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Assignment 1 – Part (1)

1. **Stackt**

* **Stackt [Constructor]:** will start a new stack of any type set by the user and allocate the MaxSize given by the user or use the default size (128).
* **Stackt [Deconstructor]:** will delete the stack.
* **Push ():** will add an element to the top of the stack. Takes an argument of the value of the element to be added.
* **Pop ():** Returns the top element and delete it from the stack.
* **StackTop ():** Returns the top element without removing it from the stack.
* **StackisEmpty ():** returns true if the stack is empty.
* **StackIsFull ():** returns true if the stack is full.
* **Destroy ():** destroys the stack and makes sure the pointer is set to null.
* **Display ():** runs a loop through all the elements in the stack and outputs them one by one with a Tab Space between them.

1. **App**

* **Start ():** Takes the number of disks “N” and declares the 3 stacks “rod” according to N. then it allocates the N number of elements to the first stack, calls the function TowersOfHanoi to solve the puzzle, returns the number of moves after the puzzle is solved.
* **TowersOfHanoi ():** Solves the puzzle by recursion and calls the function Update after each move.
* **Update ():** Displays the moves, increments the moves variable by one and calls the function FindAndDisplay to Display the 3 towers.
* **FindAndDisplay ():** takes the name of the tower and the 3 stacks and displays the required one.