*STACK*

*Stack is a linear data structure which follows a particular order in which the operations are performed. The order may be*[*LIFO(Last In First Out) or FILO(First In Last Out)*](https://www.geeksforgeeks.org/lifo-last-in-first-out-approach-in-programming/)*.*

*Stack is considered a complex data structure is that it uses other data structures for implementation, such as Arrays, Linked lists, etc.*

*To implement the stack, it is required to maintain the****pointer to the top of the stack****, which is the last element to be inserted because****we can access the elements only on the top of the stack.***

***HEAP***

*A Heap is a special****Tree-based Data Structure****in which the tree is a*[*complete binary tree*](https://www.geeksforgeeks.org/complete-binary-tree/)*.*

*DYNAMIC MEMORY ALLOCATION*

*The concept of****dynamic memory allocation in c language***enables the C programmer to allocate memory at runtime*. Dynamic memory allocation in c language is possible by 4 functions of stdlib.h header file.*

*memory can be increased while executing program.*

*malloc() -- allocates single block of requested memory.*

*It doesn't initialize memory at execution time, so it has garbage value initially. It returns NULL if memory is not sufficient.*

*calloc()-- allocates multiple block of requested memory.It initially initialize all bytes to zero. It returns NULL if memory is not sufficient.*

*realloc()-- reallocates the memory occupied by malloc() or calloc() functions.*

*free()--frees the dynamically allocated memory.*

*A circular linked list is that in which the last node contains the pointer to the first node of the list.  no beginning and no end.*

*A Doubly Circular linked list or a circular two-way linked list is a more complex type of linked list that contains a pointer to the next as well as the previous node in the sequence. The difference between the doubly linked and circular doubly list is the same as that between a singly linked list and a circular linked list. The circular doubly linked list does not contain null in the previous field of the first node.*