东北林业大学

java程序设计 课程评价

首页　　任务　　统计　　资料　　通知　　作业　　考试　　分组任务(PBL)　　讨论　　体验新

P6-集合编程题　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　返回

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一.简答题 (共4题,100.0分)

1　过滤代码格式

提供以下可直接使用的User类，直接使用getter/setter方法。

编写测试类主函数，模拟创建5个用户，分属3个不同城市

创建Set集合，添加以上元素对象。思考，为什么使用Set集合？

```java
public class User {

    private int id;

    private String name;

    private String city;


    public User(int id, String name, String city) {

        this.id = id;

        this.name = name;

        this.city = city;

    }

    // 省略getter/setter方法

}
```

正确答案：
```java
User u1 = new User(1, "BO", "哈尔滨");
User u2 = new User(2, "SUN", "北京");
User u3 = new User(3, "ZHANG", "哈尔滨");
User u4 = new User(4, "LIU", "北京");
User u5 = new User(5, "ZHAO", "上海");
Set<User> users = new HashSet<>();
users.add(u1); users.add(u2); users.add(u3);
users.add(u4); users.add(u5);
```

我的答案：
```java
import java.util.*;
class User {
private int id;
private String name;
private String city;

public User(int id, String name, String city) {
    this.id = id;
    this.name = name;
    this.city = city;
}

public void setterId(int id) {
this.id=id;
}
public void setterName(String name) {
this.name=name;
```

```
    }
    public void setterCity(String city) {
    this.city=city;
    }
    public int getterId() {
    return id;
    }
    public String getterName() {
    return name;
    }
    public String getterCity() {
    return city;
    }

}
public class Main {
public static void main(String[] args) {
Set<User> users = new HashSet<>();
User user = new User(0, "BO", "BeiJing");
    User user1 = new User(1,"SUN","Harbin");
    User user2 = new User(2,"LI","DeZhou");
    User user3 = new User(3,"SU","BeiJIng");
    User user4 = new User(4,"YUE","Harbin");
    users.add(user);
    users.add(user1);
    users.add(user2);
    users.add(user3);
    users.add(user4);
    for (User u : users) {

        System.out.println(u.getterName()+"  "+u.getterCity());
    }
}
}
```

```
<terminated> Main (1)
 SUN   Harbin
 BO    BeiJing
 LI    DeZhou
 YUE   Harbin
 SU    BeiJIng
```

Set 集合的特点是无重复

2　创建静态方法，传入封装User类型元素的Set集合，转为List集合返回。不同集合类型对象相互转换的简单方式？

正确答案：
```
private static void toList(Set<User> users) {
    List<User> userList = new ArrayList<>(users);
  }
```

我的答案：
```
import java.util.*;

    class User {
    private int id;
    private String name;
    private String city;

    public User(int id, String name, String city) {
       this.id = id;
       this.name = name;
       this.city = city;
    }

    public void setterId(int id) {
    this.id=id;
    }
    public void setterName(String name) {
```
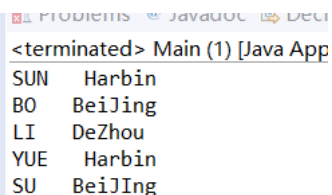
```
this.name=name;
}
public void setterCity(String city) {
this.city=city;
}
public int getterId() {
return id;
}
public String getterName() {
return name;
}
public String getterCity() {
return city;
}

}
   public class Main {
      public static void main(String[] args) {
         getAddElement();
      }
      private static void getAddElement() {
         Set<User> users = new HashSet<>();
      User user = new User(0, "BO", "BeiJing");
         User user1 = new User(1,"SUN","Harbin");
         User user2 = new User(2,"LI","DeZhou");
         User user3 = new User(3,"SU","BeiJIng");
         User user4 = new User(4,"YUE","Harbin");
         users.add(user);
         users.add(user1);
         users.add(user2);
         users.add(user3);
         users.add(user4);
         /*System.out.println(users.size());
         users.add(user);
         System.out.println(users.size());
         */
         List<User> userList = new ArrayList<>(users);
         for (User u : users) {

            System.out.println(u.getterName()+"   "+u.getterCity());
         }
      }
   }
```

```
<terminated> Main (1) [Java App
 SUN    Harbin
 BO     BeiJing
 LI     DeZhou
 YUE    Harbin
 SU     BeiJIng
```

---

3   创建静态方法，传入封装User类型元素的Set集合，以及用户ID，基于迭代器，在集合移除指定ID用户。方法参

数?

正确答案:

```
private static void remove(Set<User> users, int id) {
    Iterator<User> userIterator = users.iterator();
    while (userIterator.hasNext()) {
       User u = userIterator.next();
       if (id == u.getId()) {
          userIterator.remove();
       }
    }
}
```

我的答案:

```java
import java.util.*;

class User {
private int id;
private String name;
private String city;

public User(int id, String name, String city) {
    this.id = id;
    this.name = name;
    this.city = city;
}

public void setterId(int id) {
this.id=id;
}
public void setterName(String name) {
this.name=name;
}
public void setterCity(String city) {
this.city=city;
}
public int getterId() {
return id;
}
public String getterName() {
return name;
}
public String getterCity() {
return city;
}

}
public class Main {
    public static void main(String[] args) {
        getAddElement();
    }
    private static void getAddElement() {
        Set<User> users = new HashSet<>();
    User user = new User(0, "BO", "BeiJing");
        User user1 = new User(1,"SUN","Harbin");
        User user2 = new User(2,"LI","DeZhou");
        User user3 = new User(3,"SU","BeiJIng");
        User user4 = new User(4,"YUE","Harbin");
        users.add(user);
        users.add(user1);
        users.add(user2);
        users.add(user3);
        users.add(user4);
        /*System.out.println(users.size());
        users.add(user);
        System.out.println(users.size());
        */
        users=change(users,3);
        for (User u : users) {

            System.out.println(u.getterId()+"  "+u.getterName()+"  "+u.getterCity());
        }
    }
    public static Set<User> change(Set<User> users,int Id) {
    Iterator<User> iUsers=users.iterator();
    while(iUsers.hasNext()) {
    User u=iUsers.next();
    if(u.getterId()==Id) {
    iUsers.remove();
    }
    }
    return users;
    }
    }
```

```
Problems  @ Javadoc  Declaration  Console ⊠  Cove
<terminated> Main (1) [Java Application] C:\Program Files\Java
 1   SUN    Harbin
 0   BO     BeiJing
 2   LI     DeZhou
 4   YUE    Harbin
```

4 创建静态方法，传入封装User类型元素的Set集合，将集合中元素，以城市名称为键，相同城市用户集合为值，分

组

传入测试集合，调用测试

正确答案：
```java
private static void toMap(Set<User> users) {
    Map<String, Set<User>> map = new HashMap<>();
    for (User u : users) {
        Set<User> set = map.getOrDefault(u.getCity(), new HashSet<>());
        set.add(u);
        map.put(u.getCity(), set);
        /*Set<User> set = map.get(u.getCity());
        if (set == null) {
            set = new HashSet<>();
            map.put(u.getCity(), set);
        }
        set.add(u);*/
    }
}
```

我的答案：
```java
import java.util.*;

    class User {
    private int id;
    private String name;
    private String city;

    public User(int id, String name, String city) {
        this.id = id;
        this.name = name;
        this.city = city;
    }

    public void setterId(int id) {
this.id=id;
}
public void setterName(String name) {
this.name=name;
}
public void setterCity(String city) {
this.city=city;
}
public int getterId() {
return id;
}
public String getterName() {
return name;
}
public String getterCity() {
return city;
}

}
    public class Main {
```

```java
    private static Set<User> getAddElement(){
        Set<User> users = new HashSet<>();
    User user = new User(0, "BO", "BeiJing");
        User user1 = new User(1,"SUN","Harbin");
        User user2 = new User(2,"LI","DeZhou");
        User user3 = new User(3,"SU","BeiJIng");
        User user4 = new User(4,"YUE","Harbin");
        users.add(user);
        users.add(user1);
        users.add(user2);
        users.add(user3);
        users.add(user4);
        /*System.out.println(users.size());
        users.add(user);
        System.out.println(users.size());
        */
        return users;
    }
    public static void main(String[] args) {
        Map<String,Set<User>> map=setToMap(getAddElement());
        for(String c:map.keySet()) {
        Set<User> s=map.get(c);
        for (User u : s) {

            System.out.println(u.getterId()+"  "+u.getterName()+"  "+u.getterCity());
        }
        }
    }
    public static Map<String,Set<User>> setToMap(Set<User> s) {
        Map<String,Set<User>> map=new HashMap<>();
for(User u:s) {
Set<User> ss=map.get(u.getterCity());
if(ss==null) {
ss=new HashSet<User>();
map.put(u.getterCity(),ss);
}
ss.add(u);
}
return map;
}
}
```

```
Problems  @ Javadoc  Declaration  C
<terminated> Main (1) [Java Application] C:\P
0    BO    BeiJing
3    SU    BeiJIng
2    LI    DeZhou
1    SUN   Harbin
4    YUE   Harbin
```