



ALGORITHMS IN REAL LIFE





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Sorting Algorithm

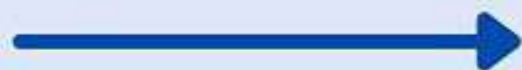
Arrange Books in the Shelf

In simple terms, **sorting** is a process of arranging similar items systematically.

In this case we can keep the taller books on the left followed **by the shorter books** or we can do vice versa.

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for real life example







Searching Algorithm

Find a Book in a Shelf

Searching, as its name suggests, helps in **finding an item**.

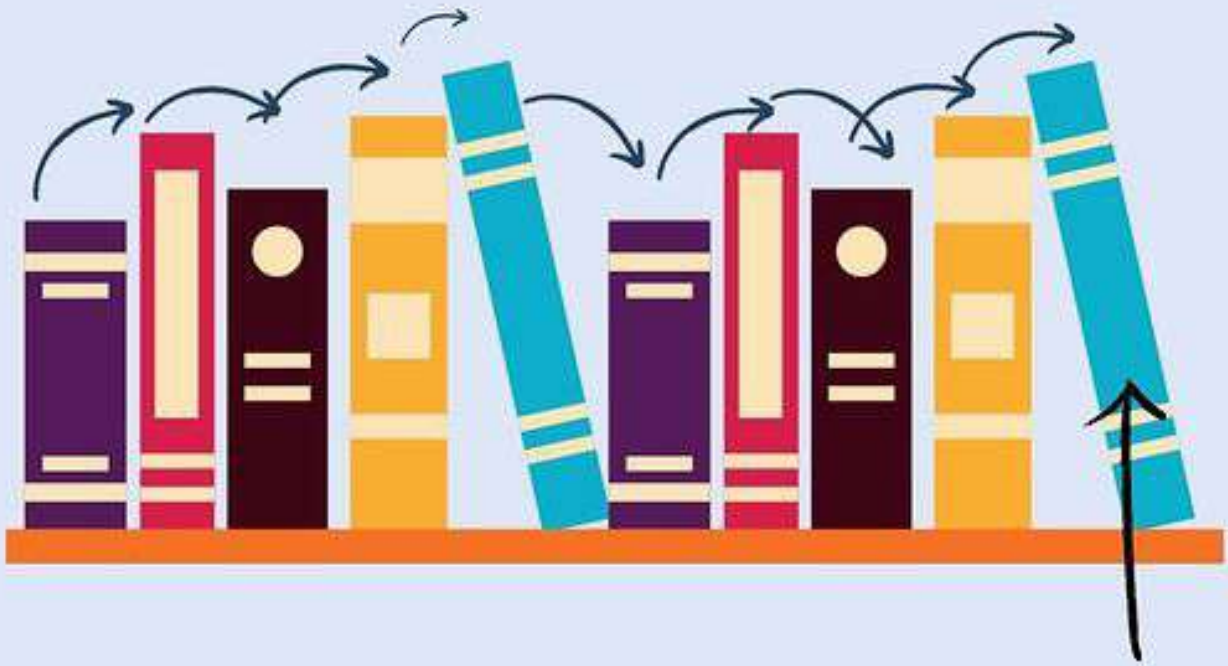
You may be thinking "I will look for the book from the beginning and locate it".

This same concept is implemented in **Linear Search**.

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But, what if the book is at the other end of the shelf? The above process might take a **long time** and will **not** provide a **feasible solution**.

Swipe to optimized
solution →



Now, let's try another procedure.
Firstly, sort the books in **ascending alphabetical order** then **search** for the book in the middle. We are searching for a book that starts with J.

A, B, C, D, E, F, G, H, I, J, K, L,
M, N, O, P, Q, R, S, T, U, V, W,
X, Y, Z.

SWIPE
for real life example





Since we are **always** looking at the **middle position**, the middle position between A and Z is M, not J.

A, B, C, D, E, F, G, H, I, J, K, L,
M, N, O, P, Q, R, S, T, U, V, W,
X, Y, Z.

Now, compare J with M. We know that J lies before M. So let's start searching for J in the **middle** position of A and M. **G** is the mid element, again J is not found.

A, B, C, D, E, F, G, H, I, J, K, L,
M, N, O, P, Q, R, S, T, U, V, W,
X, Y, Z.

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Since J lies between G and M, let's find the mid element between them. Yeah, we have found J.

Congratulations!!!

A, B, C, D, E, F, G, H, I, J, K, L,
M, N, O, P, Q, R, S, T, U, V, W,
X, Y, Z.