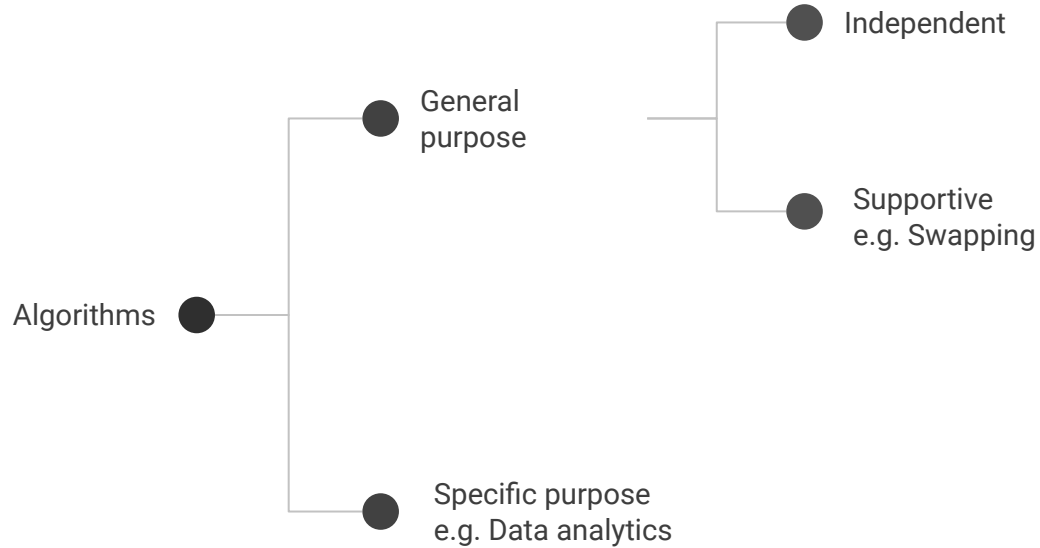


# **Data Structures & Algorithmic thinking**

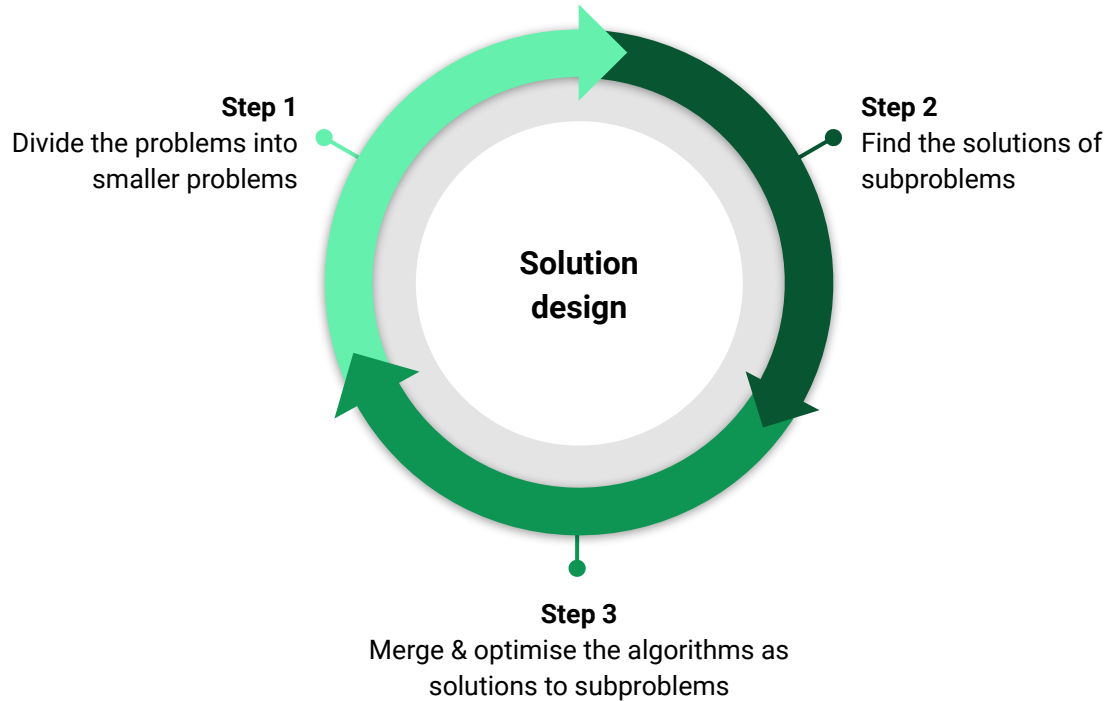
# Algorithms as building blocks



# Think algorithmically



# Algorithmic thinking



# Algorithms are omnipresent

Computer graphics	<ul style="list-style-type: none"><li>• Bresenham's Line Generation Algorithm</li><li>• Mid-Point Line Generation Algorithm</li><li>• Bresenham's circle drawing algorithm</li><li>• Mid-Point Circle Drawing Algorithm</li></ul>
Operating Systems	<ul style="list-style-type: none"><li>• First-Come, First-Served (FCFS) Scheduling</li><li>• Shortest-Job-Next (SJN) Scheduling</li><li>• Priority Scheduling</li><li>• Round Robin(RR) Scheduling</li></ul>
Database Management System	<ul style="list-style-type: none"><li>• Join algorithms</li><li>• Query optimization</li><li>• Normalization identification</li><li>• Minimal Cover</li></ul>
Data analytics	<ul style="list-style-type: none"><li>• Iterative Dichotomiser 3</li><li>• Support Vector Machine (SVM)</li><li>• K-Means Clustering</li><li>• K-Nearest Neighbors</li></ul>

# Algorithm optimization

Hardware usage

Write the GPU/CPU based algorithms harnessing the parallel computing power

Efficient Data Structures

Store and retrieve data in most appropriate data structure as per the use case scenario

Algorithm optimization

Less memory and time requirement and fast computation based on approximation