***TheStack.java***

package app;

import java.util.Arrays;

public class TheStack {

    private String[] stackArray;

    private int stackSize;

    // Sets stack as empty

    private int topOfStack = -1;

    /\*\*

     \*

     \* @param size

     \*/

    TheStack(int size){

        stackSize = size;

        stackArray = new String[size];

        // Assigns the value of -1 to every value in the array

        // so I control what gets printed to screen

        Arrays.fill(stackArray, "-1");

    } // end TheStack

    /\*\*

     \*

     \* @param input

     \*/

    public void push(String input){

        if(topOfStack+1 < stackSize){

            topOfStack++;

            stackArray[topOfStack] = input;

        } // end if

        else { System.out.println("Sorry But the Stack is Full"); } // end else

        displayTheStack();

        System.out.println("PUSH " + input + " Was Added to the Stack\n");

    } // end push

    /\*\*

     \*

     \* @return

     \*/

    public String pop(){

        if(topOfStack >= 0){

            displayTheStack();

            System.out.println("POP " + stackArray[topOfStack] + " Was Removed From the Stack\n");

            // Just like in memory an item isn't deleted, but instead is just not available

            stackArray[topOfStack] = "-1"; // Assigns -1 so the value won't appear

            return stackArray[topOfStack--];

        } // end if

        else {

            displayTheStack();

            System.out.println("Sorry But the Stack is Empty");

            return "-1";

        } // end else

    } // end pop

    /\*\*

     \*

     \* @return

     \*/

    public String peek(){

        displayTheStack();

        System.out.println("PEEK " + stackArray[topOfStack] + " Is at the Top of the Stack\n");

        return stackArray[topOfStack];

    } // end peek

    /\*\*

     \*

     \* @param multipleValues

     \*/

    public void pushMany(String multipleValues){

        String[] tempString = multipleValues.split(" ");

        for(int i = 0; i < tempString.length; i++){ push(tempString[i]); } // end for

    } // end pushMany

    /\*\*

     \*

     \*/

    public void popAll(){

        for(int i = topOfStack; i >= 0; i--){ pop(); } // end for

    } // end popAll

    /\*\*

     \*

     \*/

    public void popDisplayAll(){

        String theReverse = "";

        for(int i = topOfStack; i >= 0; i--){ theReverse += stackArray[i]; } // end for

        System.out.println("The Reverse: " + theReverse);

        popAll();

    } // end popDisplayAll

    /\*\*

     \*

     \*/

    public void displayTheStack(){

        for(int n = 0; n < 61; n++)System.out.print("-"); // end for

        System.out.println();

        for(int n = 0; n < stackSize; n++){ System.out.format("| %2s "+ " ", n); } // end for

        System.out.println("|");

        for(int n = 0; n < 61; n++)System.out.print("-"); // end for

        System.out.println();

        for(int n = 0; n < stackSize; n++){

            if(stackArray[n].equals("-1")) System.out.print("|     ");

            else System.out.print(String.format("| %2s "+ " ", stackArray[n]));

        } // end for

        System.out.println("|");

        for(int n = 0; n < 61; n++)System.out.print("-");

        System.out.println();

    } // displayTheStack

    /\*\*

     \*

     \* @param args

     \*/

    public static void main(String[] args){

        TheStack theStack = new TheStack(10);

        theStack.push("10");

        theStack.push("17");

        theStack.push("13");

        // Look at the top value on the stack

        theStack.peek();

        // Remove values from the stack (LIFO)

        theStack.pop();

        theStack.pop();

        theStack.pop();

        // Add many to the stack

        theStack.pushMany("R E D R U M");

        // Remove all from the stack

        // theStack.popAll();

        // Remove all from the stack and print them

        theStack.popDisplayAll();

        theStack.displayTheStack();

    } // end main

} // end TheStack

***Console.java***

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| 10 | | | | | | | | | |

-------------------------------------------------------------

PUSH 10 Was Added to the Stack

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| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| 10 | 17 | | | | | | | | |

-------------------------------------------------------------

PUSH 17 Was Added to the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| 10 | 17 | 13 | | | | | | | |

-------------------------------------------------------------

PUSH 13 Was Added to the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

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| 10 | 17 | 13 | | | | | | | |

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PEEK 13 Is at the Top of the Stack

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| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| 10 | 17 | 13 | | | | | | | |

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POP 13 Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| 10 | 17 | | | | | | | | |

-------------------------------------------------------------

POP 17 Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| 10 | | | | | | | | | |

-------------------------------------------------------------

POP 10 Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | | | | | | | | | |

-------------------------------------------------------------

PUSH R Was Added to the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | | | | | | | | |

-------------------------------------------------------------

PUSH E Was Added to the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | | | | | | | |

-------------------------------------------------------------

PUSH D Was Added to the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | R | | | | | | |

-------------------------------------------------------------

PUSH R Was Added to the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | R | U | | | | | |

-------------------------------------------------------------

PUSH U Was Added to the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | R | U | M | | | | |

-------------------------------------------------------------

PUSH M Was Added to the Stack

The Reverse: MURDER

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| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | R | U | M | | | | |

-------------------------------------------------------------

POP M Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | R | U | | | | | |

-------------------------------------------------------------

POP U Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | R | | | | | | |

-------------------------------------------------------------

POP R Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | D | | | | | | | |

-------------------------------------------------------------

POP D Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | E | | | | | | | | |

-------------------------------------------------------------

POP E Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

-------------------------------------------------------------

| R | | | | | | | | | |

-------------------------------------------------------------

POP R Was Removed From the Stack

-------------------------------------------------------------

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

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| | | | | | | | | | |

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