Practical 7 A

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Roll no: 68

Subject: OOPS

Code:

```java
import java.util.Arrays;

class MyArray<T>{
Object[] array;
int indx;
int size;
MyArray(T obj[]){
size=5;
array=obj;
indx=0;
}
MyArray(){
size=5;
array = new Object[size];
indx=0;
}
MyArray(int s){
size=s;
array = new Object[size];
indx=0;
}
void add(T item){
if(indx<size){
array[indx++]=item;
System.out.println("Item added successfully");
}else{
this.grow();
this.add(item);
}
```

```java
}
private void grow(){
size=size+(int)(size*0.5);
array= Arrays.copyOf(array,size);
}
public T get(int i){
if(i<0 || i>size-1){
System.out.println("Exeption:Invalid index");
}
return (T)array[i];
}
public void swap(int i,int j){
if(i>indx||j>indx){
System.out.println("Exception:Invalid indices");
}else{
Object temp=array[i];
array[i]=array[j];
array[j]=temp;
}
}
}
public class one {
public static void main(String[] args) {
System.out.println("Integer\n");
MyArray<Integer> arr = new MyArray<>();
for(int i=0;i<10;i++){
arr.add(i);
}
System.out.println("\n\n");
for(int i=0;i<10;i++){
System.out.println("index:" +(i+1)+" "+arr.get(i));
}
System.out.println("\n\nDouble\n");
MyArray<Double> firstarray = new MyArray<>();
for(int i=0;i<10;i++){
firstarray.add((double)i*1.0+1);
```

```java
        }
        System.out.println("\n\n");
        for(int i=0;i<10;i++){
        System.out.println("index:" +(i+1)+"
        "+firstarray.get(i));
        }
        firstarray.swap(3,7);
        System.out.println("After swapping\n");
        for(int i=0;i<10;i++){
        System.out.println("index:" +(i+1)+"
        "+firstarray.get(i));
        }
        System.out.println("\n\nString\n");
        MyArray<String> Secondarray= new MyArray<>();
        for(int i=0;i<10;i++){
        Secondarray.add("String arraylist");
        }
        System.out.println("\n\n");
        for(int i=0;i<10;i++){
        System.out.println("index:" +(i+1)+"
        "+Secondarray.get(i));
        }
        }
        }
```

Output:

"C:\Program Files\Java\jdk-20\bin\java.exe"
"-javaagent:D:\IntelliJ\IntelliJ IDEA Community
Edition
2023.1.2\lib\idea_rt.jar=50012:D:\IntelliJ\IntelliJ IDEA
Community Edition 2023.1.2\bin"
-Dfile.encoding=UTF-8
-Dsun.stdout.encoding=UTF-8
-Dsun.stderr.encoding=UTF-8 -classpath
"E:\RCOEM 4TH Semester\Java VSC
(Errors)\LabPracticals\Practical7\out\production\Prac
tical7" one
Integer

Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully

index:1 0
index:2 1
index:3 2
index:4 3
index:5 4
index:6 5
index:7 6
index:8 7
index:9 8
index:10 9

Double

Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully

Item added successfully
Item added successfully
Item added successfully

index:1 1.0
index:2 2.0
index:3 3.0
index:4 4.0
index:5 5.0
index:6 6.0
index:7 7.0
index:8 8.0
index:9 9.0
index:10 10.0
After swapping

index:1 1.0
index:2 2.0
index:3 3.0
index:4 8.0
index:5 5.0
index:6 6.0

index:7 7.0
index:8 4.0
index:9 9.0
index:10 10.0

String

Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully
Item added successfully

index:1 String arraylist
index:2 String arraylist
index:3 String arraylist

index:4 String arraylist
index:5 String arraylist
index:6 String arraylist
index:7 String arraylist
index:8 String arraylist
index:9 String arraylist
index:10 String arraylist

Process finished with exit code 0