

골라보시계

OOPT 3rd Cycle : Revision

Team #1

201411273 박재범

201411275 박진호

201411311 장원영

201311313 정인원

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01 GUI Arrangement

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GUI Arrangement

1. GUI Arrangement

- 1) Font 크기와 위치 조정
- 2) 기능 Name Tag을 시계 화면 밖으로 이동
- 3) Alarm Indicator의 위치를 중앙으로 이동하고 Alarm List가 비어있지 않고 Alarm 기능이 On인 상태에서에서만 표시되도록 수정
- 4) Alarm Indicator 아이콘 변경



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Static Analysis Feedback

2. Static Analysis Feedback

1) FindBugs

6개의 Major 문제에 대한 처리

The screenshot displays a list of FindBugs issues from a static analysis tool. Each issue is presented in a light orange card with a red border. The issues are:

- Unread field: Alarm.funcNum** (2 hours ago, L16, performance): A Major bug in Alarm.java.
- Unused field: Buzzer.duration** (2 hours ago, L1, performance): A Major bug in Buzzer.java.
- Unused field: Buzzer.interval** (2 hours ago, L1, performance): A Major bug in Buzzer.java.
- Unread field: AlarmList.manageSnooze** (2 hours ago, L26, performance): A Major bug in AlarmList.java.
- Uninitialized read of view in new Timer(View, Buzzer)** (2 hours ago, L21, correctness): A Major bug in Timer.java.
- The class name mgUI doesn't start with an upper case letter** (20 minutes ago, L7, bad-practice): A Code Smell in mgUI.java.

Each issue card includes a severity indicator (Major), a status (Open), an effort estimate (30min), and a category (performance or correctness). The bottom of the list shows "5 of 5 shown".

2. Static Analysis Feedback

a) Unread field: Alarm.funcNum

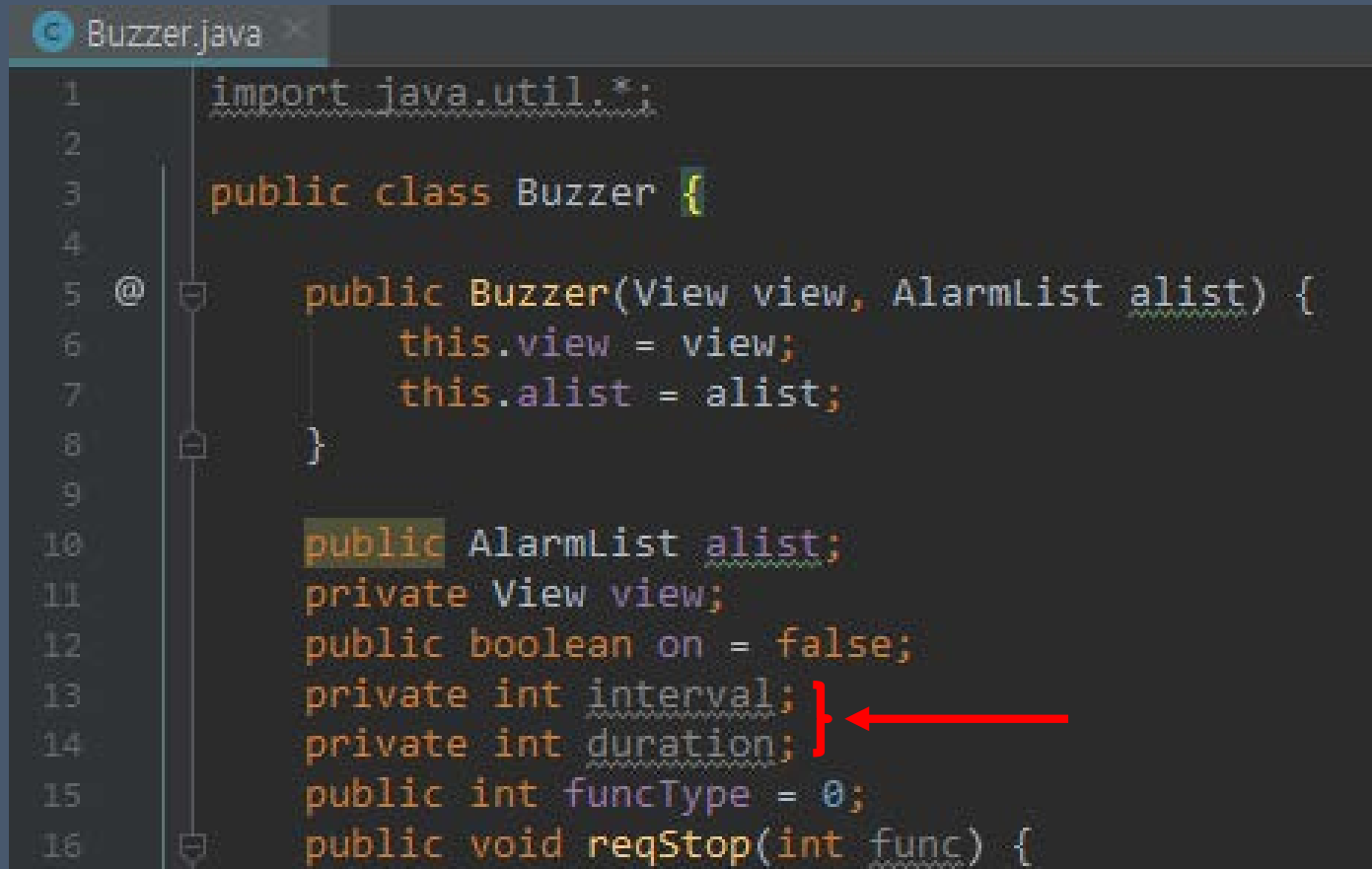
```
Alarm.java x
1  import ...
4
5  public class Alarm {
6
7      public Alarm(View view, AlarmList alist, Buzzer buzzer) {
8          this.view = view;
9          this.alist = alist;
10         this.buzzer = buzzer;
11     }
12
13
14     public Buzzer buzzer;
15     private View view;
16     private int funcNum = 4; ←
17     public Vector alarm = new Vector();
18     //Delete eLCD[]
19     //Added from here
20     AlarmList alist;
```

▶ 사용하지 않는 funcNum 변수 삭제

2. Static Analysis Feedback

b) Unused field: Buzzer.duration(interval)

```
Buzzer.java
1  import java.util.*;
2
3  public class Buzzer {
4
5  @ public Buzzer(View view, AlarmList alist) {
6      this.view = view;
7      this.alist = alist;
8  }
9
10 public AlarmList alist;
11 private View view;
12 public boolean on = false;
13 private int interval;
14 private int duration;
15 public int funcType = 0;
16 public void reqStop(int func) {
```



▶ 사용하지 않는 duration, interval 변수 삭제

2. Static Analysis Feedback

c) Unread field: AlarmList.manageSnooze

```
AlarmList.java
1  import java.util.*;
2
3  public class AlarmList {
4
5      public AlarmList(View view) {
6      }
7
8      public Vector alarm = new Vector( initialCapacity: 10);
9      Thread manageSnooze;
10     public int index = 0;
11
12     public Vector getAlarmList(int indexNum) {
13         // TODO implement here
14         Vector rtVector = new Vector();
15         rtVector.add((String)alarm.elementAt(indexNum));
16
17         return rtVector;
18     }
19
20     @ public void updateList(Vector recvData) {
21         // TODO implement here
22         alarm.add((String)recvData.elementAt( index: 0));
23     }
24
25     public void snooze(){
26         manageSnooze = new Thread(){
27
28         };
29     }
30 }
```

▶ 구현 중 취소된 Dummy Method 삭제

2. Static Analysis Feedback

d) Uninitialized read of view in new Timer(View, Buzzer)

```
import ...

public class Timer {

    public Timer(View view, Buzzer buzzer) {
        this.view = view;
        this.buzzer = buzzer;
    }

    public Buzzer buzzer;
    public View view;
    public int funcNum = 2;
    public TimerData timer = new TimerData(view);
    public Thread timerThread;
    public int part = 1;
    public int saveValue = 0;
}
```

```
import ...

public class Timer {

    public Timer(View view, Buzzer buzzer) {
        this.view = view;
        this.buzzer = buzzer;
        timer = new TimerData(view);
    }

    public Buzzer buzzer;
    public View view;
    public int funcNum = 2;
    public TimerData timer;
    public Thread timerThread;
    public int part = 1;
    public int saveValue = 0;
}
```

▶ new TimeData의 인수인 view를 초기화한 뒤에 사용하도록 수정

2. Static Analysis Feedback

e) The class name rngUI doesn't start with an upper case letter

▶ 임시로 만들고 사용하지 않은 rngUI Class 제거

2. Static Analysis Feedback

2) PMD

39개의 Critical 문제에 대한 처리

Display Mode

Issues Effort

▼ Type Clear

- Bug 0
- Vulnerability 0
- Code Smell 39**

▼ Severity Clear

- Blocker 0
- Critical 39**
- Major 1.5k
- Minor 895
- Info 35

team1 / 19-06-02 Watch 0.6.2_BugFix/src/main/java/AlarmUI.java

Avoid empty catch blocks --- 9 minutes ago L167 error-handling

Code Smell Critical Open Not assigned 10min effort

team1 / 19-06-02 Watch 0.6.2_BugFix/src/main/java/RandomDirectionGeneratorUI.java

Avoid empty catch blocks --- 9 minutes ago L23 error-handling

Code Smell Critical Open Not assigned 10min effort

team1 / 19-06-02 Watch 0.6.2_BugFix/src/main/java/RandomDirectionGeneratorUI.java

Avoid empty catch blocks --- 9 minutes ago L40 error-handling

Code Smell Critical Open Not assigned 10min effort

team1 / 19-06-02 Watch 0.6.2_BugFix/src/main/java/RandomDirectionGeneratorUI.java

Avoid empty catch blocks --- 9 minutes ago L54 error-handling

Code Smell Critical Open Not assigned 10min effort

team1 / 19-06-02 Watch 0.6.2_BugFix/src/main/java/RandomDirectionGeneratorUI.java

Avoid empty catch blocks --- 9 minutes ago L63 error-handling

Code Smell Critical Open Not assigned 10min effort

team1 / 19-06-02 Watch 0.6.2_BugFix/src/main/java/RandomNumberGeneratorUI.java

Avoid empty catch blocks --- 9 minutes ago L100 error-handling

Code Smell Critical Open Not assigned 10min effort

Avoid empty catch blocks --- 9 minutes ago L109 error-handling

Code Smell Critical Open Not assigned 10min effort

Avoid empty catch blocks --- 9 minutes ago L123 error-handling

Code Smell Critical Open Not assigned 10min effort

Avoid empty catch blocks --- 9 minutes ago L136 error-handling

Code Smell Critical Open Not assigned 10min effort

Avoid empty catch blocks --- 9 minutes ago L157 error-handling

Code Smell Critical Open Not assigned 10min effort

39 of 39 shown

2. Static Analysis Feedback

All #) Avoid empty catch blocks

```
SelectFunctionUI.java x
100      ActionListener listener = new ActionListener() {
101      public void actionPerformed(ActionEvent listener) {
102          try {
103              if(view.checkfunc( funcNum: 7) == 0) {
104                  return;
105              }
106              selectfunction.setFunction(0);
107              showSet();
108          }
109          catch (RuntimeException e) {
110              e.printStackTrace();
111          }
112      }
113  };
```

▶ Exception catch block에 printStackTrace() 추가

2. Static Analysis Feedback

3) CheckStyle

24개의 Blocker 문제와 Critical 중 일부 처리

Display Mode

Issues Effort

▼ Type Clear

Bug	171
Vulnerability	6
Code Smell	4.3k

▼ Severity Clear

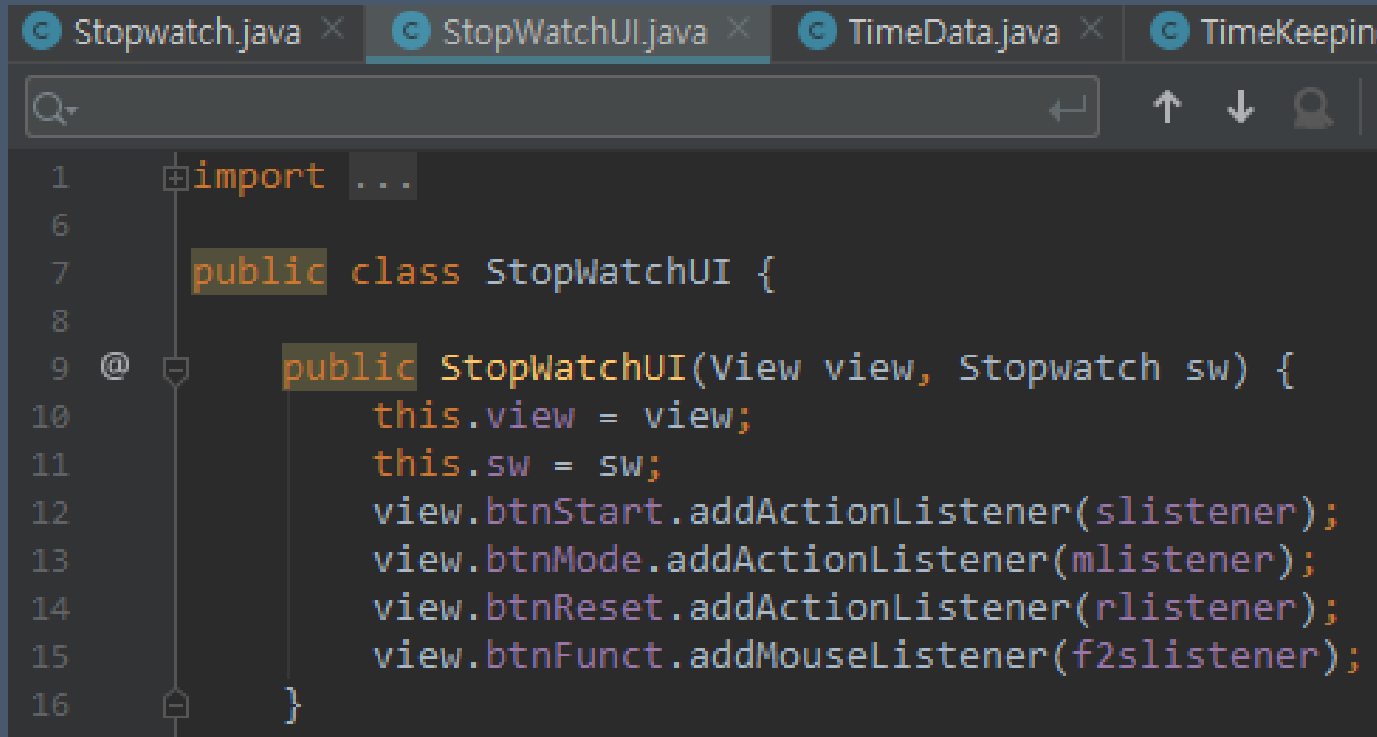
Blocker	24	Minor	5.8k
Critical	314	Info	435
Major	4.2k		

team1 / 19-06-02 Watch 0.6.2_BugFix/src/main/java/Alarm.java

- Add or update the header of this file. ... 20 minutes ago ... Code Smell Blocker Open Not assigned 5min effort Comment No tags
- 149 more lines of code need to be covered by tests to reach the minimum threshold of 65.0% lines coverage. ... 20 minutes ago ... Code Smell Major Open Not assigned 4h58min effort Comment bad-practice
- 59 more comment lines need to be written to reach the minimum threshold of 25.0% comment density. ... 20 minutes ago ... Code Smell Major Open Not assigned 1h58min effort Comment convention
- 2 duplicated blocks of code must be removed. ... 20 minutes ago ... Code Smell Major Open Not assigned 30min effort Comment pitfall
- Explicitly import the specific classes needed. ... 20 minutes ago L3 Code Smell Critical Open Not assigned 5min effort Comment pitfall
- All classes and interfaces must belong to a named package ... 20 minutes ago L345 Code Smell Major Open Not assigned 10min effort Comment No tags
- Possible God Class (WMC=70, ATFD=9, TCC=31.818%) ... 20 minutes ago L345 Code Smell Major Open Not assigned 2h effort Comment No tags
- The class 'Alarm' has a Modified Cyclomatic Complexity of 3 (Highest = 20). ... 20 minutes ago L345 Code Smell Major Open Not assigned 1h effort Comment size
- The class 'Alarm' has a Standard Cyclomatic Complexity of 5 (Highest = 46). ... 20 minutes ago L345 Code Smell Major Open Not assigned 1h effort Comment size
- Too many fields ... 20 minutes ago L345 Code Smell Major Open Not assigned 1h effort Comment size
- Found non-transient, non-static member. Please mark as transient or provide accessors. ... 20 minutes ago L14 Code Smell Major Open Not assigned 30min effort Comment No tags
- Variable 'buzzer' must be private and have accessor methods. ... 20 minutes ago L14 Code Smell Major Open Not assigned 10min effort Comment No tags

2. Static Analysis Feedback

a) Add or update the header of this file.



The screenshot shows an IDE with four tabs: Stopwatch.java, StopWatchUI.java (selected), TimeData.java, and TimeKeepin... The code in StopWatchUI.java is as follows:

```
1  import ...
6
7  public class StopwatchUI {
8
9  @
10     public StopwatchUI(View view, Stopwatch sw) {
11         this.view = view;
12         this.sw = sw;
13         view.btnStart.addActionListener(slistener);
14         view.btnMode.addActionListener(mlistener);
15         view.btnReset.addActionListener(rlistener);
16         view.btnFunct.addMouseListener(f2slistener);
17     }
```

▶ 파일이 꼭 header를 포함해야 하는가? No

2. Static Analysis Feedback

b) Add an end condition to this loop.

```
private Thread manage = new Thread(new Runnable() {  
    public void run() {  
        while(true) {...}  
    }  
});
```

- ▶ **TimeData**는 현재 시간을 관리하는 **Class**로 **run() Method**는 시계가 시작하고 꺼질 때까지 계속 유지되어야 함(**TimeKeeping** 기능은 항상 **On**) 따라서 **break**를 필요로 하지 않음

2. Static Analysis Feedback

c) Add a default case to this switch.

```
252 case 9://tue
253     tue = 0;
254     break;
255 case 10://wed
256     wed = 0;
257     break;
258 case 11://thu
259     thu = 0;
260     break;
261 case 12://fri
262     fri = 0;
263     break;
264 case 13://sat
265     sat = 0;
266     break;
267 default: } ←
268     break;
269 }
```

▶ 모든 Case문에 default 옵션을 추가

Thank You

`return 0;`

— Thank You —

Q&A