

WEEK 3

Mini Project

Objective: Develop a simple to-do list application using Java with an emphasis on functions and data structures.

Code:

```
import java.util.ArrayList;
import java.util.Scanner;

class Task {
    private String description;
    private boolean isCompleted;

    public Task(String description) {
        this.description = description;
        this.isCompleted = false;
    }

    public String getDescription() {
        return description;
    }

    public boolean isCompleted() {
        return isCompleted;
    }
}
```

```
public void markAsCompleted() {  
    isCompleted = true;  
}
```

```
@Override
```

```
public String toString() {  
    return (isCompleted ? "[C] " : "[ ] ") + description;  
}  
}
```

```
class ToDoList {  
    private ArrayList<Task> tasks;  
  
    public ToDoList() {  
        tasks = new ArrayList<>();  
    }  
  
    public void addTask(String description) {  
        tasks.add(new Task(description));  
    }  
  
    public void completeTask(int index) {  
        if (index >= 0 && index < tasks.size()) {  
            tasks.get(index).markAsCompleted();  
        } else {  
            System.out.println("Invalid task number.");  
        }  
    }  
}
```

```

    }
}

public void removeTask(int index) {
    if (index >= 0 && index < tasks.size()) {
        tasks.remove(index);
    } else {
        System.out.println("Invalid task number.");
    }
}

public void displayTasks() {
    if (tasks.isEmpty()) {
        System.out.println("No tasks in the list.");
    } else {
        for (int i = 0; i < tasks.size(); i++) {
            System.out.println((i + 1) + ". " + tasks.get(i));
        }
    }
}

}

public class ToDoListApp {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        ToDoList toDoList = new ToDoList();
    }
}

```

```
boolean running = true;

while (running) {
    System.out.println("\nTo-Do List Application");
    System.out.println("1. Add Task");
    System.out.println("2. Complete Task");
    System.out.println("3. Remove Task");
    System.out.println("4. Display Tasks");
    System.out.println("5. Exit");
    System.out.print("Choose an option: ");
    int choice = scanner.nextInt();
    scanner.nextLine(); // Consume newline

    switch (choice) {
        case 1:
            System.out.print("Enter task description: ");
            String description = scanner.nextLine();
            toDoList.addTask(description);
            break;
        case 2:
            System.out.print("Enter task number to complete: ");
            int completeIndex = scanner.nextInt();
            toDoList.completeTask(completeIndex - 1);
            break;
        case 3:
            System.out.print("Enter task number to remove: ");
```

```
        int removeIndex = scanner.nextInt();
        toDoList.removeTask(removeIndex - 1);
        break;
    case 4:
        toDoList.displayTasks();
        break;
    case 5:
        running = false;
        break;
    default:
        System.out.println("Invalid choice. Please try again.");
    }
}

scanner.close();
}
```

Output:

```
PS C:\Users\hp\Desktop\Coding\Java> & 'C:\Program
Files\Java\jdk-19\bin\java.exe' '-XX:+ShowCodeDet
ailsInExceptionMessages' '-cp' 'C:\Users\hp\AppData
a\Roaming\Code\User\workspaceStorage\15c7498fafdf6
c366fde368b50e54c29\redhat.java\jdt_ws\Java_fa5d43
4c\bin' 'ToDoListApp'
```

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 1

Enter task description: Palindromechecker

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 1

Enter task description: Fabonacci

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 1

Enter task description: listclass

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 1

Enter task description: Footerjava

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 1

Enter task description: wordfrequencycounter

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 4

1. ☐ Palindromechecker
2. ☐ Fabonacci
3. ☐ listclass
4. ☐ Footerjava
5. ☐ wordfrequencycounter

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 2

Enter task number to complete: 1

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 2

Enter task number to complete: 2

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

Choose an option: 2

Enter task number to complete: 3

To-Do List Application

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit


```
Choose an option: 4
1. [C] Palindromechecker
2. [C] Fabonacci
3. [C] listclass
4. [ ] Footerjava
5. [ ] wordfrequencycounter
```

```
To-Do List Application
```

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

```
Choose an option: 3
```

```
Enter task number to remove: 3
```

```
To-Do List Application
```

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

```
Choose an option: 4
```

1. [C] Palindromechecker
2. [C] Fabonacci
3. [] Footerjava
4. [] wordfrequencycounter

```
To-Do List Application
```

1. Add Task
2. Complete Task
3. Remove Task
4. Display Tasks
5. Exit

```
Choose an option: 5
```

```
PS C:\Users\hp\Desktop\Coding\Java> 
```

