Report Assignment -1
Mobile Computing

Ayush Aditya *2021244*

Introduction:

The assignment aimed at developing an Android app that displays information about a journey route, including stops, distances between stops, and the progress of the journey. The app allows users to switch between kilometers and miles, mark the arrival at each stop, and provides a progress bar indicating the distance covered and remaining. Additionally, the app supports lazy loading for routes with more than 10 stops.

Implementation:

1. Stop Information:

- The app includes a list of stops, each represented by a colored box indicating the progress. The stops and their distances are displayed in a LazyColumn, allowing for efficient handling of larger datasets.

2. Distance Units:

- A button labeled "Change Unit" enables users to toggle between kilometers and miles, converting distances accordingly. The distances in the progress bar, as well as the stop boxes, are dynamically updated based on the selected unit.

3. Progress Bar:

- A linear progress bar is incorporated to visually represent the journey's progress. It displays the distance covered, the total distance left, and the overall progress.

4. Next Button:

- The "Next" button allows users to mark their arrival at a stop, updating the progress bar and changing the color of the stop boxes accordingly.

5. Lazy Loading:

- The app supports lazy loading for routes with more than 10 stops. The LazyColumn efficiently loads and displays the stops, ensuring optimal performance.

6. User Interface:

- The app features a clean and user-friendly interface. The stop boxes are displayed in a visually appealing manner, and the buttons are appropriately labeled for easy navigation.

7. Unit Conversion:
  - Distances are accurately converted between kilometers and miles, ensuring precision up to two decimal places for miles.

Conclusion:

The developed app successfully fulfills the requirements outlined in the assignment. It provides a comprehensive and user-friendly interface for users to track their journey's progress, switch between distance units, and mark their arrival at each stop. The implementation adheres to best practices, including lazy loading for improved performance with larger datasets.

Note: The code has been thoroughly tested on both an Android device and the Android emulator, ensuring compatibility and a seamless user experience.