

**University of Westminster**

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Module Lecture : Guganathan Poravi

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# Program Description

This Python application is a straightforward task manager that lets users add, view, edit, and remove tasks while maintaining data persistence via a tasks.txt text file. Each task in the program's list has a name, description, priority (high, medium, or low), and due date. Duplicate task names are avoided, priority input is verified, and users can edit tasks that already exist while preserving previous values if they are left empty. Because tasks are saved in a file, they remain accessible even after the program has restarted. To ensure a seamless user experience, the program has a main menu with task management options, input validation for numerical choices, and yes/no confirmations. With a confirmation prompt before closing, the menu keeps asking users to choose to leave.

# Pseudo Code for Stage 1

START

FUNCTION add\_task():

PRINT "Add a task"

INPUT task\_name

IF task\_name already exists in tasks:

PRINT "Task name already exists"

CALL main()

ENDIF

INPUT task\_description

LOOP UNTIL valid task\_priority is entered:

INPUT task\_priority

IF task\_priority is not "high", "medium", or "low":

PRINT "Invalid priority"

ENDIF

ENDLOOP

INPUT task\_due\_date

CREATE task dictionary with name, description, priority, and due\_date

ADD task to tasks list

CALL save\_tasks()

PRINT "Task created successfully!"

LOOP:

INPUT choice to create another task (yes/no)

IF choice is "yes":

CALL add\_task()

ELSE IF choice is "no":

CALL main()

ELSE:

PRINT "Invalid input"

ENDIF

ENDLOOP

END FUNCTION

FUNCTION view\_task():

PRINT "View a task"

INPUT task\_name

FOR each task in tasks:

IF task\_name matches:

PRINT task details

BREAK

ELSE:

PRINT "Task not found"

END FOR

LOOP:

INPUT choice to read another task (yes/no)

IF choice is "yes":

CALL view\_task()

ELSE IF choice is "no":

CALL main()

ELSE:

PRINT "Invalid input"

ENDIF

ENDLOOP

END FUNCTION

FUNCTION update\_task():

PRINT "Update a task"

INPUT task\_name

FOR each task in tasks:

IF task\_name matches:

PRINT task details

LOOP:

INPUT choice to update (yes/no)

IF choice is "yes":

PRINT "Press Enter to skip an update field"

UPDATE task description, priority, and due date (if user provides new values)

CALL save\_tasks()

PRINT "Task updated successfully"

BREAK

ELSE IF choice is "no":

PRINT "Task not updated"

BREAK

ELSE:

PRINT "Invalid input"

ENDIF

ENDLOOP

ENDIF

ELSE:

PRINT "Task not found"

END FOR

LOOP:

INPUT choice to update another task (yes/no)

IF choice is "yes":

CALL update\_task()

ELSE IF choice is "no":

CALL main()

ELSE:

PRINT "Invalid input"

ENDIF

ENDLOOP

END FUNCTION

FUNCTION delete\_task():

PRINT "Delete a task"

INPUT task\_name

FOR each task in tasks:

IF task\_name matches:

PRINT task details

INPUT choice to delete (yes/no)

IF choice is "yes":

REMOVE task from tasks list

CALL save\_tasks()

PRINT "Task deleted successfully"

ELSE IF choice is "no":

PRINT "Task not deleted"

ELSE:

PRINT "Invalid input"

ENDIF

BREAK

ENDIF

ELSE:

PRINT "Task not found"

END FOR

LOOP:

INPUT choice to delete another task (yes/no)

IF choice is "yes":

CALL delete\_task()

ELSE IF choice is "no":

CALL main()

ELSE:

PRINT "Invalid input"

ENDIF

ENDLOOP

END FUNCTION

FUNCTION load\_tasks():

TRY TO OPEN "tasks.txt"

READ tasks from file

IF file not found:

SET tasks as empty list

ENDIF

END FUNCTION

FUNCTION save\_tasks():

WRITE all tasks to "tasks.txt"

END FUNCTION

FUNCTION main():

CALL load\_tasks()

PRINT program menu

LOOP:

INPUT user choice (1-5)

IF choice is invalid:

PRINT "Invalid input"

CONTINUE LOOP

ENDIF

SWITCH choice:

CASE 1: CALL add\_task()

CASE 2: CALL view\_task()

CASE 3: CALL update\_task()

CASE 4: CALL delete\_task()

CASE 5:

LOOP:

INPUT exit confirmation (yes/no)

IF "yes":

PRINT "Goodbye"

EXIT PROGRAM

ELSE IF "no":

CALL main()

ELSE:

PRINT "Invalid input"

ENDIF

ENDLOOP

END SWITCH

END LOOP

END FUNCTION

IF program is run as main:

CALL main()

END

# Test Cases for Stage 2

## Test Case Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected Output | Actual Output | Pass or fail |
| Case 1 – Add a task | Task name : Task 1  Task description : Studying  Task priority : High  Task due date : 2025-03-31 | Print “Task created successfully” and write the user inputs on the text file | Printed “Task created successfully” and user inputs were written on the text file | Pass |
| Case 2 – Same task name validation | Task name : Task 1 | Print “Task name already exists” | Prints “Task name already exists” | Pass |
| Case 3 – Invalid priority error handling | Task name : Task 2  Task Description : ICT EXAMS  Task Priority : hih | Print “Invalid priority. Please enter a valid priority (high/medium/low)" | Prints “Invalid priority. Please enter a valid priority (high/medium/low)" | Pass |
| Case 4 – View a task | Task name : Task 1 | Print “Task found  Task name : Task 1  Task description : Studying  Task priority : High  Task due date : 2025-03-31 “ | Prints “Task found  Task name : Task 1  Task description : Studying  Task priority : High  Task due date : 2025-03-31 “ | Pass |
| Case 5 – Invalid task name | Task name : Task 3 | Print “Task not found” | Prints “Task not found” | Pass |
| Case 6 – Task update field skip | (pressed enter to skip update field) | Print the pervious data without overwriting | Print the pervious data without overwriting | Pass |
| Case 7 – Delete a task | Task name to delete : Task 1 | Delete the relevant task | Deletes the relevant task | Pass |
| Case 8 – Invalid task name | Task name : Task 3 | Print “Task not found” | Prints “Task not found” | Pass |
| Case 9 – Invalid input in main menu | Choice : a | Print “Invalid input. Please enter a valid number ” | Prints “Invalid input. Please enter a valid number ” | Pass |
| Case 10 – Invalid input when the program requests the user to continue to add, view, update and delete tasks. | Common input : n | Print “"Invalid input. Please enter a valid response (yes/no)” | Prints “"Invalid input. Please enter a valid response (yes/no)” | Pass |

# Test case figures

## Main menu

A screenshot of a computer

AI-generated content may be incorrect.

Figure 1

## Create a task

A computer program code with blue text

AI-generated content may be incorrect.

Figure 2

A screenshot of a computer

AI-generated content may be incorrect.

Figure 3

Same name validation

A close-up of a white background

AI-generated content may be incorrect.

Figure 4

Invalid priority input error

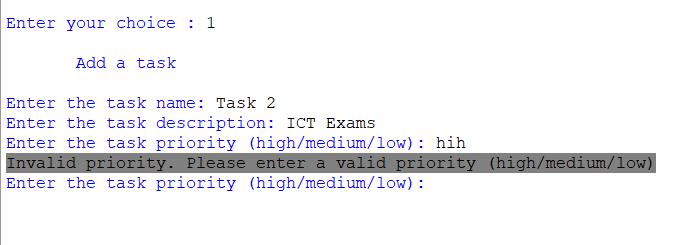


Figure 5

## View Tasks

Task name

A screenshot of a computer program

AI-generated content may be incorrect.

Figure 6

Wrong task name

A screenshot of a computer

AI-generated content may be incorrect.

Figure 7

## Update Tasks

A screenshot of a computer program

AI-generated content may be incorrect.

Figure 8

A screenshot of a computer

AI-generated content may be incorrect.

Figure 9

## Delete Task

A screenshot of a computer program

AI-generated content may be incorrect.

Figure 10

A screenshot of a computer

AI-generated content may be incorrect.

Figure 11

A screenshot of a computer screen

AI-generated content may be incorrect.

Figure 12

## Other Cases

Invalid input on main menu

A screenshot of a computer program

AI-generated content may be incorrect.

Figure 14

Add task

Blue text on a white background

AI-generated content may be incorrect.

Figure 15

Update task

A close-up of words

AI-generated content may be incorrect.

Figure 16

Read task

A close-up of blue text

AI-generated content may be incorrect.

Figure 17

Delete task

A screenshot of a computer

AI-generated content may be incorrect.

Figure 18