

Phase 1 document

Orders and motorcycles	DS for each list	Justifications
VIP orders	Priority queue	-To insert orders according to their priority equation. -Complexity of the most frequent operations are: 1-enqueue $O(1)$ 2-dequeue $O(1)$
Frozen orders	Queue	-To be able to insert and remove reserving the order(FIFO) -Complexity of the most frequent operations are: 1-enqueue $O(1)$ 2-dequeue $O(1)$
Normal orders	Linked List	-In order to be able to delete an order from the middle. -Complexity of the most frequent operations are: 1-Insert end $O(1)$ 2-removeFront $O(1)$ 3-remove $O(n)$
Fast motorcycles	Priority queue	(we took the bonus requirements into consideration) so the priority queue will be suitable because it facilitates the arrangement of the motorcycles according to their availability which is predictable since every motorcycle type has its own speed and every order has its own distance.
Frozen motorcycles	Priority queue	
Normal motorcycles	Priority queue	