**EXPERIMENT 13**

**Construct a C program to implement various memory allocation strategies.**

## AIM :

To construct a C program to implement various memory allocation strategies.

## ALGORITHM :

1. Include Necessary Libraries:
   * Include the necessary header files such as stdio.h, stdlib.h, etc.
2. Define Process Control Block (PCB) Structure:
   * Define a structure to represent a Process Control Block (PCB) that contains information about each process, including process ID, memory size, and allocation status.
3. Implement Memory Allocation Functions:
   * Implement functions for memory allocation strategies like First Fit, Best Fit, and Worst Fit.
   * Each function should search for a suitable block of memory in the memory pool based on the specific strategy (first fit, best fit, or worst fit).
   * Allocate memory to the process by updating the allocation status in the PCB and updating the memory pool accordingly.
4. Implement Memory Deallocation Function:
   * Implement a function to deallocate memory occupied by a process.
   * Update the allocation status in the PCB and release the memory block, merging it with adjacent free blocks if necessary.
5. Main Function:
   * In the main function, initialize the memory pool (an array representing the available memory).
   * Create PCBs for processes with specific memory requirements.
   * Call the appropriate memory allocation functions based on the desired strategy for each process.
   * Deallocate memory for completed processes using the memory deallocation function.
6. Print Memory Allocation Status:
   * Implement a function to print the memory allocation status after each allocation and deallocation operation.
7. Compile and Run:
   * Compile the program and run it to observe how different memory allocation strategies work. OUTPUT :

