SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

DATA STRUCTURES

Abstract Data Type(ADT)

By

Kanchana Moorthy

Assistant Professor/CSE

PUZZLE

Which data structure operates on a "Last In, First Out" (LIFO) principle?

Answer is

The data structure that operates on a "Last In, First Out" (LIFO) principle is a **Stack**.

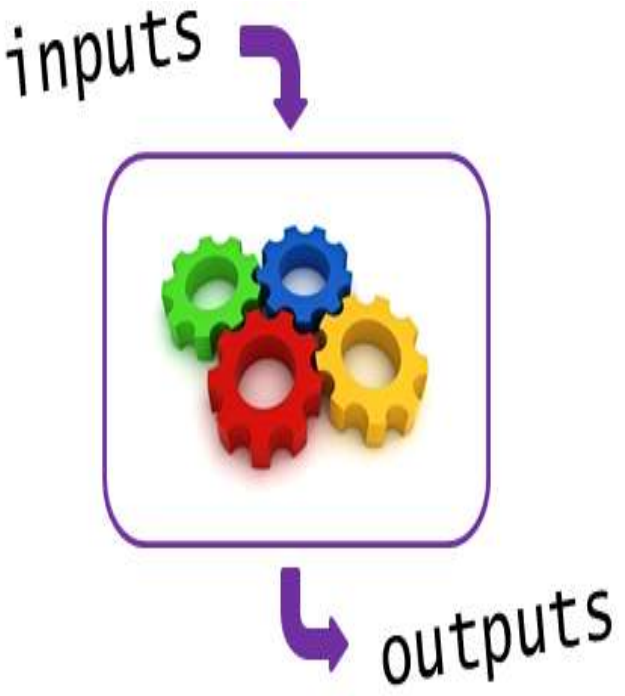
Internal details of Car

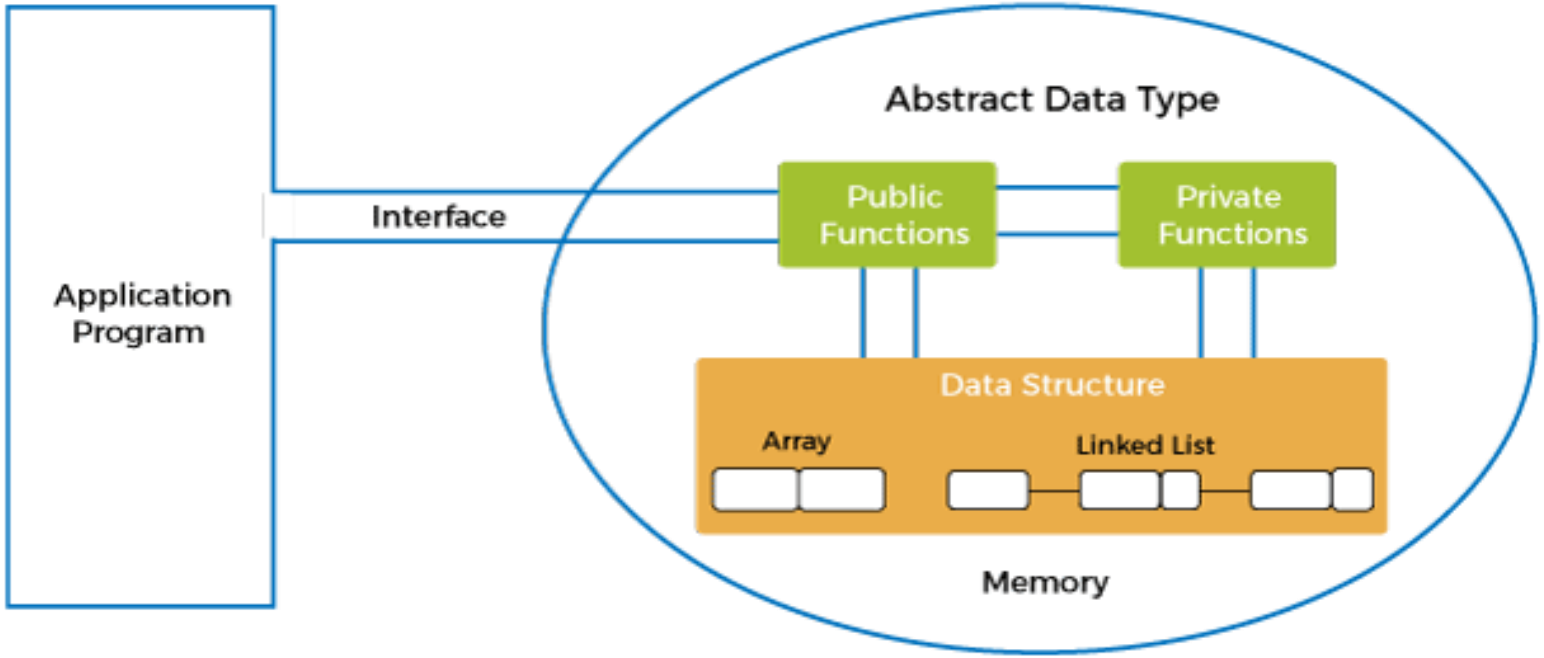
Abstraction of Car

Abstract Data type (ADT)

An abstract data type is an abstraction of a data structure that provides only the interface to which the data structure must adhere

The interface does not give any specific details about something should be implemented or in what programming language




Application Program
Interface
Abstract Data Type
Public Functions
Private Functions
Data Structure
Array
Linked List
Memory

Abstract Data type (ADT)

In a programming context, the To-Do List ADT can be implemented using various data structures like arrays, linked lists, or queues. Regardless of the specific implementation, the ADT defines the operations you can perform on a to-do list, and the data structure determines how those operations are executed.

QUESTION

You're designing a software application that simulates a vending machine. The vending machine should allow users to select items, make payments, and receive their chosen items. Which of the following statements about ADTs is true in this context?

A) ADTs are only used in complex scientific simulations, not in everyday applications like vending machines.
B) ADTs would be useful to abstract the behavior of the vending machine, defining the operations like "select item," "make payment," and "dispense item."
C) ADTs are strictly concerned with the low-level implementation details of the vending machine hardware.
D) ADTs can only be implemented using arrays and linked lists, not suitable for modeling real-world scenarios.

THANK YOU