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**Part A:**

1. **Hash Table:**

Pros:

* Using a good hashing function, we can look up for any ship’s detail in constant time (i.e., O(1)) on average, given its name.

Cons:

* Collisions make hash tables ineffective and look up for any ship’s detail approaches linear time (i.e., O(n)) in the worst case.

1. **Graph:**

* Graphs are not suitable for storing key-value pairs.

1. **AVL Tree:**

Pros:

* As AVL Trees are self-balancing, look up for ship’s details can be done in logarithmic time (i.e., O(log(n))) both in the average and worst case.

Cons:

* AVL Trees are not effective in case when the ships in the fleet change a lot.

1. **Union-find:**

Pros:

**Conclusion:**

* Hash tables would be the best option for the given task of looking up a ship’s information using it name as key because they offer searching in constant time and the problem of collisions can be prevented using a larger array to store the info.

**Part B:**

1. **Hash table:**