

# Unit Test Report for Coffee Machine System

- Test Cases Specification
- Test Summary Report

## Project Team

**T3 Team**

Latest update on:

**2016-11-06**

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## 1 Introduction

### 1.1 Objectives

본 문서는 2016년도 2학기 소프트웨어 공학 개론 수업의 T3 Team이 개발한 Coffee Machine System(이하 CMS)을 수행한 결과에 대한 Report 문서이다. Test 요소들에 대한 Test Case와 Test 수행 결과에 대한 내용을 담고 있다.

### 1.2 References

T3-2016-CMS-SRA.

T3-2016-CMS-SDA.

T3-2016-CMS-UTP.

## 2 Unit test case specification

### 2.1 Test case specification identifier

Identifier	Feature(Process DFD)	Valid / Invalid value
Coffemaker_0_000_000	1.Logic Controller	Time Input : 0 Concentrate Input : 100 Temperature Input : 0
Coffemaker_0_000_001	1.Logic Controller	Time Input : 0 Concentrate Input : 200 Temperature Input : 0
Coffemaker_0_000_002	1.Logic Controller	Time Input : 0 Concentrate Input : 300 Temperature Input : 1
Coffemaker_0_000_003	1.Logic Controller	Time Input : 11061525 Concentrate Input : 100 Temperature Input :
Coffemaker_0_000_004	1.Logic Controller	Time Input : 11052300 Concentrate Input : 100 Temperature Input :
Coffemaker_0_000_005	1.Logic Controller	Time Input : 5260900 Concentrate Input : 100 Temperature Input :
Coffemaker_0_000_006	1.Logic Controller	Time Input : 5310930 Concentrate Input : 100 Temperature Input :

Coffemaker_0_000_007	1.Logic Controller	Time Input : 3010000 Concentrate Input : 100 Temperature Input :
Coffemaker_0_000_008	1.Logic Controller	Time Input : 12252100 Concentrate Input : 100 Temperature Input :
Coffemaker_0_000_009	1.Logic Controller	Time Input : 8230830 Concentrate Input : 100 Temperature Input :
Coffemaker_0_000_010	1.Logic Controller	Time Input : 8231200 Concentrate Input : 100 Temperature Input :
Coffemaker_0_001_000	2.Main Controller	Clean Data : 1 Power Data : 0 Water Data : 0 Bean Data : 0 Powder Data : 0
Coffemaker_0_001_001	2.Main Controller	Clean Data : 0 Power Data : 0 Water Data : 5 Bean Data : 5 Powder Data : 5
Coffemaker_0_001_002	2.Main Controller	Clean Data : 0 Power Data : 0 Water Data : 100 Bean Data : 5 Powder Data : 5
Coffemaker_0_001_003	2.Main Controller	Clean Data : 0 Power Data : 0 Water Data : 200 Bean Data : 5 Powder Data : 20
Coffemaker_0_001_004	2.Main Controller	Clean Data : 0 Power Data : 0 Water Data : 200 Bean Data : 300 Powder Data : 5
Coffemaker_0_001_005	2.Main Controller	Clean Data : 0

		Power Data : 0 Water Data : 200 Bean Data : 300 Powder Data : 300
Coffemaker_0_001_006	2.Main Controller	Clean Data : 0 Power Data : 0 Water Data : 200 Bean Data : 0 Powder Data : 5
Coffemaker_0_001_007	2.Main Controller	Clean Data : 0 Power Data : 1 Water Data : 0 Bean Data : 0 Powder Data : 0
Coffemaker_0_002_008	3.Clean Controller	Clean Data : 0
Coffemaker_0_002_001	3.Clean Controller	Clean Data : 1
Coffemaker_0_003_000	4.Make Controller	Concentrate Input : 100 Temperature Input : 0
Coffemaker_0_003_001	4.Make Controller	Concentrate Input : 200 Temperature Input : 0
Coffemaker_0_003_002	4.Make Controller	Concentrate Input : 300 Temperature Input : 0
Coffemaker_0_003_004	4.Make Controller	Concentrate Input : 100 Temperature Input : 1
Coffemaker_0_003_005	4.Make Controller	Concentrate Input : 200 Temperature Input : 1
Coffemaker_0_004_000	5.Output Controller	Input : 1, 0
Coffemaker_0_004_001	5.Output Controller	Input : 2, 0
Coffemaker_0_004_002	5.Output Controller	Input : 3, 0
Coffemaker_0_004_003	5.Output Controller	Input : 4, 0
Coffemaker_0_004_004	5.Output Controller	Input : 0, 3
Coffemaker_0_004_005	5.Output Controller	Input : 0, 2
Coffemaker_0_004_006	5.Output Controller	Input : 1, 1

## 2.2 Test items

커피메이커 시스템을 구성하는 최소 단위의 모듈들이 Unit Test의 대상이 된다. 각 모듈들이 요구사항을 만족하는 지를 Test하며, Test item은 다음 자료 들로부터 작성되었

다.

- (1) Overall Coffeemaker System modules
- (2) Logic Controller State Diagram
- (3) Main Controller State Diagram
- (4) Make Controller State Diagram
- (5) Clean Controller State Diagram
- (6) Output Controller State Diagram

### 2.3 Input & Output specifications

Identifier	Input Specification	Output Specification
Coffemaker_0_000_000	Time Input : 0 Concentrate Input : 100 Temperature Input : 0	call pushCoffeeData()
Coffemaker_0_000_001	Time Input : 0 Concentrate Input : 200 Temperature Input : 0	call pushCoffeeData()
Coffemaker_0_000_002	Time Input : 0 Concentrate Input : 300 Temperature Input : 1	call pushCoffeeData()
Coffemaker_0_000_003	Time Input : 11061525 Concentrate Input : 100 Temperature Input :	call pushReserveData()
Coffemaker_0_000_004	Time Input : 11052300 Concentrate Input : 100 Temperature Input :	call pushReserveData()
Coffemaker_0_000_005	Time Input : 5260900 Concentrate Input : 100 Temperature Input :	call pushReserveData()
Coffemaker_0_000_006	Time Input : 5310930 Concentrate Input : 100 Temperature Input :	call pushReserveData()
Coffemaker_0_000_007	Time Input : 3010000 Concentrate Input : 100 Temperature Input :	call pushReserveData()
Coffemaker_0_000_008	Time Input : 12252100 Concentrate Input : 100	call pushReserveData()

	Temperature Input :	
Coffemaker_0_000_009	Time Input : 8230830 Concentrate Input : 100 Temperature Input :	call pushReserveData()
Coffemaker_0_000_010	Time Input : 8231200 Concentrate Input : 100 Temperature Input :	call pushReserveData()
Coffemaker_0_001_000	Clean Data : 1 Power Data : 0 Water Data : 0 Bean Data : 0 Powder Data : 0	Call Clean Controller
Coffemaker_0_001_001	Clean Data : 0 Power Data : 0 Water Data : 5 Bean Data : 5 Powder Data : 5	Call Output Controller 커피가 만들어지지 않음
Coffemaker_0_001_002	Clean Data : 0 Power Data : 0 Water Data : 100 Bean Data : 5 Powder Data : 5	Call Output Controller 커피가 만들어지지 않음
Coffemaker_0_001_003	Clean Data : 0 Power Data : 0 Water Data : 200 Bean Data : 5 Powder Data : 20	Call Make Controller
Coffemaker_0_001_004	Clean Data : 0 Power Data : 0 Water Data : 200 Bean Data : 300 Powder Data : 5	Call Make Controller
Coffemaker_0_001_005	Clean Data : 0 Power Data : 0 Water Data : 200 Bean Data : 300 Powder Data : 300	Call Make Controller

Coffemaker_0_001_006	Clean Data : 0 Power Data : 0 Water Data : 200 Bean Data : 0 Powder Data : 5	Call Output Controller 커피가 만들어지지 않음
Coffemaker_0_001_007	Clean Data : 0 Power Data : 1 Water Data : 0 Bean Data : 0 Powder Data : 0	Power Off
Coffemaker_0_002_000	Clean Data : 0	Output : 0 청소되지 않음
Coffemaker_0_002_001	Clean Data : 1	Output : 1
Coffemaker_0_003_000	Concentrate Input : 100 Temperature Input : 0	Output : 1 커피가 만들어짐
Coffemaker_0_003_001	Concentrate Input : 200 Temperature Input : 0	Output : 1 커피가 만들어짐
Coffemaker_0_003_002	Concentrate Input : 300 Temperature Input : 0	Output : 1 커피가 만들어짐
Coffemaker_0_003_004	Concentrate Input : 100 Temperature Input : 1	Output : 1 커피가 만들어짐
Coffemaker_0_003_005	Concentrate Input : 200 Temperature Input : 1	Output : 1 커피가 만들어짐
Coffemaker_0_004_000	Input : 1, 0	printf("1)MakeWn"); printf("2)CleaningWn");
Coffemaker_0_004_001	Input : 2, 0	printf("concentrate: ");
Coffemaker_0_004_002	Input : 3, 0	printf("temperature : ");
Coffemaker_0_004_003	Input : 4, 0	printf("time : ");
Coffemaker_0_004_004	Input : 0, 3	비프음
Coffemaker_0_004_005	Input : 0, 2	비프음

### 3 Environmental needs

커피메이커 시스템의 Unit Test를 위한 환경적 요구사항 은 다음과 같다.

#### (1) H/W & Platform



GCC compiler/linker

(2) CTIP(Continuous Testing & Integrated Platform) Environment

Cygwin

#### 4 Unit test summary report

##### 4.1 Test summary report identifier

Identifier	Input Specification
Coffemaker_0_000_000	Passed
Coffemaker_0_000_001	Passed
Coffemaker_0_000_002	Passed
Coffemaker_0_000_003	Passed
Coffemaker_0_000_004	Passed
Coffemaker_0_000_005	Passed
Coffemaker_0_000_006	Passed
Coffemaker_0_000_007	Passed
Coffemaker_0_000_008	Passed
Coffemaker_0_000_009	Passed
Coffemaker_0_000_010	Passed
Coffemaker_0_001_000	Passed
Coffemaker_0_001_001	Passed
Coffemaker_0_001_002	Passed
Coffemaker_0_001_003	Passed
Coffemaker_0_001_004	Passed
Coffemaker_0_001_005	Passed
Coffemaker_0_001_006	Passed
Coffemaker_0_001_007	Passed
Coffemaker_0_002_000	Passed
Coffemaker_0_002_001	Passed
Coffemaker_0_003_000	Passed
Coffemaker_0_003_001	Passed
Coffemaker_0_003_002	Passed
Coffemaker_0_003_004	Passed
Coffemaker_0_003_005	Passed

Coffemaker_0_004_000	Passed
Coffemaker_0_004_001	Passed
Coffemaker_0_004_002	Passed
Coffemaker_0_004_003	Passed
Coffemaker_0_004_004	Passed
Coffemaker_0_004_005	Passed

#### 4.2 Evaluation

Total Test Case: 32개

Passed: 32개

Failed: 0개