

## Q-5: THIRD

This program defines a linked list structure and two functions. The thirdlast function takes a pointer to the head of a linked list as input and returns the third last element's value. It accomplishes this by using three pointers, advancing one by three positions while moving all three together until the first pointer reaches the end of the list. In main function it prompts the user to provide a file path and checks for errors. It then reads positive integers from the file, builds the linked list, and prints the third last element's value if it exists. Memory allocation and memory deallocation are used for managing linked list nodes.

## Q-2: SURVIVAL

This code read a sequence of integers, ensure that the numbers fall within a range of 0 to 100, and sorted the linked list while calculating the median after each insertion. Used a linked list structure called Node and provides functions for inserting elements into the sorted linked list (insert) and calculating the median of the linked list (calculateMedian). In main function, enter the file path, for input.txt, reads integers from it one by one, and calculates the median of the list .

## Q-3 : TRANSACTION

This program reads transaction data from a file, remove fraudulent transactions based on a list of fraudulent IDs, and then prints the remaining l transactions. It used linked list to manage the transaction with each node representing a transaction. The remove function is responsible for deleting transactions with specified IDs. The main function handles file input, enter the file path and reads transactions

and fraudulent IDs, performs the removal of fraudulent transactions, and displays the valid transactions. For memory allocation and deallocation used malloc and free.

## Q-1: TRUMP

This program used linked list of integers uses commands read from a file. The commands include "ADD," used to add unique integers to the end of the list; "DELETE," which removes the last element from the list; "TRUMP," calculate the middle numbers from the list without requiring a full traversal and "END," which terminates the command processing loop. Users can add unique integers to the list, remove the last element, and retrieve the middle number(s) without fully traversing the list. The code ensures memory allocation and deallocation to prevent memory leaks. In the main function it prompts the user for a file containing commands, processes them, and outputs the resulting linked list.