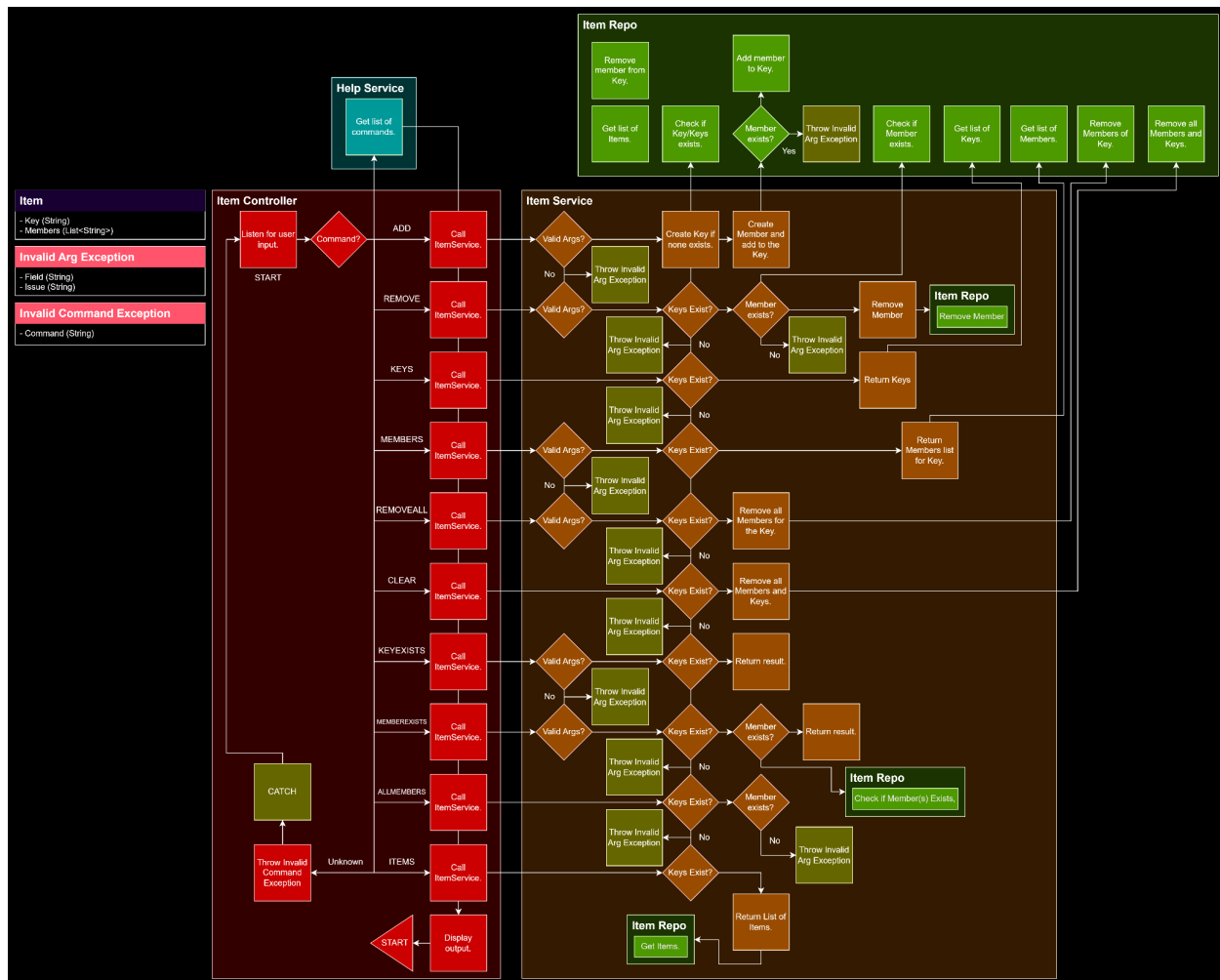


Tech Design

Problem

As a developer, I need to create an application that can store members within a key, value system accessible via a command prompt interface.

Visual Aid



Notes

- Technologies
 - Java
 - Lombok

- No UI required.
 - No database required.
- Purpose
 - Application to add, remove, and lookup members within a key, value system.
 - Users can:
 - Add members to keys. (ADD <KEY> <MEMBER>)
 - Remove members from keys. (REMOVE <KEY> <MEMBER>)
 - Lookup a list of keys. (KEYS)
 - Lookup members of a particular key. (MEMBERS <KEY>)
 - Remove all members from a key. (REMOVEALL <KEY>)
 - Clear all members and keys. (CLEAR)
 - Check if a key exists. (KEYEXISTS <KEY>)
 - Check if a member exists within a key. (MEMBEREXISTS <KEY> <MEMBER>)
 - Get all members from all keys. (ALLMEMBERS)
 - Retrieve a list of all “items” (key/values within the system). (ITEMS)
- Constraints
 - Due to time constraints, testing was left out from the 1.0.0 build.
 - The classes are still designed around test driven development, though. Meaning that implementing testing would be fairly straight forward.

Solution

- Preface
 - As the position in question and my prior experience leans towards backend experience, the approach used for this project is to structure the application like a backend API.
 - The DB component in this case will be substituted with a class called “ItemRepository.java” to simulate a DB that the API would interface with.
- Controller
 - A central controller called “ItemController.java” will handle the following:
 - Prompting the user for input.
 - Parsing user input and performing basic validation.
 - Calling necessary services.
 - Handling any exceptions.
- Help Service
 - As an artifact of the limitations of this project, a “HelpService.java” class will be created to handle providing the user with input assistance.
- Item Service
 - An “ItemService.java” class will be created to handle processed requests from the “ItemController.java” class.
 - More specific validation for the individual requests will be handled in the services.
- Item Repository

- An “ItemRepository.java” class will stand in for the DB component that will handle data access and basic data validation.