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Class: csc 211

```
#include<iostream>
#include<fstream>
using namespace std;

class TextLines{

	private:
		int len; // stores the length of lines present in the array

	public:

		string* lines;  // stores the array of lines
		int size;  // stores the size of the array

// Default constructor for setting default values
		TextLines(){

			size = 10;  // setting the default array size 10
			lines = new string[size];  // allocating memory

			len = 0;  // no elements would be initially in the array so keep len 0
		}
// Copy constructor
		TextLines(TextLines& line){

			this->lines = line.lines;
			this->size = line.size;
			this->len = line.Length();
		}
//// Fucntion for expanding the array when size is full
		void expandArray(){
// create a new string array of double size

			int newSize = this->size*2;

			string *newArr = new string[newSize];

// copy elements of old arrayy to new
			for(int i = 0; i<len; i++)
				newArr[i] = lines[i];
// delete alocated space for old
			delete []lines;
// points line to new array
```

```
                lines = newArr;

                this->size = newSize;
        }
//// constructor that takes an string paarmeter as filename
        TextLines(string filename):TextLines(){

                ifstream fin;

                fin.open(filename);

                string line;

                if(!fin.fail()){

                        while(!fin.eof()){

                                if(len >= size){
                                        expandArray();
                                }

                                getline(fin, line);

                                lines[len++] = line;

                        }
                }

                else{
                        cout<<"Error! File couldn't be open."<<endl;
                }
        }
// constructor that takes integer parameter and create an array
        TextLines(int size): TextLines(){

                lines = new string[size];

                this->size = size;
        }
// destructor
        ~TextLines(){
                delete []lines;
        }
// rmeove and return the last line
        string removeLast(){
```

```
            string el = lines[len-1];

            lines[len-1] = "";

            len +-1;

            return el;

        }
// for pushing a line at the end
        void pushBack(string line){

            if(len < size)
                lines[len++] = line;

            else{

                cout<<"No vacant space! We are expanding the array for taking your entry.\n";
                expandArray();
            }

        }
// for making the list empty
        void emptyTheList(){

            for(int i = 0; i<len; i++)
                lines[i] = "";

            len = 0;
        }
// return the length of lines array
        int Length(){
            return len;
        }

};

// main driver fucntion
int main(){

    TextLines t("Data.txt");

    cout<<"Length of array is "<<t.Length()<<endl;

    t.pushBack("Hi, I am programmer");
    t.pushBack("C++ is high-level language");
```

```
    t.pushBack("This program based on OOPs");
    t.pushBack("It uses pointers");
    t.pushBack("It uses dynamic array");

    cout<<"Length of array is after pushing 5 entries at last: "<<t.Length()<<endl;

    cout<<"Removing the last line: "<<t.removeLast()<<endl;

    cout<<"Emptying the list....."<<endl;
    t.emptyTheList();
    cout<<"Length of array is "<<t.Length()<<endl;

}
```

Data.txt file:

```
Javascript is a scripting language.
Python is purely OOP language.
Java is a platform independent language.
C++ is mainly used in Desktop applications.
```