

START

IMPORT tkinter as tk

IMPORT messagebox from tkinter

CLASS TodoApp:

 FUNCTION __init__(self, root):

 SET self.root = root

 SET title of self.root to "To-Do List App (Stack/Queue)"

 SET geometry of self.root to "400x500"

 SET self.mode = tk.StringVar with initial value "Stack"

 SET self.tasks = an empty list

 CREATE a Label with text "To-Do List App", font ("Arial", 18, "bold"), and pack with pady=10

 CREATE a Label with text "Mode:" and pack

 CREATE an OptionMenu with self.root, self.mode, options "Stack", "Queue", and pack

 CREATE an Entry widget with width 30, set to self.entry, and pack with pady=10

 CREATE a Button with text "Add Task", command self.add_task, and pack with pady=5

 CREATE a Button with text "Remove Task", command self.remove_task, and pack with pady=5

 CREATE a Button with text "Clear All", command self.clear_tasks, and pack with pady=5

 CREATE a Listbox widget with width 45, height 10, set to self.task_display, and pack with pady=10

 CREATE a Label with text "Mode: Stack (LIFO)", foreground "gray", set to self.status, and pack with pady=5

 CREATE a Button with text "Exit", foreground "white", background "red", command self.confirm_exit, and pack with pady=10

 CALL self.mode.trace_add("write", self.update_mode)

 FUNCTION add_task(self):

 SET task = get text from self.entry, remove leading/trailing whitespace

 IF task is not empty THEN

 APPEND task to self.tasks

 CALL self.update_display()

 DELETE all text in self.entry

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ELSE
    DISPLAY a warning message box with title "Input Error" and message "Please enter a
task."
END IF

FUNCTION remove_task(self):
    IF self.tasks is not empty THEN
        IF self.mode.get() is "Stack" THEN
            SET removed = remove and return the last element from self.tasks
        ELSE IF self.mode.get() is "Queue" THEN
            SET removed = remove and return the first element from self.tasks
        END IF
        CALL self.update_display()
        DISPLAY an information message box with title "Task Removed" and message
"Removed: {removed}"
    ELSE
        DISPLAY an information message box with title "No Tasks" and message "There are no
tasks to remove."
    END IF

FUNCTION clear_tasks(self):
    CLEAR all elements from self.tasks
    CALL self.update_display()

FUNCTION update_display(self):
    DELETE all items in self.task_display
    FOR each index and task in self.tasks:
        INSERT into self.task_display the string "{index+1}. {task}" at the end
    END FOR

FUNCTION update_mode(self, *args):
    SET mode = get value of self.mode
    IF mode is "Stack" THEN
        SET text of self.status to "Mode: Stack (LIFO)"
    ELSE IF mode is "Queue" THEN
        SET text of self.status to "Mode: Queue (FIFO)"
    END IF

FUNCTION confirm_exit(self):
    SET answer = DISPLAY a yes/no question message box with title "Exit Confirmation" and
message "Are you sure you want to exit?"
    IF answer is true THEN
        DESTROY self.root
    END IF

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END CLASS

IF __name__ == "__main__":
 CREATE a main window, root = tk.Tk()
 CREATE an instance of TodoApp, app = TodoApp(root)
 START the Tkinter event loop, root.mainloop()

END