```
//
//  main.cpp
//  Lab7a
//
//  Created by Michael Hannigan on 10/12/20.
//

#include <stdio.h>
#include<iostream>
using namespace std;
class pointerDataClass
{
private:
  int maxSize;//variable to store the maximum size of p
  int length;//variable to store the number of elements in p
  int *p;// pointer to an int array
public:
  //Constructor to create an array of the size specified by the parameter size.
  pointerDataClass(int size);
  //Destructor to deallocate the memory space occupied by the array p
  ~pointerDataClass();
  //the function insertAt inserts num into array p at the position specified by
  //index
  void insertAt(int index, int num);
  //The function displayData displays all the array elements in p
  void displayData();
   };
```

```
//
//  pointerDataClass.cpp
//  Lab7a
//
//  Created by Michael Hannigan on 10/12/20.
//

#include <stdio.h>
#include <iostream>
#include "pointerDataClass.hpp"
using namespace std;


pointerDataClass::pointerDataClass(int size){
    maxSize = size;
    length = maxSize-1;
    if(size<=maxSize)
        p = new int[size];
    else
        cout<<"The size is too big";
}

pointerDataClass::~pointerDataClass(){

}
```

```
void pointerDataClass::insertAt(int index, int num){
    if(index <= length)
        *(p+index) = num;
    else
        cout<<"Index is out of bounds";
}

void pointerDataClass::displayData(){
    for int i = 0; i<maxSize; i++)
    cout<<*(p+i)<<endl;
}
```

```
//
//  main.cpp
//  Lab7a
//
//  Created by Michael Hannigan on 10/13/20.
//

#include "pointerDataClass.hpp"
#include <stdio.h>
#include <iostream>

int main(){
    pointerDataClass list11 = pointerDataClass(10);
    for int i = 0; i<10; i++){
        list11.insertAt(i, i);
    }

    list11.displayData();
    cout<<endl;

    return 0;
}
```

//////////OUTPUT//////////

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

Program ended with exit code: 0
```