**ASSIGNMENT 10**

**1. Create a Dynamic Array Data Structure that performs all the actions of the ArrayList. It should create the new array of size 1.5 times the previous size. Hint: You need to create a class that extends and overrides all Arraylist's methods.**

package assignment10andminiproject;

import java.io.IOException;

import java.util.ArrayList;

import java.util.InputMismatchException;

import java.util.List;

import java.util.Scanner;

class ActionsOfTheArrayList extends ArrayList{

static Scanner scan=new Scanner(System.in);

int array[]=new int[10];

public int length=array.length;

int temp[];

public int increasingLength() {

int l=(int)((array.length)\*1.5);

return l;

}

public void add(int a) {

outer:for (int i=0;i<array.length;i++) {

if((array[i]!=0)&&(i==array.length-1)) {

length=array.length;

temp=new int[array.length];

for(int j=0;j<array.length;j++) {

temp[j]=array[j];}

array=new int[increasingLength()];

System.out.println("\*\*Now length of the array after increasing by 1.5 is: "+array.length);

for(int j=0;j<length;j++) {

array[j]=temp[j];

//System.out.println(array[j]);

}

array[length]=a;

//System.out.println("length:"+length+"new added element: "+a);

break outer;}

if(array[i]==0) {

array[i]=a;

break outer;}

}}

public void delete(int r) {

temp=new int[array.length];

for(int i=0;i<array.length;i++) {

if(array[i]==r) {

temp[i]=array[i+1];

}else

temp[i]=array[i];}

for(int i=0;i<array.length;i++) {

array[i]=temp[i];

}

}

void printArrayElements() {

//System.out.print("Here i am printing the elements of the array: ");

System.out.print("[");

for(int i=0;i<array.length;i++) {

System.out.print(array[i]);

if(i==array.length-1) {

continue;

}

System.out.print(", ");}

System.out.println("]");

}

}

public class CreateDynamicArrayDataStructure {

public static void main(String arg[]) throws InputMismatchException,IOException{

boolean b=true,p=true;

int element;

ActionsOfTheArrayList mylist=new ActionsOfTheArrayList();

try {

System.out.println("Please enter the 10 integer elements in the arraylist: ");

for(int i=0;i<10;i++) {

element=mylist.scan.nextInt();

mylist.add(element);}

while(b==true) {

System.out.println("1. Enter 'true' if you want to enter the numbers of elements of the arraylist." );

System.out.println("2. Enter 'false' if you don't want to print the elements of the arraylist." );

System.out.println("Please enter your option: ");

p=mylist.scan.nextBoolean();

System.out.println("Enter the element you want to add in the Arraylist: " );

//System.out.println("length of the array now: "+mylist.array.length);

element=mylist.scan.nextInt();

mylist.add(element);

System.out.println("1. Enter 'true' if you want to print the elements of the arraylist." );

System.out.println("2. Enter 'false' if you don't want to print the elements of the arraylist." );

System.out.println("Please enter your option: ");

p=mylist.scan.nextBoolean();

//System.out.println("Here you add "+element+" into the arraylist.");

if(p==true) {

System.out.println("The elements of the arraylist after adding "+element+" is: ");

mylist.printArrayElements();

}

System.out.println("1. Enter 'true' if you want to add more element in the arraylist." );

System.out.println("2. Enter 'false' if you don't want to add more element in the arraylist." );

System.out.println("Please enter your option: ");

b=mylist.scan.nextBoolean();

}

}catch(InputMismatchException ie) {

System.out.println("Please enter the valid data type for given options.");

}

catch(Exception e) {

System.out.println("Error has occured in the code.");

}

finally{

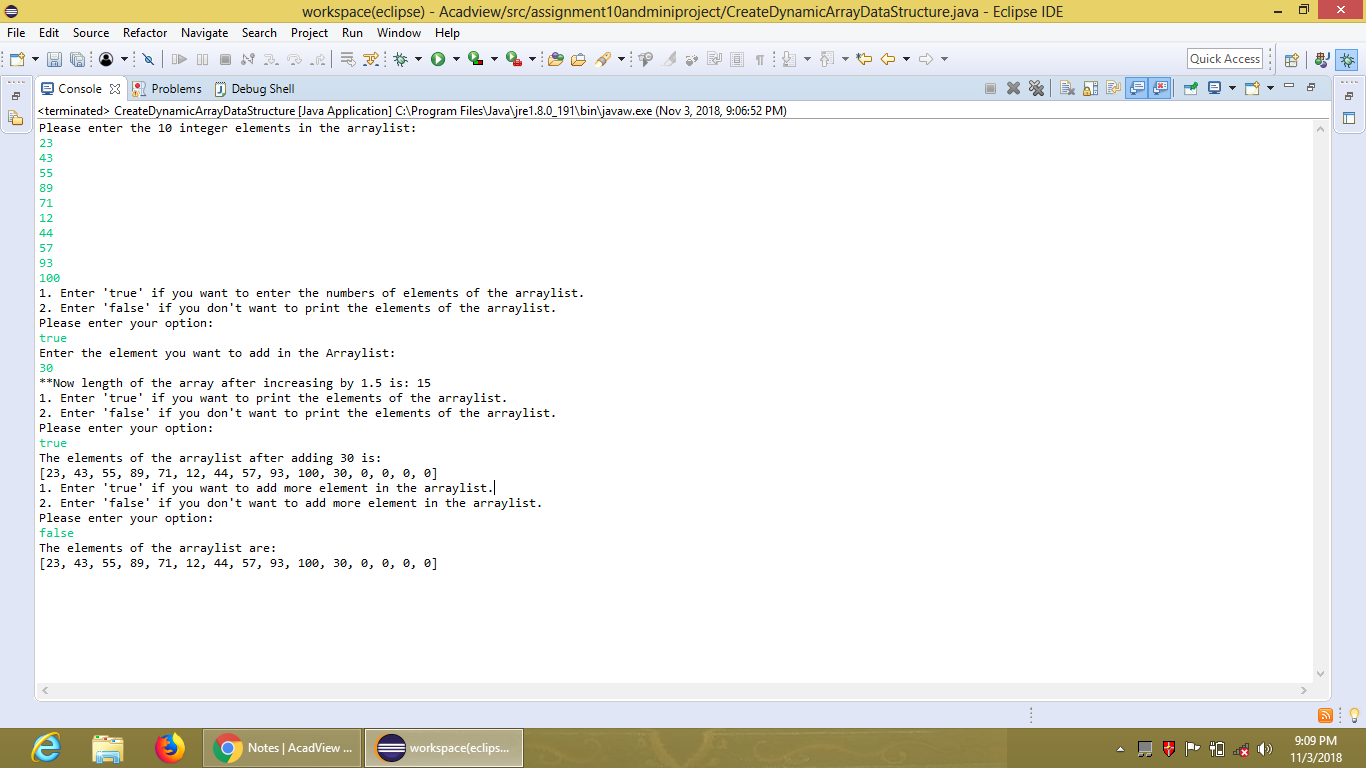
System.out.println("The elements of the arraylist are: ");

mylist.printArrayElements();

}

}}

**OUTPUT:**

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**2. Mini Project**

**So, summing up our last 3 assignments, we need to build a Mini Project with following steps: (Some of which have already been done as assignments in last 2 classes.)**

**(a) Create abc.txt with 2 paths.**

**(b) Recursively traverse all the files and folders to enlist all files with names and paths.**

**(c) Create an ArrayList of file paths.**

**(d) Create a csv file of the file names and file paths.**

package assignment10andminiproject;

import java.io.BufferedInputStream;

import java.io.BufferedOutputStream;

import java.io.BufferedReader;

import java.io.File;

import java.io.FileInputStream;

import java.io.FileNotFoundException;

import java.io.FileOutputStream;

import java.io.IOException;

import java.io.InputStream;

import java.io.InputStreamReader;

import java.util.ArrayList;

class MyFile{

void call(String s) {

File f=new File(s);

File fs[];

// System.out.println(s);

fs=f.listFiles();

System.out.println("\* "+f.getName()+ "; "+f.getPath());

System.out.println("Files under "+f.getName()+" are:");

for(int i=0;i<fs.length;i++) {

System.out.println((i+1)+". "+fs[i].getName()+"; "+fs[i].getPath());}

for(int i=0;i<fs.length;i++) {

if(fs[i].isDirectory()) {

call(fs[i].getPath());}

}}}

public class MiniProject{

public static void main(String arg[]) throws IOException {

File file=null;

FileInputStream fin=null;

BufferedInputStream bin=null;

try {

MyFile m=new MyFile();

String s="E:\\Acadview Assignment Files\\mini project folders\\abc.txt";

file=new File(s);

fin=new FileInputStream(file);

bin=new BufferedInputStream(fin);

InputStreamReader isr=new InputStreamReader(fin);

BufferedReader r=new BufferedReader(isr);

// int c,p=0;

s="";

// String s=null;

/\* while((c=bin.read())!=-1) {

s=s+(char)c;

}

System.out.println("The content of the given file 'abc.txt' is:");

System.out.println(s);

s="";\*/

while(s!=null) {

s=r.readLine();

if(s!=null) {

System.out.println(s);

m.call(s);}

//file=new File(r.readLine());

// m.call(file.getPath());

//}

}

}catch(FileNotFoundException fe) {

System.out.println("File is not found.");

}catch(Exception e) {

System.out.println("Error has occurred in the code.");}

finally {

fin.close();

bin.close();

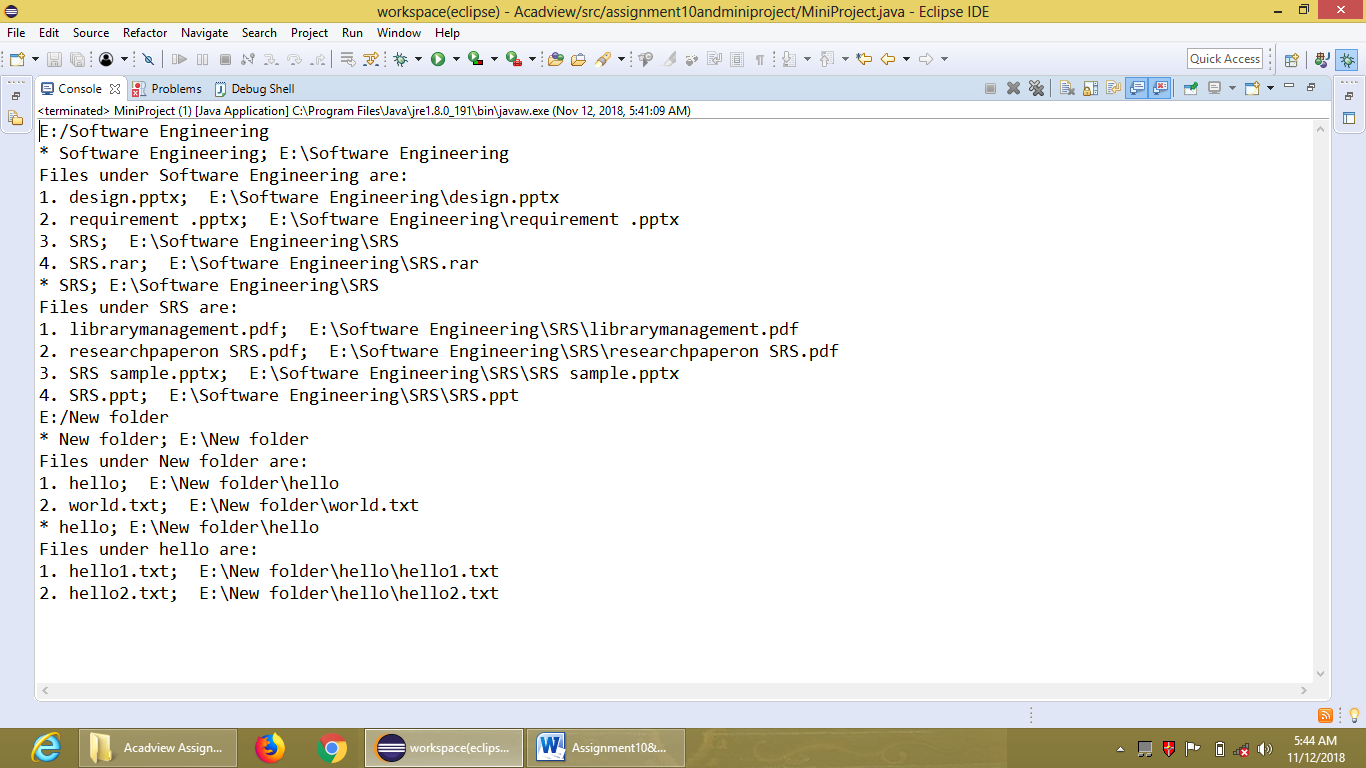
//bout.close();

}

}

}

**OUTPUT:**

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