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CSE 5322: Software Design Patterns

Homework 2

1. Expanded Use Case

UC: Manage Item	
Pre-condition: The application is running.	
Actor: User	System: HW2 application
	(0) System displays the HW2 GUI.
(1) TUCBW the user clicking on the add button.	(2) The system launches a dialog box with text fields and buttons.
(3) The user enters the item ID and content in the dialogue box, and then clicks OK button.	*(4) The system adds the item to the table.
(5) The user selects an item to delete by clicking on the item if the table is not empty.	(6) The system highlights the item to delete in blue.
(7) The user clicks on the delete button.	*(8) The system deletes the selected item.
(9) The user clicks on the undo button.	*(10) The system undo's the last action made by the user.
(11) The user clicks on the redo button.	*(12) The system redo's the action that was undone by the user earlier.
(13) TUCEW the user managing the items.	
Post-condition: None	

2. Scenario

3) The user enters the item ID and content in the dialogue box, and then clicks OK button.
4.1) The Items GUI adds item with the Items Controller using the Item object.
4.2) The Items Controller creates a new command in Items Controller.
4.3) The Items Controller updates history with the command in Items Controller.
4.4) The Items Controller adds the object item to the table model in Items Controller.
4.5) The Items Controller returns the table model to Items GUI.
4.6) The Items GUI refreshes the table Model in Items GUI.
4.7) The system adds the item to the table.

7) The user clicks on the delete button.
8.1) The Items GUI deletes the item with Items Controller using the selected index.
8.2) The Items Controller creates a new command in Items Controller.
8.2) The Items Controller updates history with the command in Items Controller.
8.3) The Items Controller removes the index in the table model in Items Controller.
8.4) The Items Controller returns the table model to Items GUI.
8.5) The Items GUI refreshes the table model in items GUI.
8.6) The system deletes the selected item.

9) The user clicks on the undo button.
10.1) The Items GUI undo's the action with Items Controller.
10.2) The Items Controller gets the command from the history of commands.
10.3) The Items Controller undo's the Command.
10.4) The Command changes the table model in Items GUI at the index and with item depending on the action that was taken last.
10.5) The Concrete Command returns the table model to Items Controller
10.6) The Items Controller returns the table model to Items GUI.
10.7) The Items GUI refreshes the table model in Items GUI.
10.8) The system undo's the last command made by the user.

11) The user clicks on the redo button.
12.1) The Items GUI redo's the action with Items Controller.
12.2) The Items Controller gets the command from the history of commands.
12.3) The Items Controller redo's the Command.
12.4) The Command changes the table model in Items GUI at the index and with item depending on the action that was taken last.
12.5) The Concrete Command returns the table model to the Items Controller.
12.6) The Items Controller returns the table model to Items GUI.
12.7) The Items GUI refreshes the table model in Items GUI.
12.8) The system redo's the last command made by the user.

3. Scenario Table

	Subject	Subject action	Other Data/Objects	Object acted upon
3)	User	Clicks OK button	item	Items GUI
4.1)	Items GUI	adds item	item	Items Controller
4.2)	Items Controller	creates	command	Items controller
4.3)	Items Controller	Updates history	command	Items Controller
4.4)	Items Controller	add	item, table model	Items Controller
4.5)	Items Controller	returns	Table model	Items GUI
4.6)	Items GUI	refreshes	Table model	Items GUI
4.7)	Items GUI	adds	item	User

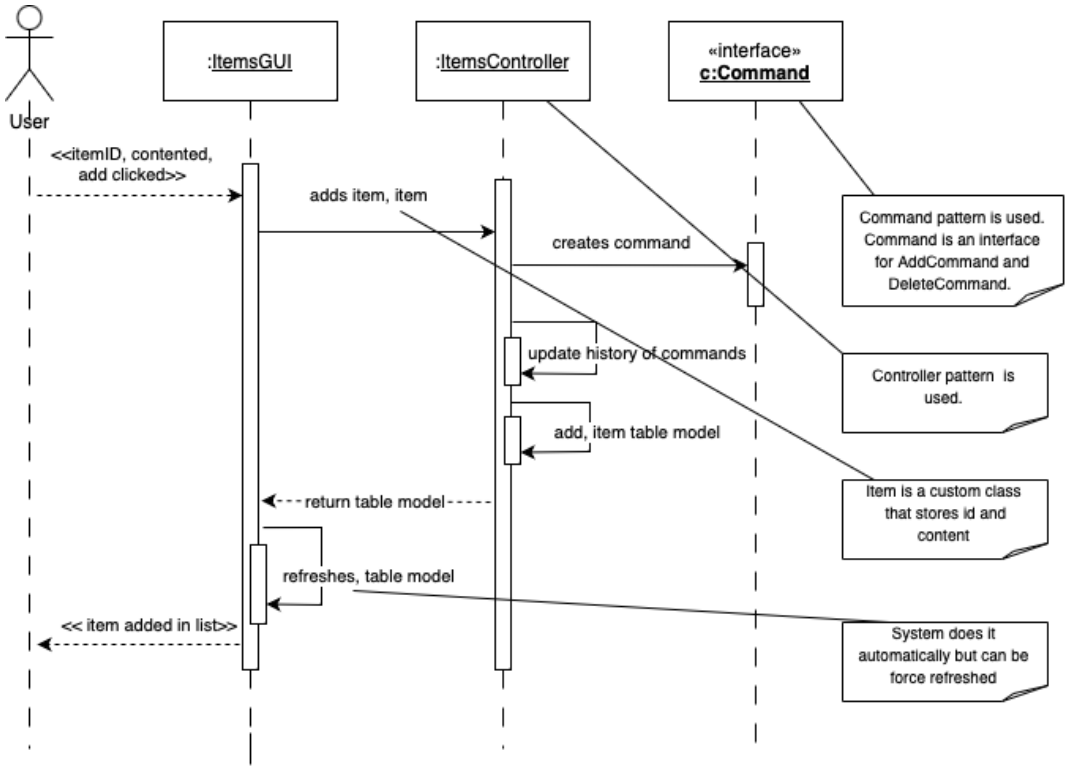
	Subject	Subject action	Other Data/Objects	Object acted upon
7)	User	Clicks delete button	index	Items GUI
8.1)	Items GUI	deletes item	item	Items Controller
8.2)	Items Controller	creates	command	Items Controller
8.3)	Items Controller	Updates history	command	Items Controller
8.4)	Items Controller	removes	index, table model	Items Controller
8.5)	Items Controller	returns	Table model	Items GUI
8.6)	Items GUI	Refreshes	Table model	Items GUI
8.7)	Items GUI	deletes	item	User

	Subject	Subject action	Other Data/Objects	Object acted upon
9)	User	Clicks undo button		Items GUI
10.1)	Items GUI	undo		Items Controller
10.2)	Items Controller	gets	command	Items Controller
10.3)	Items Controller	undo	command	Command
10.4)	Command	changes	Table model, item	Command
10.5)	Command	returns	Table model	Items Controller
10.6)	Items Controller	returns	Table model	Items GUI
10.7)	Items GUI	refreshes	Table model	Items GUI
10.8)	Items GUI	Undo's	Last command	User

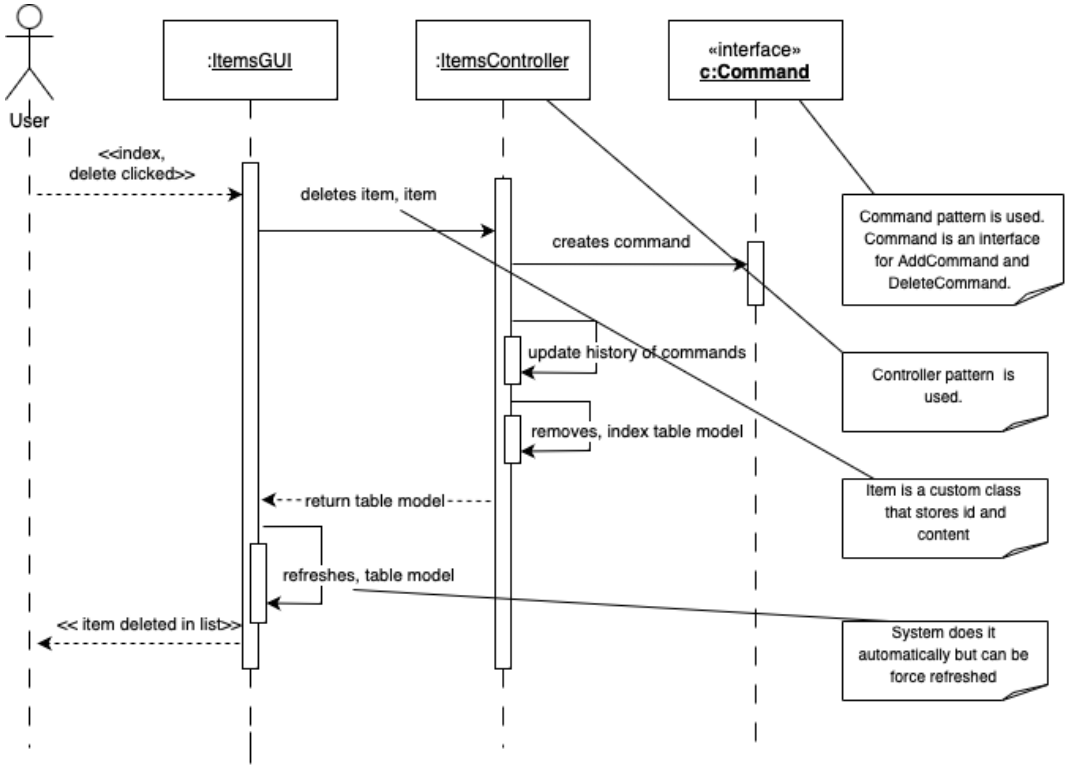
	Subject	Subject action	Other Data/Objects	Object acted upon
11)	User	Clicks redo button		Items GUI
12.1)	Items GUI	redo		Items Controller
12.2)	Items Controller	gets	command	Items Controller
12.3)	Items Controller	redo	command	Command
12.4)	Command	changes	Table model, item	Command
12.5)	Command	returns	Table model	Items Controller
12.6)	Items Controller	returns	Table model	Items GUI
12.7)	Items GUI	refreshes	Table model	Items GUI
12.8)	Items GUI	redo's	Last command	User

4. Informal Sequence Diagram

Add Button Clicked

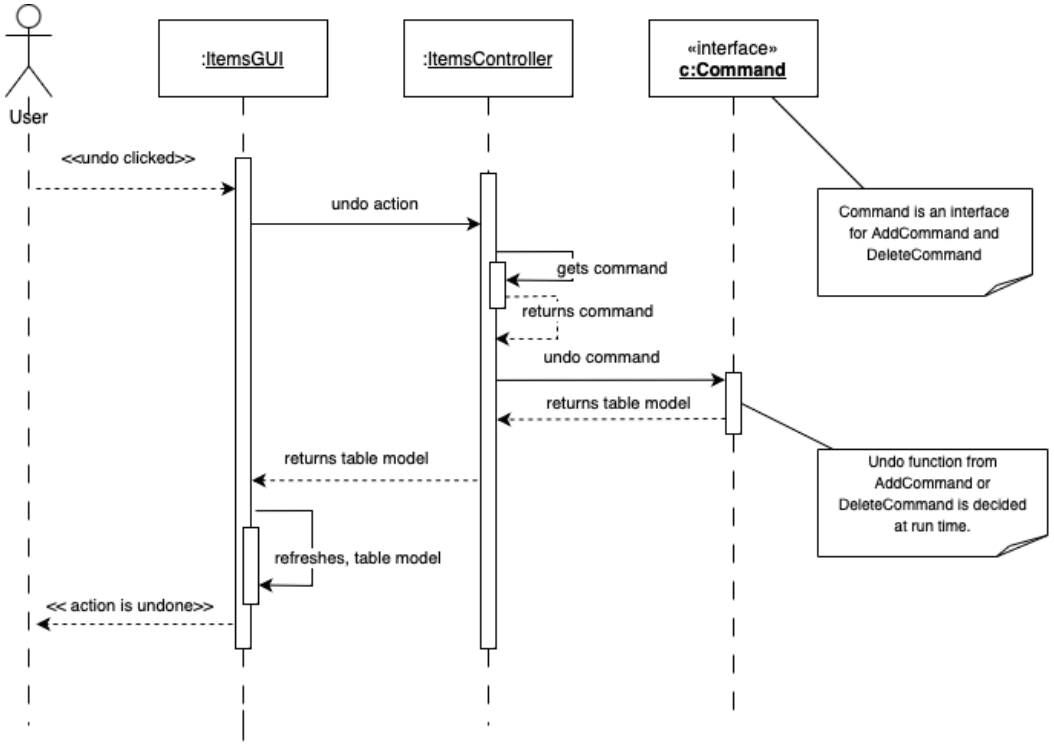


Delete Button Clicked

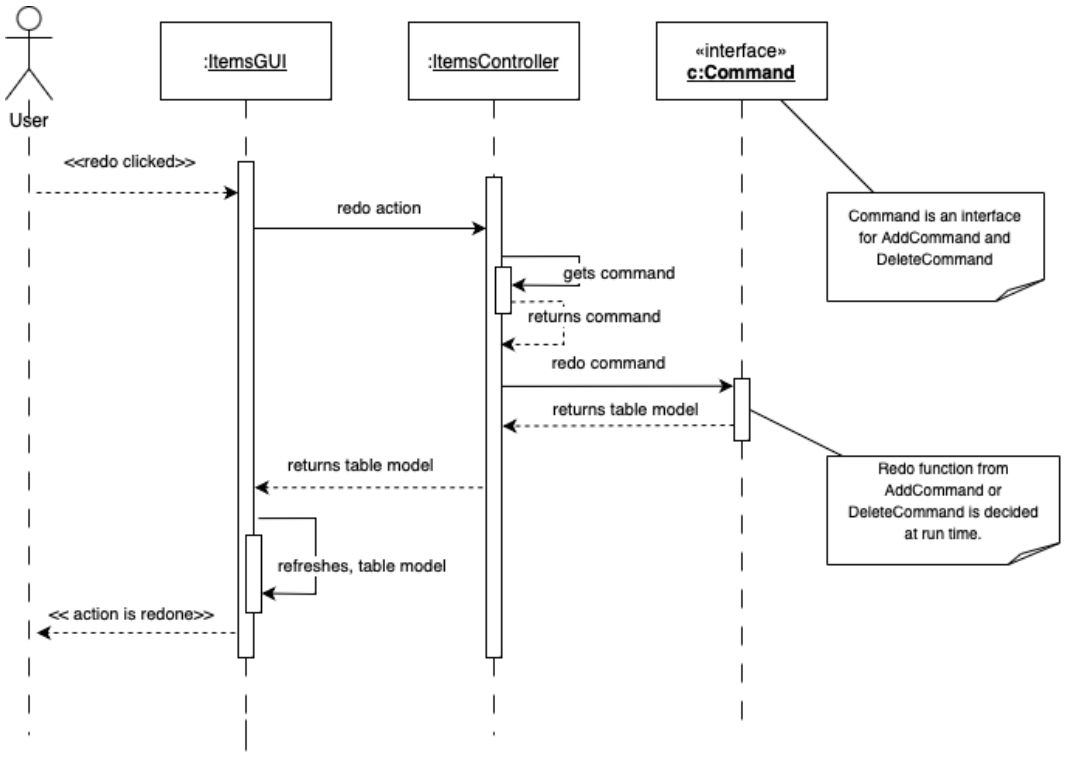


The rest of the informal sequence diagrams have the same Controller and Command pattern UML notes.

Undo Button Clicked

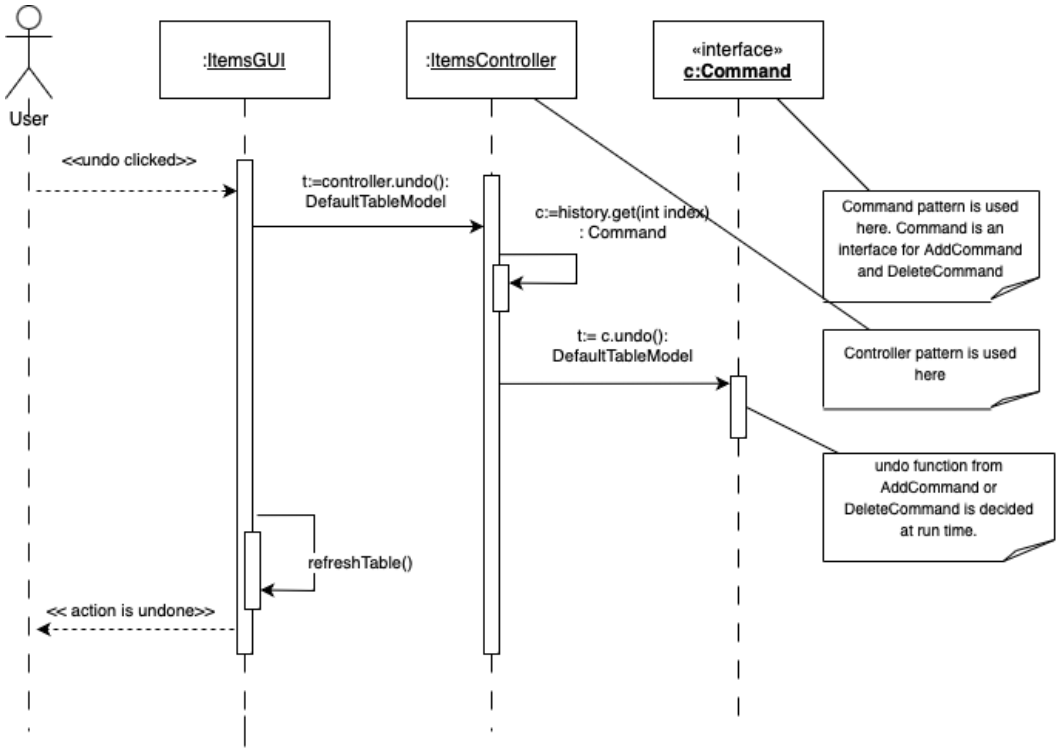


Redo Button Clicked

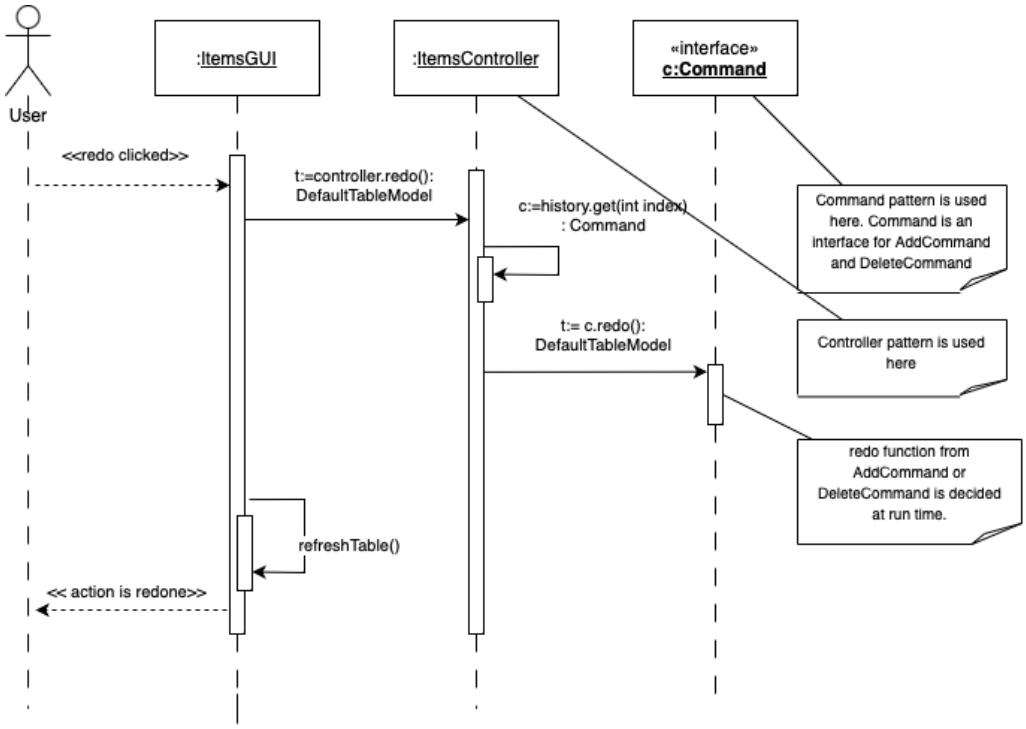


5. Design Sequence Diagram

Undo Button Clicked

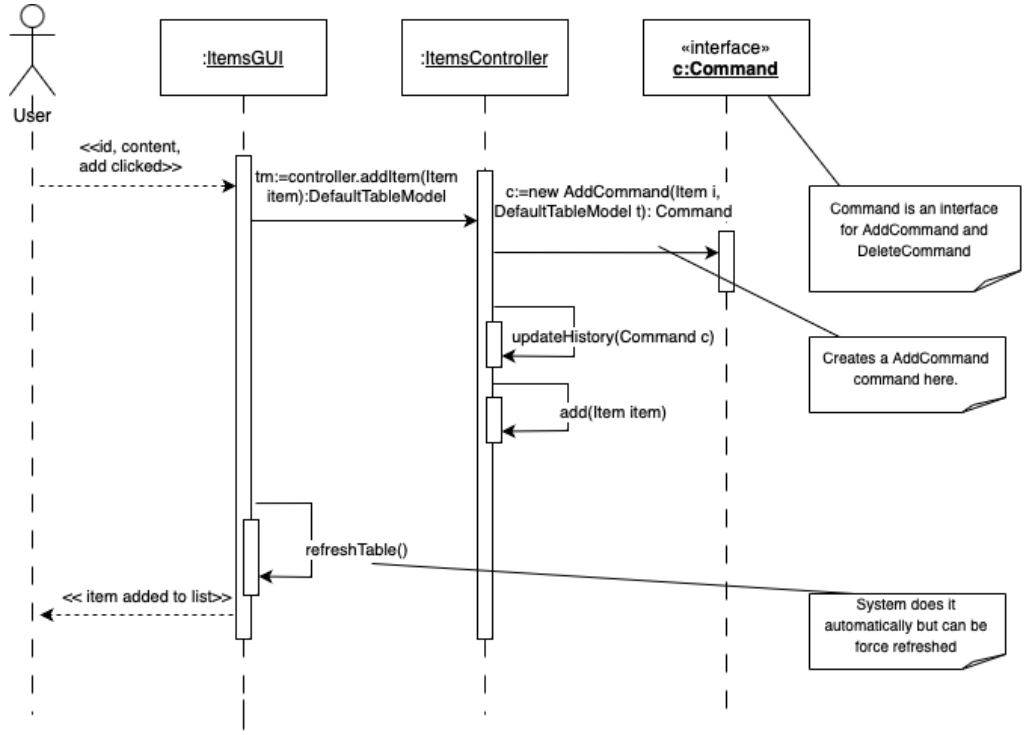


Redo Button Clicked

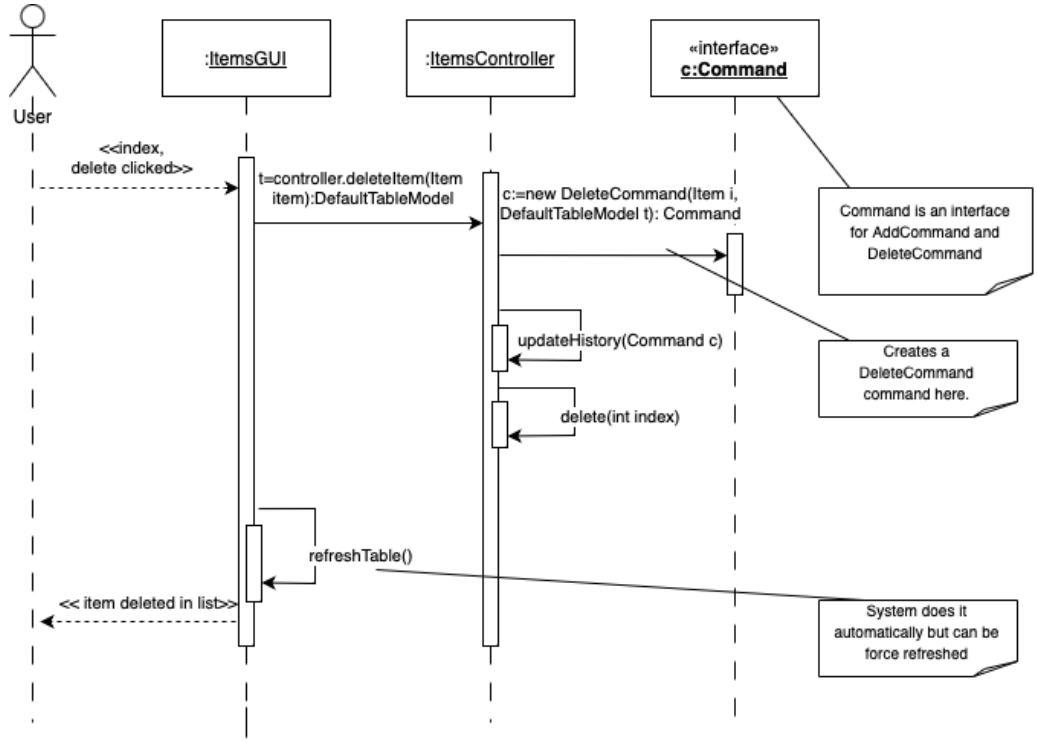


The rest of the Design Sequence Diagrams have the same Controller and Command pattern UML notes.

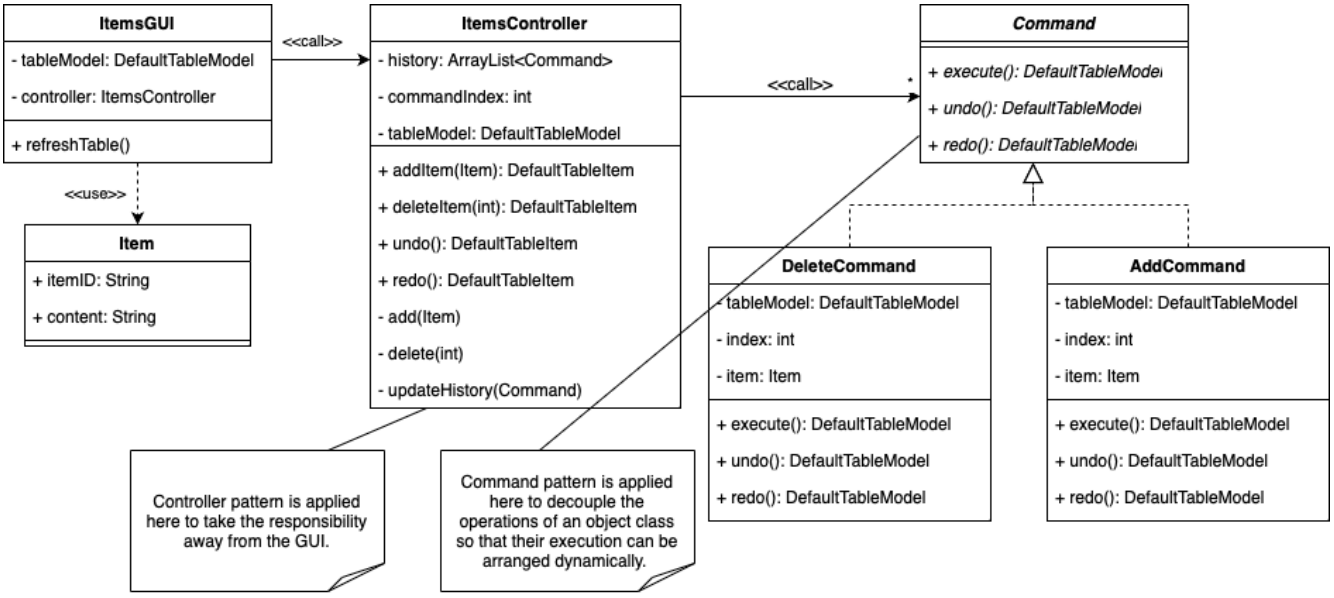
Add Button Clicked



Delete Button Clicked

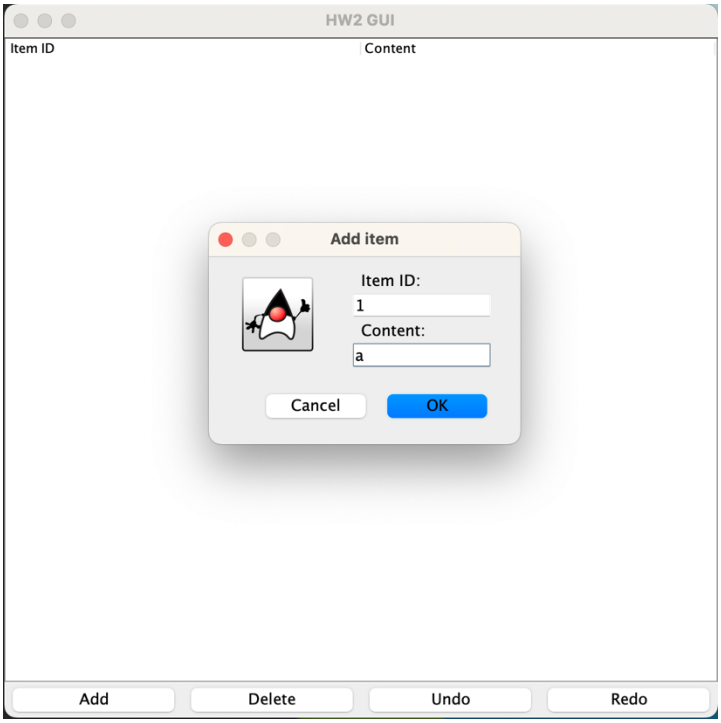


6. Design Class Diagram



7. Implementation

Below screenshots shows functionality when Add button is clicked.



Add Button Clicked, dialog box appears.

Input in the text field, and then click OK. The item is added in the table.

Below screenshots shows functionality when Delete button is clicked.

A few more items are added to the table.
Item with item ID 2 is selected.

Delete button is clicked. Item with item ID 2 is deleted.

Below screenshots shows the functionality when Redo and Undo Buttons are clicked when the last action was Delete.

Undo is clicked. This undoes the last action, which was to delete item with item ID 2.

Redo is clicked. This redoes the last action which was to delete the item with item ID 2.

Below screenshots shows the functionality when Redo and Undo Buttons are clicked when the last action was Add.

Item with item ID 4 is added to the table.

Undo button is clicked. Item with item ID 4 is undone by removing it.

Redo button is clicked. This redoes the last action, which was to add the item with item ID 4.

Steps to run the code:

1) On your terminal, cd Arya_Shubham_CSE5322_S23_HW2_impl folder.
2) Then run the following commands-

```
javac ItemsGUI.java
Java ItemsGUI
```

This should open the GUI as show in the screenshots. Alternatively, you can open it on VS Code and click on the play button to run the program.