: String, userManager: UserManager, tradeManager: TradeManager, globalInventoryManager: GlobalInventoryManager, globalWishlistManager: GlobalWishlistManager, adminMessages: ArrayList<Message>)
+ run()

TradeController

- input: Scanner
- tradeMenu: TradeMenu
- date: LocalDateTime
- allUsers: UserManager
- tradeType: String
- done: boolean
- tradeRequest: TradeRequest

+ TradeController(allUser: UserManager)
+ runFromLoan(itemsToTrade: ArrayList<Item>, userA: String, userB: String)
+ run(itemsToTradeB: ArrayList<Item>, userB: String)

AdminBrowsingUsers

- user: UserManager
- browse: AdminBrowsingUsersPresenter

+ AdminBrowsingUsers(system: UserManager)
+ start(): void

UserMessageReplySystem

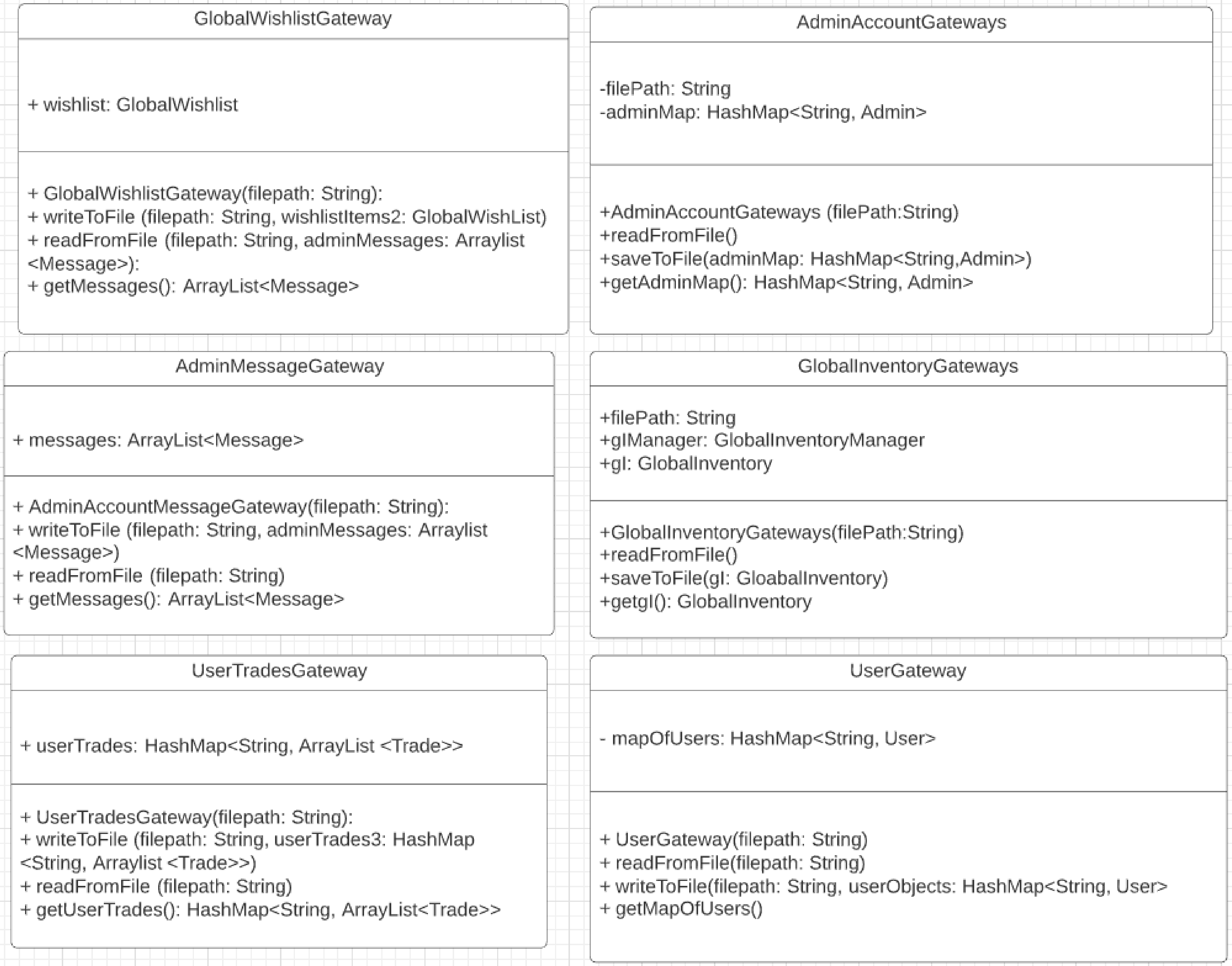
- um: UserManager
- gi: GlobalInventoryManager
- tm: TradeManager
- accountUsername: String
- mm: MessageReplyMenu

+ UserMessageReplySystem(um: UserManager, gi: GlobalInventoryManager, tm: TradeManager, accountUsername: String)
+ run()

GlobalInventoryController

+run(gim: GlobalInventoryManager, UM: UserManager, user: String, TM: TradeManager, GW: GlobalWishlistManager): void

Gateways



GlobalWishlistGateway

+ wishlist: GlobalWishlist

+ GlobalWishlistGateway(filepath: String):
+ writeToFile (filepath: String, wishlistItems2: GlobalWishList)
+ readFromFile (filepath: String, adminMessages: Arraylist <Message>):
+ getMessages(): ArrayList<Message>

AdminAccountGateways

-filePath: String
-adminMap: HashMap<String, Admin>

+AdminAccountGateways (filePath:String)
+readFromFile()
+saveToFile(adminMap: HashMap<String,Admin>)
+getAdminMap(): HashMap<String, Admin>

AdminMessageGateway

+ messages: ArrayList<Message>

+ AdminAccountMessageGateway(filepath: String):
+ writeToFile (filepath: String, adminMessages: Arraylist <Message>)
+ readFromFile (filepath: String)
+ getMessages(): ArrayList<Message>

GlobalInventoryGateways

+filePath: String
+glManager: GlobalInventoryManager
+gl: GlobalInventory

+GlobalInventoryGateways(filePath:String)
+readFromFile()
+saveToFile(gl: GloabalInventory)
+getgl(): GlobalInventory

UserTradesGateway

+ userTrades: HashMap<String, ArrayList <Trade>>

+ UserTradesGateway(filepath: String):
+ writeToFile (filepath: String, userTrades3: HashMap <String, Arraylist <Trade>>)
+ readFromFile (filepath: String)
+ getUserTrades(): HashMap<String, ArrayList<Trade>>

UserGateway

- mapOfUsers: HashMap<String, User>

+ UserGateway(filepath: String)
+ readFromFile(filepath: String)
+ writeToFile(filepath: String, userObjects: HashMap<String, User>
+ getMapOfUsers()