**15 Day Report Part-1**

**1. What theme have you decided for your project?**

The theme of the project is "Crowd Management" in a visitor attraction setting. The code implements classes and functionalities related to managing visitors, attractions, staff, and notifications within such an environment.

**2. What is your problem statement?**

The problem statement is to revolve efficiently managing the flow of visitors in and out of attractions within an establishment while ensuring safety, VIP treatment, and handling emergencies effectively.

**3. What is the scope of your project?**

The scope of the project includes:

- Creating and managing visitor profiles with group size, contact details, VIP status, and handling emergencies.

- Managing attractions with capacity limits, current occupancy, visitor queues, and entry/exit mechanisms.

- Staff roles such as monitoring queue status, assisting visitors, and handling emergencies.

- Notification system for alerting staff about queue status, emergencies, and sending reminders to visitors.

- Testing and refining the system to ensure smooth operation under various scenarios.

**4. What data structure have you decided to use and why?**

The primary data structure used is a queue implemented using a linked list (`LinkedList`). This data structure is chosen for managing visitor queues at attractions efficiently. Queues are suitable for scenarios where the first-in-first-out (FIFO) order is important, such as managing waiting lines.

**5. Did you think of any other data structures with similar functionality required for your project? Why did you not choose them instead?**

Other data structures like arrays or ArrayLists could have been considered for managing visitors, attractions, and staff. However, queues are specifically designed for handling waiting lines, making them more appropriate for managing visitor queues at attractions.

**6. Have you started working on your project and what all did you accomplish in the past 2 weeks?**

The initial groundwork has been laid down, including class definitions, basic functionalities, and a test scenario (`TestCrowd` class) to demonstrate some system interactions.

**7. Did you face any problems in these 15 days and were you able to resolve them?**

The challenges during development was debugging logical errors, ensuring proper data flow between classes, and handling exceptions gracefully. Resolutions would typically involve thorough testing, debugging tools, and code reviews.

**8. Did you initiate a conversation with your mentor? How has the mentor helped you in finalizing your them and problem statement?**

Mentor interactions was highly beneficial in providing guidance, reviewing code, suggesting improvements, and helping with project scope clarification.