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*Software V&V* Static Analysis

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## 1.Specification Review

### Jira를 통한 개발팀과의 소통

VMP-15 /  VMP-52

#### #sds\_17,18,19

 첨부  하위 작업 생성  이슈 연결  

#### 설명

Exceptional Course of Events 내에 개재되어 있는 [지정된 범위에서 벗어나는 경우]의 자세한 내용이 필요할 해당 정보가 어떤 범위 내에 있어야 하는지 설명이 있어야 함

#### 활동

표시:  댓글  기록  작업 로그

 최신 항목 먼저 ↓



댓글 추가...

프로 팁: 눌러서  댓글 추가



2468abcde 6일 전

**SDS:** [지정된 범위에서 벗어나는 경우]에 대한 내용 추가

#17: 재고의 경우 0~99사이의 정수, 가격의 경우 정수만 입력 가능

#18: VM ID의 경우, 0~999 사이의 정수만 입력 가능

#19: 연락처의 경우 지정된 범위를 벗어나는 경우가 없으므로 삭제

[편집](#) · [삭제](#) · 

# 1.Specification Review

누락 된 부분 or 필요 없는 부분 -> 삭제

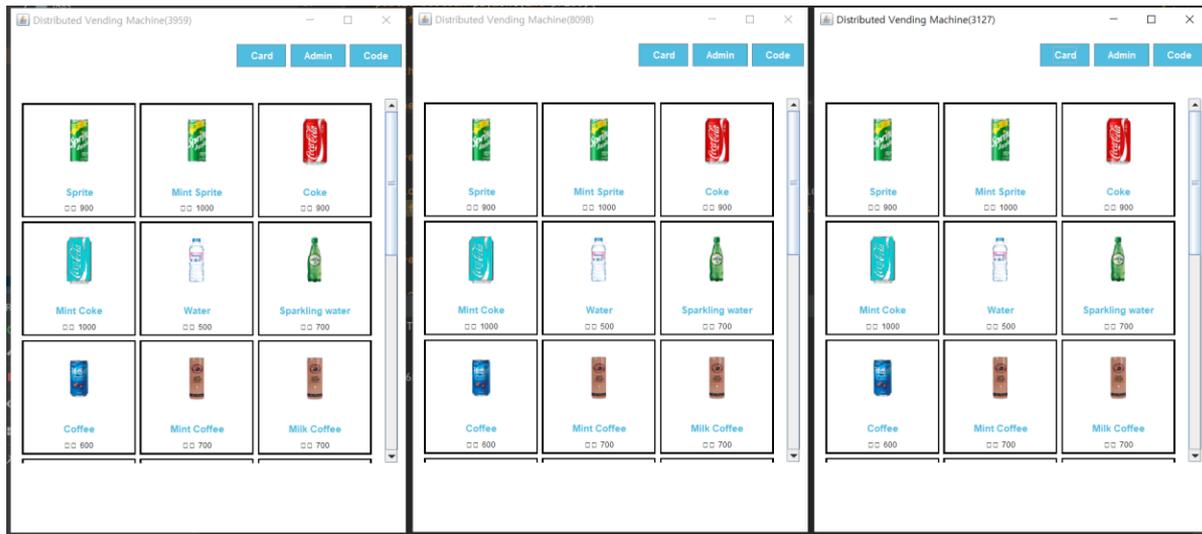
issue #	SRS #	Description
VMP-41	#3.2.2.5	SDS 내에 해당 함수를 구현 및 사용하지 않는다고 되어있는데 문서내에 존재해야 하는 이유 or 삭제가 필요
respond	<b>SRS, SDS:</b> 개발 도중 삭제된 내용이므로 SRS, SDS에서 해당 내용 삭제	
issue #	SRS #	Description
VMP-42	#3.2.1.5	DVM의 위치를 출력하는 Window가 누락되어 있음
respond	<b>SRS, SDS:</b> VM의 위치 표시의 경우 초기 설계가 잘못되었다 생각하여 문서에서 삭제	
issue #	SDS #	Description
VMP-51	#15	14.notify vm's info -> 11.notify vm's info 15. confirm prepay -> 12.confirm prepay cross reference에 1.show menu에 화면 초기화를 한다는 의미로 이해가 되는데 이에 대한 설명이 없음 수정필요
respond	<b>SDS:</b> cross reference 작성 실수로 생각되어 삭제	

# 1.Specification Review

## 구체화 및 수치 업데이트

issue #	SDS #	Description
VMP-52	#17,18,19	Exceptional Course of Events 내에 개재되어 있는 [지정된 범위에서 벗어나는 경우]의 자세한 내용이 필요함 해당 정보가 어떤 범위 내에 있어야 하는지 수치로 설명이 있어야함
respond	<b>SDS:</b> [지정된 범위에서 벗어나는 경우]에 대한 내용 추가 #17: 재고의 경우 0~99 사이의 정수, 가격의 경우 정수만 입력 가능 #18: VM ID의 경우, 0~999 사이의 정수만 입력 가능 #19: 연락처의 경우 지정된 범위를 벗어나는 경우가 없으므로 삭제	
issue #	SRS #	Description
VMP-67	#3.1.1	1) '자판기 리스트는 아이콘 형태로 보여지고 사용자는 이를 클릭하여 자판기를 선택할 수 있다' 해당 내용은 사용자가 맨 처음 자판기에서 음료를 고르기 전 단계를 의미하는 것인지 혹은 현재 재고가 없어 다른 VM을 안내 받는 상황을 의미하는 것인지 둘 다인지 명시할 것 2) 취소 버튼은 모든 화면에서 활성화되는 것인지 혹은 특정 화면에서만 활성화되는 것인지 명시
respond	<b>SRS:</b> 1) '재고가 없거나 판매하지 않는 제품을 선택할 시' 라는 문구를 삽입하여 음료를 고른 후라는 상황을 명시 2) 취소 버튼의 경우 결제 알림에서 가능하다는 것을 명시	

Testing environment



로컬에서 n개의 자판기를 실행시켜 통신 수행 ( $n \leq 10$ )

## 2.Brute Force Testing

	PASS	FAIL	BLOCKED	TOTAL	passed rate
1st testing	28	20	-	48	58.33%
2nd testing	<b>45</b>	<b>3</b>	-	48	<b>93.75%</b>

1,2차 brute force testing 결과 비교

## 2.Brute Force Testing

<input type="checkbox"/> VMP-116	PASS	BFT-1	-	<input type="checkbox"/> VMP-132	FAIL	BFT-17	-	<input type="checkbox"/> VMP-149	PASS	BFT-34	-
<input type="checkbox"/> VMP-117	PASS	BFT-2	-	<input type="checkbox"/> VMP-133	PASS	BFT-18	-	<input type="checkbox"/> VMP-150	PASS	BFT-35	-
<input type="checkbox"/> VMP-118	PASS	BFT-3	-	<input type="checkbox"/> VMP-134	PASS	BFT-19	-	<input type="checkbox"/> VMP-151	PASS	BFT-36	-
<input type="checkbox"/> VMP-119	PASS	BFT-4	-	<input type="checkbox"/> VMP-135	PASS	BFT-20	-	<input type="checkbox"/> VMP-152	FAIL	BFT-37	-
<input type="checkbox"/> VMP-120	PASS	BFT-5	-	<input type="checkbox"/> VMP-136	PASS	BFT-21	-	<input type="checkbox"/> VMP-153	PASS	BFT-38	-
<input type="checkbox"/> VMP-121	PASS	BFT-6	-	<input type="checkbox"/> VMP-137	PASS	BFT-22	-	<input type="checkbox"/> VMP-154	PASS	BFT-39	-
<input type="checkbox"/> VMP-122	PASS	BFT-7	-	<input type="checkbox"/> VMP-138	PASS	BFT-23	-	<input type="checkbox"/> VMP-155	FAIL	BFT-40	-
<input type="checkbox"/> VMP-123	PASS	BFT-8	-	<input type="checkbox"/> VMP-139	PASS	BFT-24	-	<input type="checkbox"/> VMP-156	PASS	BFT-41	-
<input type="checkbox"/> VMP-124	PASS	BFT-9	-	<input type="checkbox"/> VMP-140	PASS	BFT-25	-	<input type="checkbox"/> VMP-157	PASS	BFT-42	-
<input type="checkbox"/> VMP-125	PASS	BFT-10	-	<input type="checkbox"/> VMP-141	PASS	BFT-26	-	<input type="checkbox"/> VMP-158	PASS	BFT-43	1   0 VMP-165
<input type="checkbox"/> VMP-126	PASS	BFT-11	-	<input type="checkbox"/> VMP-142	PASS	BFT-27	-	<input type="checkbox"/> VMP-159	PASS	BFT-44	-
<input type="checkbox"/> VMP-127	PASS	BFT-12	-	<input type="checkbox"/> VMP-143	PASS	BFT-28	-	<input type="checkbox"/> VMP-160	PASS	BFT-45	-
<input type="checkbox"/> VMP-128	PASS	BFT-13	-	<input type="checkbox"/> VMP-144	PASS	BFT-29	-	<input type="checkbox"/> VMP-161	PASS	BFT-46	-
<input type="checkbox"/> VMP-129	PASS	BFT-14	-	<input type="checkbox"/> VMP-145	PASS	BFT-30	-	<input type="checkbox"/> VMP-162	PASS	BFT-47	-
<input type="checkbox"/> VMP-130	PASS	BFT-15	-	<input type="checkbox"/> VMP-146	PASS	BFT-31	-	<input type="checkbox"/> VMP-163	PASS		
<input type="checkbox"/> VMP-131	PASS	BFT-16	-	<input type="checkbox"/> VMP-147	PASS	BFT-32	-				
				<input type="checkbox"/> VMP-148	PASS	BFT-33	-				

테스트 케이스 통과  
45/48 = 93.75%

## 2.Brute Force Testing

테스팅 과정에서 발견한 버그들을 이슈로 새로 등록

VMP-169 BFT-40 테스트 버그

VMP-168 BFT-37 테스트 버그

VMP-167 BFT-17 테스트 버그

프로젝트 /  Vending Machine Project /  VMP-169

### BFT-40 테스트 버그



첨부



하위 작업 생성



이슈 연결



#### 설명

연락처 변경을 필요 없다고 판단하여 문서에서 삭제 했으면 프로그램에서도 삭제 요망

#### 환경

없음

## 2.Brute Force Testing

주석 :

VM 3대 이상에선 선결제 코드 지급 X (해당 문제 수정됨)

2차 테스트 결과 다른 기기에서의 선결제 코드 지급은 막혔으나, vm list 를 보여주는 화면에서 동일한 vm들이 두 번씩 나타나는 화면을 발견했습니다

Custom Fields

첨부물 (실행)



프로젝트 / Vending Machine Project / VMP-165

### VMP-158 테스트 중 버그 발견

첨부 하위 작업 생성 이슈 연결

설명

VMP-158: BFT-43 열기 테스트 중 원인을 모르겠는 버그를 발견하였습니다.  
자세한 내용은 VMP-158: BFT-43 열기 이슈 주석에 써놓았고 스크린샷을 첨부했습니다.

환경

없음

3.Category Partitioning Testing

	PASS	FAIL	BLOCKED	TOTAL	passed rate
1st testing	20	11	9	40	50% 64.5%
2nd testing	<b>30</b>	<b>1</b>	9	40	<b>75% 96.7%</b>

1,2차 category partitioning testing 결과 비교

### 3.Category Partitioning Testing

ID	현황	요약	ID	현황	요약	ID	현황	요약
VMP-78	PASS	CPT-3	VMP-107	PASS	CPT-32	VMP-114	BLOCKED	CPT-39
VMP-102	PASS	CPT-27	VMP-84	PASS	CPT-9	VMP-80	PASS	CPT-5
VMP-76	PASS	CPT-1	VMP-82	FAIL	CPT-7	VMP-101	PASS	CPT-26
VMP-95	BLOCKED	CPT-20	VMP-81	PASS	CPT-6	VMP-108	PASS	CPT-33
VMP-99	BLOCKED	CPT-24	VMP-105	BLOCKED	CPT-30	VMP-88	PASS	CPT-13
VMP-92	PASS	CPT-17	VMP-106	PASS	CPT-31	VMP-85	PASS	CPT-10
VMP-110	BLOCKED	CPT-35	VMP-79	PASS	CPT-4	VMP-100	PASS	CPT-25
VMP-104	BLOCKED	CPT-29	VMP-87	PASS	CPT-12	VMP-103	PASS	CPT-28
VMP-83	PASS	CPT-8	VMP-98	BLOCKED	CPT-23	VMP-91	PASS	CPT-16
VMP-115	BLOCKED	CPT-40	VMP-111	PASS	CPT-36	VMP-90	PASS	CPT-15
						VMP-97	PASS	CPT-22
						VMP-94	PASS	CPT-19
						VMP-113	BLOCKED	CPT-38
						VMP-77	PASS	CPT-2
						VMP-109	PASS	CPT-34
						VMP-89	PASS	CPT-14
						VMP-93	PASS	CPT-18
						VMP-112	PASS	CPT-37
						VMP-96	PASS	CPT-21
						VMP-86	PASS	CPT-11

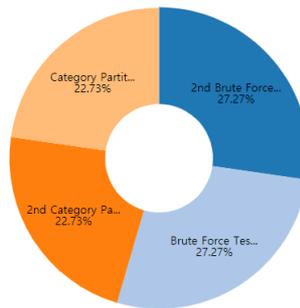
테스트 케이스 통과  
30/31 = 96.7%

## Zephyr Squad

-  2nd Brute Forc...  ...
-  2nd Category ...  ...
-  Brute Force Te...  ...
-  Category Partit...  ...

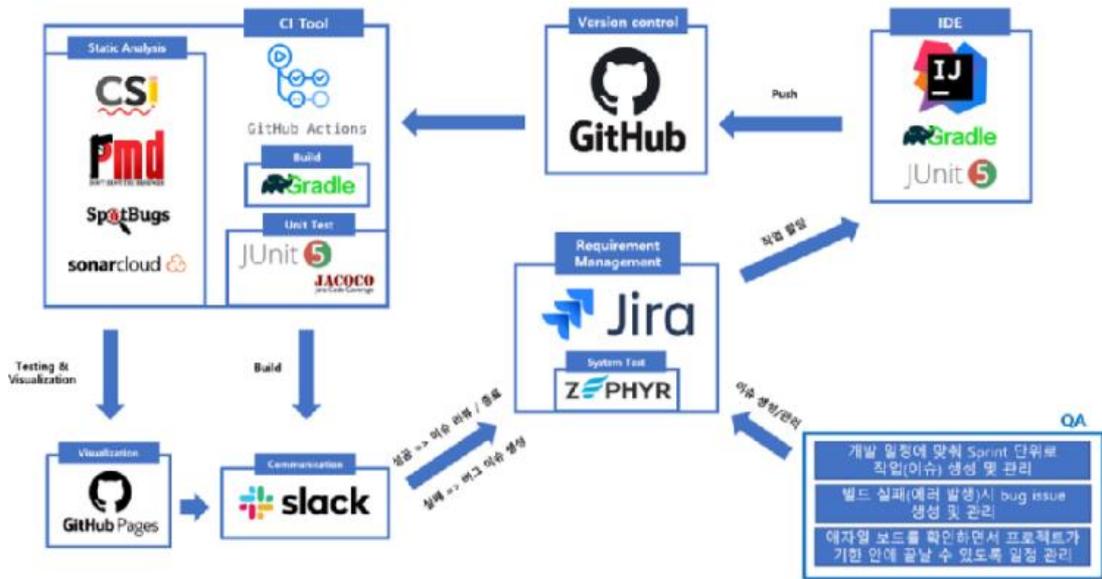
Test Executions By Test Cycle

● 2nd Brute Force Testing (48) 
 ● Brute Force Testing (48) 
 ● 2nd Category Partitioning Testing (40) 
 ● Category Partitioning Testing (40)



Test Case ID	Defects Filed For	Status	Defect ID	Defect Description
<input type="checkbox"/> VMP-158	1   0 VMP-165		VMP-165	Open VMP-158 테스트 중 버그 발견
<input type="checkbox"/> VMP-132	-	-	-	-
<input type="checkbox"/> VMP-161	-	PASS	BFT-46	-
<input type="checkbox"/> VMP-144	-	PASS	BFT-29	-
<input type="checkbox"/> VMP-130	-	PASS	BIT 15	-
<input type="checkbox"/> VMP-163	1   0 VMP-166	PASS	BFT-48	-

## CTIP Overall



1. github에 push
  2. github action을 통해 gradle 빌드
  3. PMD, CSI, Spotbugs의 static analysis 도구 작동 후 report
- > 별도의 홈페이지에 reporting

**QA**

개발 일정에 맞춰 Sprint 단위로 작업(이슈) 생성 및 관리
빌드 실패(에러 발생)시 bug issue 생성 및 관리
에자일 보드를 확인하면서 프로젝트가 기한 안에 끝날 수 있도록 일정 관리

# Distributed Vending Machine Project

## Static Analysis Report

PMD PMD\_Test CheckStyle CheckStyle\_Test SpotBugs SpotBugs\_Test

### PMD report

#	File	Line	Problem
1	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/Admin.java	2	Found non-transient non-static member. Please mark as transient or provide accessors.
2	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/Admin.java	3	Found non-transient non-static member. Please mark as transient or provide accessors.
3	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/Admin.java	4	Found non-transient non-static member. Please mark as transient or provide accessors.
4	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	10	Class implementing Serializable should set a serialVersionUID.
5	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	12	Found non-transient non-static member. Please mark as transient or provide accessors.
6	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	13	Found non-transient non-static member. Please mark as transient or provide accessors.
7	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	14	Found non-transient non-static member. Please mark as transient or provide accessors.
8	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	15	Found non-transient non-static member. Please mark as transient or provide accessors.
9	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	16	Found non-transient non-static member. Please mark as transient or provide accessors.
10	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	19	Checkable method not called during object construction.
11	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminDialog.java	27	Anonymous object to null is a code smell. Consider refactoring.
12	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	16	Class implementing Serializable should set a serialVersionUID.
13	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	18	Found non-transient non-static member. Please mark as transient or provide accessors.
14	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	20	Found non-transient non-static member. Please mark as transient or provide accessors.
15	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	21	Found non-transient non-static member. Please mark as transient or provide accessors.
16	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	22	Found non-transient non-static member. Please mark as transient or provide accessors.
17	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	23	Found non-transient non-static member. Please mark as transient or provide accessors.
18	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	25	Found non-transient non-static member. Please mark as transient or provide accessors.
19	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	26	Found non-transient non-static member. Please mark as transient or provide accessors.
20	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	28	Found non-transient non-static member. Please mark as transient or provide accessors.
21	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	29	Found non-transient non-static member. Please mark as transient or provide accessors.
22	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	30	Found DU anomaly for variable 'drink' (lines 30~148).
23	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	30	Found DU anomaly for variable 'drink' (lines 30~148).
24	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	90	Found DU anomaly for variable 'drink' (lines 90~148).
25	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	102	Found DU anomaly for variable 'beer' (lines 102~148).
26	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	102	Found DU anomaly for variable 'beer' (lines 102~148).
27	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	102	Found DU anomaly for variable 'beer' (lines 102~148).
28	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	113	Found DU anomaly for variable 'beer' (lines 113~148).
29	/home/hunee/work/Software_V&V/Software_VM/v2/main/java/AdminFrame.java	113	Found DU anomaly for variable 'beer' (lines 113~148).

### CheckStyle Audit

Designed for use with Checkstyle and Ant.

Summary	Errors
File	207
37	

File	Errors
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V01.java	402
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V02.java	107
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V03.java	391
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V04.java	225
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V05.java	134
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V06.java	128
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V07.java	97
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V08.java	86
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V09.java	76
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V10.java	69
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V11.java	57
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V12.java	56
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V13.java	53
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V14.java	51
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V15.java	47
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V16.java	44
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V17.java	38
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V18.java	34
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V19.java	24
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V20.java	22
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V21.java	12
/home/hunee/work/Software_V&V/Software_VM/v2/main/java/V22.java	3

File: /home/hunee/work/Software\_V&V/Software\_VM/v2/main/java/V23.java

Line	Message
1	Missing package-info.java file.
2	Missing a javdoc comment.
3	Missing a javdoc comment.
4	Missing a javdoc comment.
6	Class 'Admin' looks like designed for extension (see javadoc), but the method 'setOrder()' does not have javadoc that explains how to do that safely. If class is not designed for extension consider making the class 'final' that means the method 'setOrder()' can't be overridden, or adding abstract annotation for the method.
6	Missing a javdoc comment.
6	Parameter is always null.
6	'is' is referred by reference.
6	Parameter is always null.
6	'is' is never used into reference.
6	Class 'Admin' looks like designed for extension (see javadoc), but the method 'setOrder()' does not have javadoc that explains how to do that safely. If class is not designed for extension consider making the class 'final' that means the method 'setOrder()' can't be overridden, or adding abstract annotation for the method.
6	Missing a javdoc comment.

Warning Type	Number
Bad practice Warnings	6
Correctness Warnings	1
Internationalization Warnings	2
Malicious code vulnerability Warnings	5
Performance Warnings	6
Style code Warnings	3
<b>Total</b>	<b>30</b>

### Warnings

Click on a warning row to see full content information.

#### Bad practice Warnings

Code	Warning
E5	Comparison of String objects using == or != in AdminFrame\$ActionPerformed\$ActionEvent
E5	Comparison of String objects using == or != in AdminFrame\$ActionPerformed\$ActionEvent
Nm	The method name MessageSend() doesn't start with a lower case letter.
Nm	The method name VMCheckDialog() doesn't start with a lower case letter.
Nm	The method name VMNotifyMain() doesn't start with a lower case letter.
Nm	The method name VMRespond\$() doesn't start with a lower case letter.

#### Correctness Warnings

Code	Warning
SA	Self assignment of field parent in new StartDialog()

#### Internationalization Warnings

Code	Warning
Dm	Found reliance on default encoding in MailMenu: new java.io.OutputStreamWriter(OutputStream)
Dm	Found reliance on default encoding in ReceiveMailMenu: new java.io.InputStreamReader(InputStream)

#### Malicious code vulnerability Warnings

Code	Warning
E1	VMGetDrinkArray() may expose internal representation by returning drinkArray
E1	VMGetLocation() may expose internal representation by returning Location
E2	new VMItem, or, double() may expose internal representation by storing an externally mutable object into Location
E2	new VMItem, double() may expose internal representation by storing an externally mutable object into Location

#### Performance Warnings

Code	Warning
------	---------

## Annotations

21 errors

- ✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
- ✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
- ✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
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- ✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.

github action '[java.awt.HeadlessException](#)' 오류 발생

```
✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
VMfunctionTest > editVMID2() FAILED
  java.awt.HeadlessException at VMfunctionTest.java:19

✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
VMfunctionTest > findCard() FAILED
  java.awt.HeadlessException at VMfunctionTest.java:19

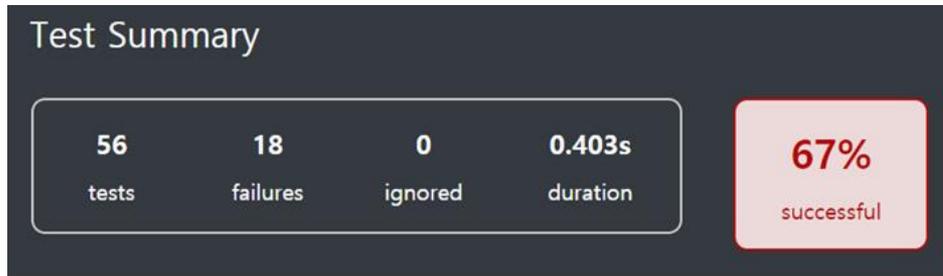
✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
VMfunctionTest > findItem() FAILED
  java.awt.HeadlessException at VMfunctionTest.java:19

✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
VMfunctionTest > checkGiveCode() FAILED
  java.awt.HeadlessException at VMfunctionTest.java:19

✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
VMfunctionTest > checkCode2() FAILED
  java.awt.HeadlessException at VMfunctionTest.java:19

✘ java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it.
VMfunctionTest > checkStock() FAILED
  java.awt.HeadlessException at VMfunctionTest.java:19
```

가상 환경 테스트 결과 (java.awt.HeadlessException오류)



Local Junit 테스트 결과

### Test Summary



==> Junit, Jacoco는 로컬에서 테스트 수행하여 결과 리포팅하는 것으로 변경

## 4. Static Analysis [Checkstyle]

### sun\_checks.xml Rule 사용

- Missing a Javadoc comment : 각 함수를 설명하는 주석이 존재해야 한다
- '{' is not followed by whitespace : 기호 전에 띄어쓰기를 허락하지 않는다
- '100' is a magic number : 숫자를 하드코딩으로 쓰지 않는다
- Using the '\*' form of import should be avoided : import 시 \*을 사용하지 않는다
- Line is longer than 80 characters : 가독성을 위해 한 줄은 80줄을 넘지 않는다

등이 report됨



다소 간소한 규칙으로 참  
고용으로만 쓰기로 함

## 4. Static Analysis

[SonarCloud + PMD + SpotBugs]

Software\_VnV / src/main/java/AdminDialog.java

"parent" is the name of a field in "Component". [Why is this an issue?](#)

22 days ago ▾ L16 🔗 ⌵

🗑️ Code Smell 🚫 Blocker 🔵 Open Not assigned 5min effort

🏷️ No tags

Component에 parent 변수가 존재 하므로 다른 걸로 변경 요망

Add a default case to this switch. [Why is this an issue?](#)

22 days ago ▾ L56 🔗

🗑️ Code Smell 🚨 Critical 🔵 Open Not assigned 5min effort

🏷️ No tags

switch 문에는 default가 있어야함

## 4. Static Analysis [SonarCloud + PMD + SpotBugs]

Software\_VnV / src/main/java/VN.java

Refactor this method to not always return the same value. [Why is this an issue?](#) 24 days ago ▾ L124 🔗 ⌵  
🚩 Code Smell 🛑 Blocker ○ Open Not assigned 4min effort 🏷️ No tags

함수가 언제나 똑같은 return 값을 반환함

Rename "cvc" which hides the field declared at line 14. [Why is this an issue?](#) 22 days ago ▾ L83 🔗  
🚩 Code Smell 🛑 Major ○ Open Not assigned 5min effort 🏷️ No tags

Rename "pw" which hides the field declared at line 15. [Why is this an issue?](#) 22 days ago ▾ L85 🔗  
🚩 Code Smell 🛑 Major ○ Open Not assigned 5min effort 🏷️ No tags

Rename field "code" [Why is this an issue?](#) 27 days ago ▾ L2 🔗  
🚩 Code Smell 🛑 Major ○ Open Not assigned 10min effort 🏷️ No tags

이미 사용하는 Field name 재사용

## 4. Static Analysis

[SonarCloud + PMD + SpotBugs]

Remove this unused import 'java.awt.event.ActionListener'. [Why is this an issue?](#)

9 days ago ▾ L4 🔗

🚫 Code Smell 🟢 Minor 🔵 Open Not assigned 2min effort

🏷️ No tags

Remove this unused import 'java.awt.event.MouseEvent'. [Why is this an issue?](#)

9 days ago ▾ L6 🔗

🚫 Code Smell 🟢 Minor 🔵 Open Not assigned 2min effort

🏷️ No tags

사용하지 않는 import 제거 요망

Remove this unused "ip" local variable. [Why is this an issue?](#)

18 days ago ▾ L24 🔗

🚫 Code Smell 🟢 Minor 🔵 Open Not assigned 5min effort

🏷️ No tags

Remove this unused "listener" local variable. [Why is this an issue?](#)

22 days ago ▾ L21 🔗

🚫 Code Smell 🟢 Minor 🔵 Open Not assigned 5min effort

🏷️ No tags

Remove this unused "vmLocArray" private field. [Why is this an issue?](#)

16 days ago ▾ L11 🔗

🚫 Code Smell 🔴 Major 🔵 Open Not assigned 5min effort

🏷️ No tags

사용하지 않는 Local 변수 및 Private field 제거 요망

4. Static Analysis  
[Jacoco]

Software\_VnV

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
default		35%		41%	248	411	1,025	1,545	132	219	35	52
Total	5,112 of 7,942	35%	211 of 362	41%	248	411	1,025	1,545	132	219	35	52

분석 결과

- 사용되지 않는 함수가 많음
- 사용될 것 같은데 테스트되지 않은 함수들
- 정상 작동 상황만 테스트하고 예외 상황들은 테스트하지 않음

## 4. Static Analysis [J-Unit]

### Test Summary

56	0	1	7m33.96s
tests	failures	ignored	duration

**100%**  
successful

Ignored tests

Packages

**Classes**

Class	Tests	Failures	Ignored	Duration	Success rate
<a href="#">AdminTest</a>	4	0	0	0.200s	100%
<a href="#">CardTest</a>	9	0	0	0.083s	100%
<a href="#">CodeTest</a>	12	0	0	0.042s	100%
<a href="#">DrinkTest</a>	4	0	0	0.024s	100%
<a href="#">ItemTest</a>	7	0	0	0.042s	100%
<a href="#">MessageTest</a>	2	0	0	0.032s	100%
<a href="#">VMTest</a>	2	0	1	2m32.55s	100%
<a href="#">VMfunctionTest</a>	16	0	0	5m0.98s	100%

JUnit Test 는 전부 pass 함

하지만 jacoco 분석 결과와 연계하여 생각해 봤을 때 test 개수가 많이 부족해 보임.

추가가 필요한 test case 들에 대한 내용을 정리하여 jira 에 등록해 두었음

## Jira

- VMP-183 Code Smell 분석 결과 - Major
- VMP-182 Code Smell 분석 결과 - Blocker
- VMP-181 추가 개선사항들
- VMP-180 Bad Practice Warnings
- VMP-179 Coding Style 관련 참고사항들
- VMP-178 Unit Test 개선사항들 - 그 외
- VMP-177 Unit Test 개선사항들 #VM Class
- VMP-176 Unit Test 개선사항들 #RecieveMail Class
- VMP-175 Unit Test 개선사항들 #Item Class
- VMP-174 Unit Test 개선사항들 #DrinkPanel Class
- VMP-173 Unit Test 개선사항들 #Drink Class
- VMP-172 Unit Test 개선사항들 #Code Class
- VMP-171 Unit Test 개선사항들 #Card Class
- VMP-170 Unit Test 개선사항들이 PC에 저장됨 Class

Jacoco, PMD, SpotBus, CheckStyle 등의 분석 결과를 정리하여 improvement issue 로 등록함

Code Smell 분석 결과

Coding Style 관련 참고사항들

각 class 별 개선 사항들