**Creating a Task Manager with Boolean Logic and Conditionals**

**Objective:**

You will create a basic task manager program that stores and displays up to three tasks using individual string variables. The tasks can be marked as completed using Boolean flags, and the program will display which tasks are completed or still pending.

**Problem Statement**

Imagine you're an engineer managing a small to-do list with three tasks. You want a simple program that allows you to:

* Add a task
* Mark tasks as completed
* Display the status of each task (either completed or pending)

The catch? You can only manage up to three tasks, and you haven't learned how to work with arrays yet. But you can still accomplish this with what you know: variables, if-else statements, and loops.

**Steps**

1. **Create Variables for Tasks and Their Status**
   * Set up three string variables to store the tasks.
   * Create three Boolean variables to track whether each task is completed.
2. **Prompt User to Add a Task**
   * Ask the user to input a task.
   * Check which task variable is empty and store the new task in that variable.
   * If all task slots are full, inform the user that no more tasks can be added.
3. **Mark a Task as Completed**
   * Ask the user to choose which task (1, 2, or 3) to mark as completed.
   * Use **if-else** conditions to update the corresponding Boolean variable, marking the task as completed. Use if-else conditions to update the task status and Send/Display a confirmation message to the user.
   * If the user selects an invalid task number, display an error message.
4. **Display the Tasks and Their Status**
   * Print out each task along with its status (either "Completed" or "Pending").
   * Use **if-else** conditions to check whether each task is completed or not and display the appropriate status.

**Code:**

**using** **System**;

**namespace** **TaskManager**

{

**class** **TaskManager**

{

// Task descriptions and statuses

**static** **string** task1 = "", task2 = "", task3 = "";

**static** **bool** isTask1Completed = **false**, isTask2Completed = **false**, isTask3Completed = **false**;

**static** **void** **Main**()

{

**bool** running = **true**;

**while** (running)

{

ShowMenu();

**string** choice = Console.ReadLine() ?? "";

**switch** (choice)

{

**case** "1":

AddTask();

**break**;

**case** "2":

MarkTaskAsCompleted();

**break**;

**case** "3":

ShowTasks();

**break**;

**case** "4":

running = **false**;

Console.WriteLine("Exiting Task Manager. Goodbye!");

**break**;

**case** "5":

RemoveTask();

**break**;

**default**:

Console.WriteLine("Invalid option. Try again.");

**break**;

}

}

}

**static** **void** **ShowMenu**()

{

Console.WriteLine("\n=== Task Manager ===");

Console.WriteLine("1. Add Task");

Console.WriteLine("2. Mark Task as Completed");

Console.WriteLine("3. Show Tasks");

Console.WriteLine("4. Exit");

Console.WriteLine("5. Remove (Clean) a Task");

Console.Write("Choose an option (1-5): ");

}

**static** **void** **AddTask**()

{

**if** (task1 == "")

{

task1 = GetTaskDescription();

Console.WriteLine("Task 1 added.");

}

**else** **if** (task2 == "")

{

task2 = GetTaskDescription();

Console.WriteLine("Task 2 added.");

}

**else** **if** (task3 == "")

{

task3 = GetTaskDescription();

Console.WriteLine("Task 3 added.");

}

**else**

{

Console.WriteLine("Task list is full. You can't add more than 3 tasks.");

}

}

**static** **string** **GetTaskDescription**()

{

Console.Write("Enter task description: ");

**return** Console.ReadLine() ?? "";

}

**static** **void** **MarkTaskAsCompleted**()

{

Console.Write("Enter task number to mark as completed (1-3): ");

**string** taskNum = Console.ReadLine() ?? "";

**if** (taskNum == "1" && task1 != "")

isTask1Completed = **true**;

**else** **if** (taskNum == "2" && task2 != "")

isTask2Completed = **true**;

**else** **if** (taskNum == "3" && task3 != "")

isTask3Completed = **true**;

**else**

{

Console.WriteLine("Invalid task number or task does not exist.");

**return**;

}

Console.WriteLine($"Task {taskNum} marked as completed.");

}

**static** **void** **ShowTasks**()

{

Console.WriteLine("\n--- Task List ---");

ShowTask(**1**, task1, isTask1Completed);

ShowTask(**2**, task2, isTask2Completed);

ShowTask(**3**, task3, isTask3Completed);

}

**static** **void** **ShowTask**(**int** number, **string** task, **bool** isCompleted)

{

**if** (task == "")

Console.WriteLine($"Task {number}: [Empty]");

**else**

Console.WriteLine($"Task {number}: {task} - {(isCompleted ? "Completed" : "Pending")}");

}

**static** **void** **RemoveTask**()

{

Console.Write("Enter task number to remove (1-3): ");

**string** taskNum = Console.ReadLine() ?? "";

**if** (taskNum == "1" && task1 != "")

{

task1 = "";

isTask1Completed = **false**;

Console.WriteLine("Task 1 removed.");

}

**else** **if** (taskNum == "2" && task2 != "")

{

task2 = "";

isTask2Completed = **false**;

Console.WriteLine("Task 2 removed.");

}

**else** **if** (taskNum == "3" && task3 != "")

{

task3 = "";

isTask3Completed = **false**;

Console.WriteLine("Task 3 removed.");

}

**else**

{

Console.WriteLine("Invalid task number or task does not exist.");

}

}

}

}