Description of the data structures:

We created this airplane boarding system using linked lists, a doubly linked list, a queue, and a stack to efficiently manage passengers, seat assignments, and luggage.

The passenger and luggage lists are organized with a singly linked list, which stores each passenger's information (name, age, ticket, and luggage). This structure makes it easy to add and remove passengers without shifting data. This makes it good for managing dynamic lists.

For seat assignments we used a doubly linked list which allows quick navigation forward or backward through seats. This could be useful for managing changes in seating arrangements.

For the boarding and luggage processes we used a queue and a stack. The queue ensures an orderly boarding process where passengers board in the order they arrive, following a first-in, first-out structure. The stack, on the other hand, manages luggage unloading in reverse order, like a last-in, first-out process, simulating how luggage is stored and retrieved in an airplane's compartment.