

# Unit Test Documents

- Test Plan, Specification and Report -

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Unit Test Documents

# Unit Test Plan

# Purpose

- Purpose
  - DWS (Digital Watch System) 는 현재 시각을 알려주는 기능과, 그 외에 스톱워치 기능 등을 가지고 있는 시계이다. 이 시스템은 여러 개의 입력과 출력을 가지고 있으며, 반응 시간과 실행 시간 등이 시스템의 성능을 좌우하는 중요한 특성이다. Unit Test 는 시스템을 구성하는 최소 단위 모듈들을 대상으로 하는 test 이며, 각 모듈들이 가지고 있는 특성들이 요구사항을 만족하는지를 확인할 수 있는 approach 이다.

# Approach

- Test Technique
  - 시스템을 구성하는 각 모듈 (Process)을 대상으로 하는 test 이다.
  - CTIP (Continuous Testing & Integration Platform) 환경에서 이루어지며, program source code/test code 의 변경 및 수정 사항은 지속적으로 통합된다.
  - Test 수행의 용이함을 위해 program source code의 일부를 수정하거나 새로운 코드를 추가(Scaffolding)할 수 있다. 이는 전체 시스템의 기능에 영향을 주지 않는 범위 내에서 행해진다.
  - 각 모듈의 기능 요구사항에 따라 Brute force 기법을 사용하여 Test Case 를 design 한다.
- Test Execution Environment
  - Windows 7 64bit
  - Eclipse IDE
  - MinGW gcc compiler for Windows
  - CTIP with CUnit

# Test Item

- Test Item
  - 분석된 SASD (Structured Analysis & Structured Design)를 기반으로 하여 SA의 각 process를 하나의 unit으로 간주한다.
  - 각 unit의 기능 정의와 SD를 기반으로 하여 test 할 unit 을 선별하고, test 를 design 한다.
  - DWS 에 대한 SASD 참조

# Features to be Test

- Features not to be Test
  - HW Interface 관련 모듈 제외
    - 1.1 A Button Interface
    - 1.2 B Button Interface
    - 1.3 C Button Interface
    - 1.4 D Button Interface
    - 1.5 Input Button Interface
    - 2.2 Display Interface
  - Data 전달 모듈 제외
    - 2.1.14 Day\_Dis
    - 2.1.15 Month\_Dis
    - 2.1.16 Date\_Dis
    - 2.1.17 Pm\_Dis
    - 2.1.18 Hour\_Dis
    - 2.1.19 Min\_Dis
    - 2.1.20 Sec\_Dis

# Features to be Test

- Features to be Test
  - DWS 의 다음 unit 들을 test 한다.
    - 2.1.1 User Controller
    - 2.1.2 Mode\_Change
    - 2.1.3 Auto\_Up
    - 2.1.4 TS\_Up
    - 2.1.5 TS\_Next
    - 2.1.6 SW\_Up
    - 2.1.7 SW\_Reset
    - 2.1.8 SW\_Lap
    - 2.1.9 LED Controller
    - 2.1.10 LED\_switch
    - 2.1.11 LED\_Up
    - 2.1.12 LED\_Reset
    - 2.1.13 Display\_Combine



# Features to be Test

- Feature Pass/Fail Criteria
  - 각 프로세스의 요구사항을 만족해야 한다.

Unit Test Documents

# Unit Test Specifications

# Test Design Specification

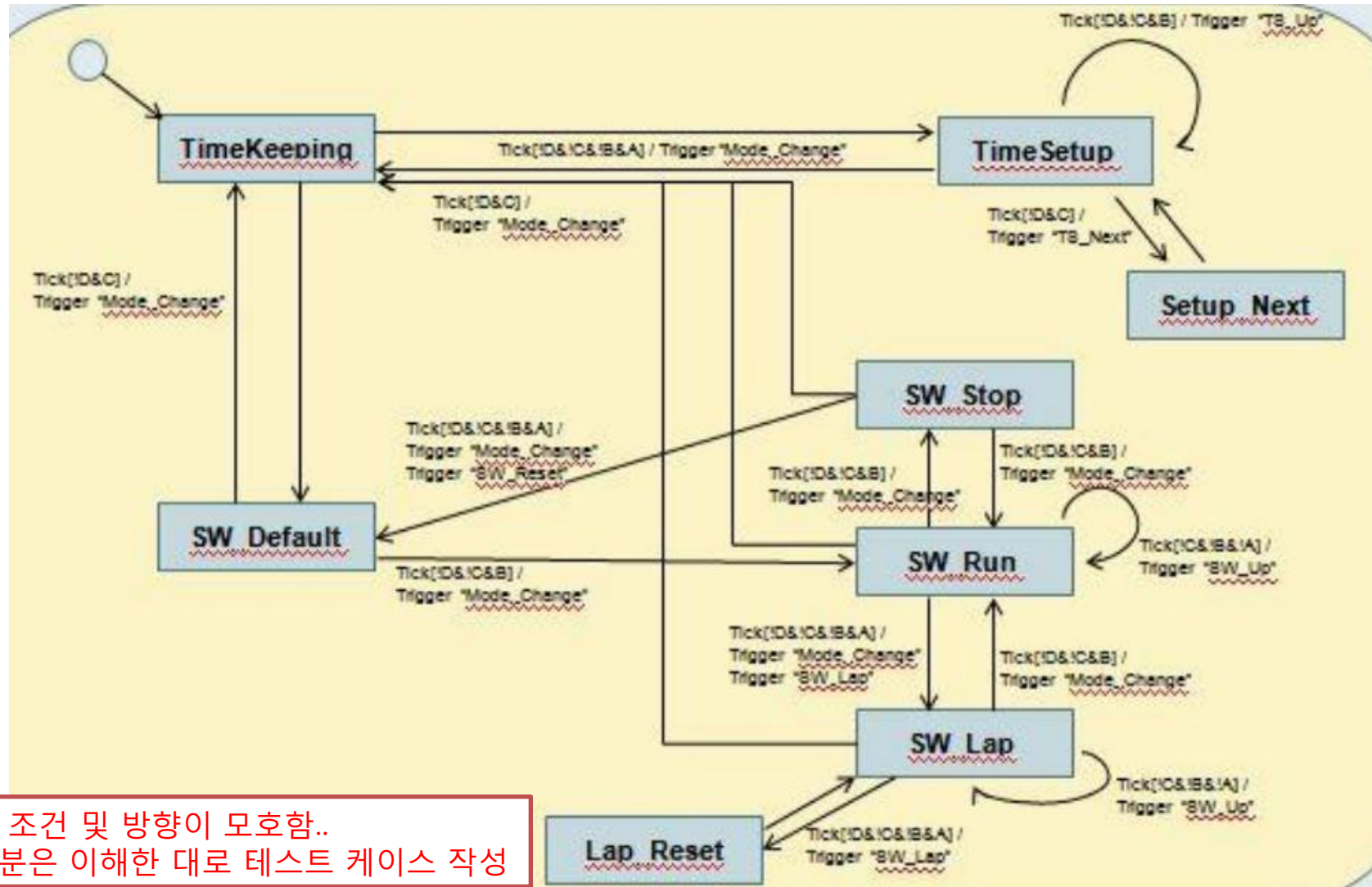
## 2.1.1 User Controller

Identifier	Feature	Value
DWS.UTD.00	입력 Button Mode – 사용되지 않음	Button 입력과 Mode 에 따라 다른 모듈을 제어하는 Trigger 발생
	Mode: 0 Timekeeping 1 TimeSetup 2 SW_Default 3 SW_Stop 4 SW_Run 5 SW_Lap 로 정의 되어 있으나, 상태 전이 시스템에는 Setup_Next Lap_Reset 의 두 Mode가 추가로 존재	두 Mode에 대한 정의를 알 수 없음

Tick에 의해 동작이 이루어지며, 상태 전이 시스템 기반의 동작 구현

Mode? State?

# Test Design Specification



Transition 조건 및 방향이 모호함..  
모호한 부분은 이해한 대로 테스트 케이스 작성

# Test Design Specification

## 2.1.2 Mode\_Change

Identifier	Feature	Value
DWS.UTD.01	입력 Triggered by 2.1.1	Mode 값을 변경 Mode 값이 Timekeeping 으로 변경될 때 Cursor 값을 5로 초기화

# Test Design Specification

## 2.1.3 Auto\_Up

Identifier	Feature	Value
DWS.UTD.02	입력 Now, Bound Max_Date	이전 Now 값에 따라 Now 값을 변경  Tick 마다 Now[6] 값을 1 증가 (msec) 변경 시 현재 시간에 대한 최소/최대 값과 비교 Day 변경 시 요일 자동 변경
	Now [year,month] [date,hour] [min,sec] [msec,day]	현재 시간에 대한 값
	Bound	현재 시간에 대한 최소/최대 값 자세한 값은 Data Dictionary 참조
	Max_Date	각 달의 일수를 표현하는 값 자세한 값은 Data Dictionary 참조

Tick에 의해 동작이 이루어짐

Tick과 시간 관계에 대한 정의?

# Test Design Specification

## 2.1.4 TS\_Up

Identifier	Feature	Value
DWS.UTD.03	입력 Triggered by 2.1.1 Max_Date Bound Cursor Now	Now[Cursor] 를 1 증가 Now[Cursor]가 최소값일 경우 초기화 연, 월 변경 시 최대 일수 변경 연, 월, 일 변경 시 요일 자동 변경 월 변경 시 최대 일수를 최대/최소(Bound) 값과 비교 변경
	Now Bound Max_Date	Data Dictionary 참조

# Test Design Specification

## 2.1.5 TS\_Next

Identifier	Feature (Process ID)	Value
DWS.UTD.04	입력 Triggered by 2.1.1 Cursor	Trigger 를 받아 Cursor 값을 1 감소시킨다. Cursor 값이 0보다 작아지면 5로 초기화한다.



# Test Design Specification

## 2.1.6 SW\_Up

Identifier	Feature	Value
DWS.UTD.05	입력 Triggered by 2.1.1 Bound	Trigger 를 받아 SW_Time을 증가시킨다. SW_Time[6]을 1증가 ...
	SW_Time [hour,min,sec,msec]	Stopwatch 측정 시간

SW\_Time은 Data Dictionary에 4원소 행렬이나, Process 정의에서는 SW\_Time[6]을 접근함

# Test Design Specification

## 2.1.7 SW\_Reset

Identifier	Feature	Value
DWS.UTD.06	입력 Triggered by 2.1.1 SW_Time	Trigger 를 받아 SW_Time 을 초기화한다.

# Test Design Specification

## 2.1.8 SW\_Lap

Identifier	Feature	Value
DWS.UTD.07	입력 Triggered by 2.1.1	Trigger 를 받아 SW_Time의 값을 SW_Lab으로 복사한다.
	SW_Lab [hour,min,sec,msec]	Stopwatch Lab Time

# Test Design Specification

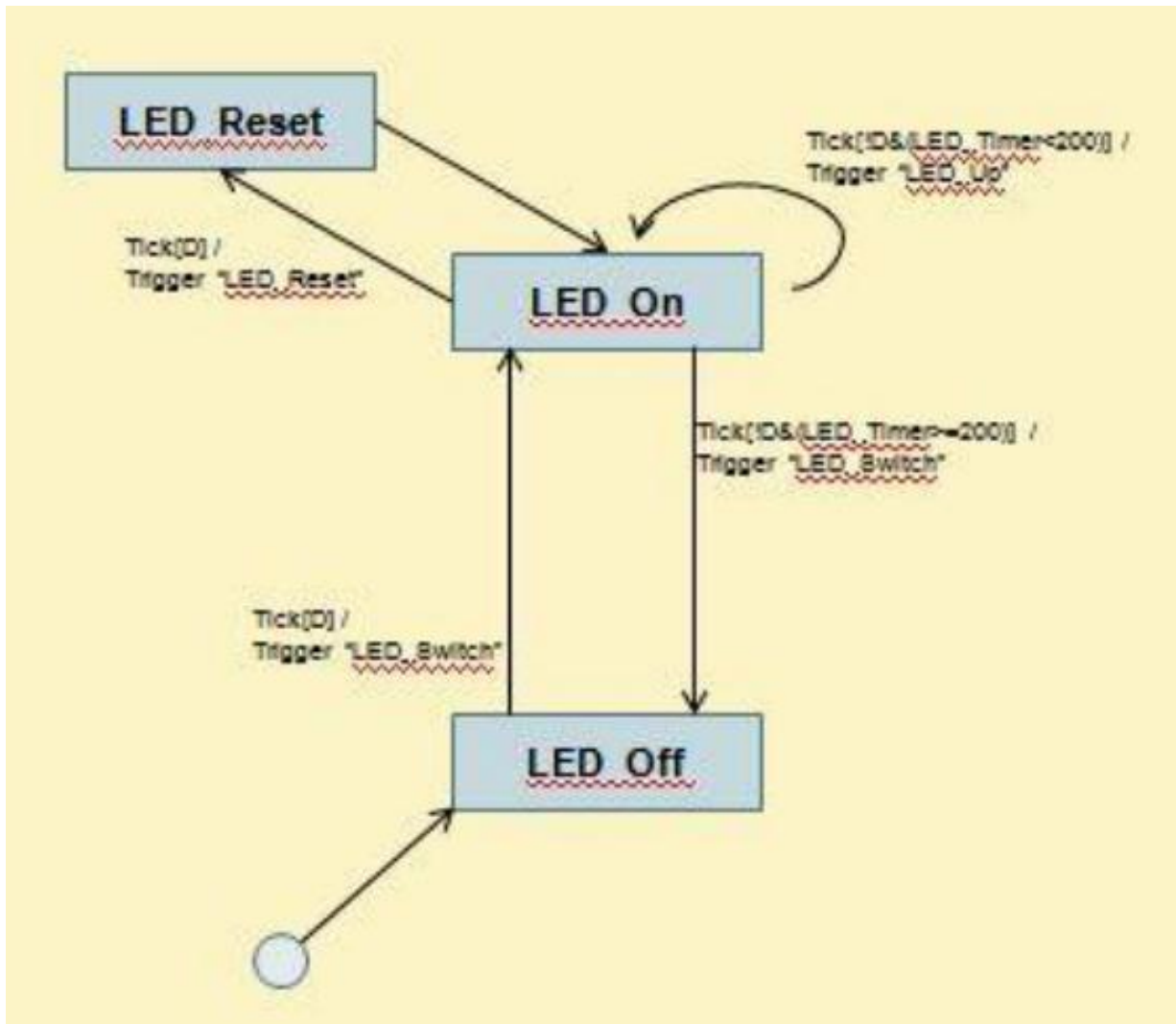
## 2.1.9 LED Controller

Identifier	Feature	Value
DWS.UTD.08	입력 Tick Button	Button 입력을 받아 LED를 제어하는 Trigger를 보낸다.

Tick에 의해 동작이 이루어지며, 상태 전이 시스템 기반의 동작 구현

SA 넘버링 오류로 보임 (2.1.3?)

# Test Design Specification



# Test Design Specification

## 2.1.10 LED\_switch

Identifier	Feature	Value
DWS.UTD.09	입력 Triggered by 2.1.9 LED_Status	Trigger 를 받아 LED_Status 값에 따라 LED_Status 값을 토글한다.
	LED_Status	LED On/Off상태. bool

# Test Design Specification

## 2.1.11 LED\_Up

Identifier	Feature	Value
DWS.UTD.10	입력 Triggered by 2.1.9 LED_Timer	Trigger 를 받아 LED_Timer 값을 증가시킨다.
	LED_Timer	LED 시간

# Test Design Specification

## 2.1.12 LED\_Reset

Identifier	Feature	Value
DWS.UTD.11	입력 Triggered by 2.1.9 LED_Timer	Trigger 를 받아 LED_Timer를 초기화한다.



# Test Design Specification

## 2.1.13 Display\_Combine

Identifier	Feature	Value
DWS.UTD.12	입력 Tick Mode Cursor Now LED_Status	Mode, Cursor, Now, LED_Status에 따라 Day, Month, Date, Pm, Hour, Min, Sec 값을 만들어 출력

Tick에 의해 동작이 이루어짐

연산, 기능에 대한 정의가 없음

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.00.00	TimeKeeping/A	Transition to TimeSetup Trigger Mode_Change
DWS.UTC.00.01	TimeKeeping/C	Transition to SW_Default Trigger Mode_Change
DWS.UTC.00.02	TimeSetup/A	Transition to TimeKeeping Trigger Mode_Change
DWS.UTC.00.03	TimeSetup/B	Transition to TimeSetup Trigger TS_Up
DWS.UTC.00.04	TimeSetup/C	Transition to Setup_Next Trigger TS_Next
DWS.UTC.00.05	Setup_Next/C	Transition to TimeSetup Trigger TS_Next
DWS.UTC.00.06	SW_Default/B	Transition to SW_Run Trigger Mode_Change
DWS.UTC.00.07	SW_Default/C	Transition to TimeKeeping Trigger Mode_Change
DWS.UTC.00.08	SW_Stop/A	Transition to SW_Default Trigger Mode_Change Trigger SW_Reset
DWS.UTC.00.09	SW_Stop/B	Transition to SW_Run Trigger Mode_Change
DWS.UTC.00.10	SW_Stop/C	Transition to TimeKeeping Trigger Mode_Change

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.00.11	SW_Run/-	Transition to SW_Run Trigger SW_Up
DWS.UTC.00.12	SW_Run/A	Transition to SW_Lap Trigger Mode_Change Trigger SW_Lab
DWS.UTC.00.13	SW_Run/B	Transition to SW_Stop Trigger Mode_Change
DWS.UTC.00.14	SW_Run/C	Transition to TimeKeeping Trigger Mode_Change
DWS.UTC.00.15	SW_Lap/-	Transition to SW_Lap Trigger SW_Up
DWS.UTC.00.16	SW_Lap/A	Transition to Lap_Reset Trigger SW_Lap
DWS.UTC.00.17	SW_Lap/B	Transition to SW_Run Trigger SW_Run
DWS.UTC.00.18	SW_Lap/C	Transition to TimeKeeping Trigger Mode_Change
DWS.UTC.00.19	Lap_Reset/A	Transition to SW_Lap Trigger SW_Lap

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.01.00	Trigger/Mode=0 TimeKeeping	?
DWS.UTC.01.01	Trigger/Mode=1 TimeSetup	?
DWS.UTC.01.02	Trigger/Mode=2 SW_Default	?
DWS.UTC.01.03	Trigger/Mode=3 SW_Stop	?
DWS.UTC.01.04	Trigger/Mode=4 SW_Run	?
DWS.UTC.01.05	Trigger/Mode=5 SW_Lap	?

Mode 값을 변경한다. -> 증가? 감소?

정의되어 있지 않아 알 수 없어 test할 수 없음

상태 전이 시스템을 보고 유추하려 했으나 Trigger 중복이 있어 유추하기 어려움

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.02.00	Max_Date, Bound, Now{2012,1,1,0,0,0,0,0}	Now{2012,1,1,0,0,0,1,0}
DWS.UTC.02.01	Max_Date, Bound, Now{2012,1,1,0,0,0,99,0}	Now{2012,1,1,0,0,1,0,0}
DWS.UTC.02.02	Max_Date, Bound, Now{2012,1,1,0,0,59,99,0}	Now{2012,1,1,0,1,0,0,0}
DWS.UTC.02.03	Max_Date, Bound, Now{2012,1,1,0,59,59,99,0}	Now{2012,1,1,1,0,0,0,0}
DWS.UTC.02.04	Max_Date, Bound, Now{2012,1,1,23,59,59,99,0}	Now{2012,1,2,0,0,0,0,1}
DWS.UTC.02.05	Max_Date, Bound, Now{2012,1,7,23,59,59,99,6}	Now{2012,1,8,0,0,0,0,0}

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.03.00	Max_Date, Bound, Cursor=0, Now={2012,1,1,0,0,0,0,0} Mode=1, Button=B	Now={2013,1,1,0,0,0,0,0}
DWS.UTC.03.01	Cursor=1, Now={2012,1,1,0,0,0,0,0} Mode=1, Button=B	Now={2012,2,1,0,0,0,0,0}
DWS.UTC.03.02	Cursor=2, Now={2012,1,1,0,0,0,0,0} Mode=1, Button=B	Now={2012,1,2,0,0,0,0,1}
DWS.UTC.03.03	Cursor=3, Now={2012,1,1,0,0,0,0,0} Mode=1, Button=B	Now={2012,1,1,1,0,0,0,0}
DWS.UTC.03.04	Cursor=4, Now={2012,1,1,0,0,0,0,0} Mode=1, Button=B	Now={2012,1,2,0,1,0,0,0}
DWS.UTC.03.05	Cursor=5, Now={2012,1,1,0,0,0,0,0} Mode=1, Button=B	Now={2012,1,2,0,0,1,0,0}

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.04.00	Trigger/Cursor=0 year	Cursor=-1
DWS.UTC.04.01	Trigger/Cursor=1 month	Cursor=0
DWS.UTC.04.02	Trigger/Cursor=2 day	Cursor=1
DWS.UTC.04.03	Trigger/Cursor=3 hour	Cursor=2
DWS.UTC.04.04	Trigger/Cursor=4 min	Cursor=3
DWS.UTC.04.05	Trigger/Cursor=5 sec	Cursor=4
DWS.UTC.04.06	Trigger/Cursor=-1	Cursor=5

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.05.00	Trigger/Bound/SW_Time{0,0,0,0}	SW_Time{0,0,0,1}
DWS.UTC.05.01	Trigger/Bound/SW_Time{0,0,0,99}	SW_Time{0,0,1,0}
DWS.UTC.05.02	Trigger/Bound/SW_Time{0,0,59,0}	SW_Time{0,0,59,1}
DWS.UTC.05.03	Trigger/Bound/SW_Time{0,0,59,99}	SW_Time{0,1,0,0}
DWS.UTC.05.04	Trigger/Bound/SW_Time{0,59,59,99}	SW_Time{1,0,0,0}
DWS.UTC.05.05	Trigger/Bound/SW_Time{23,59,59,99}	SW_Time{0,0,0,0}?

Array의 [-1]에 접근하는가? 아니면 초기화 되는가?



# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.06.00	Trigger/SW_Time{0,0,0,0}	SW_Time{0,0,0,0}
DWS.UTC.06.01	Trigger/SW_Time{23,59,59,99}	SW_Time{0,0,0,0}

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.07.00	Trigger/SW_Time={0,0,0,0}	SW_Lap={0,0,0,0}
DWS.UTC.07.01	Trigger/SW_Time={0,0,0,99}	SW_Lap={0,0,0,99}
DWS.UTC.07.02	Trigger/SW_Time={0,0,59,0}	SW_Lap={0,0,59,0}
DWS.UTC.07.03	Trigger/SW_Time={0,0,59,99}	SW_Lap={0,0,59,99}
DWS.UTC.07.04	Trigger/SW_Time={0,59,0,0}	SW_Lap={0,59,0,0}
DWS.UTC.07.05	Trigger/SW_Time={0,59,59,99}	SW_Lap={0,59,59,99}
DWS.UTC.07.06	Trigger/SW_Time={23,0,0,0}	SW_Lap={23,0,0,0}
DWS.UTC.07.07	Trigger/SW_Time={23,59,59,99}	SW_Lap={23,59,59,99}

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.08.00	LED Off/D	Transition to LED On Trigger LED_Switch
DWS.UTC.08.01	LED On/D	Transition to LED_Reset Trigger LED_Reset
DWS.UTC.08.02	LED On/-/LED_Timer=200	Transition to LED Off Trigger LED_Switch
DWS.UTC.08.03	LED On/-/LED_Timer=100	Transition to LED On Trigger LED_Up
DWS.UTC.08.04	LED_Reset/??	Transition to LED On

LED\_Reset에 대한 상태 정의가 없음

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.09.00	Trigger/LED_Status=True	LED_Status=False
DWS.UTC.09.01	Trigger/LED_Status=False	LED_Status=True

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.10.00	Trigger/LED_Timer=1	LED_Timer=2
DWS.UTC.10.01	Trigger/LED_Timer=100	LED_Timer=101

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.11.00	Trigger	LED_Timer=0

# Test Case Specification

Identifier	Input Specification	Output Specification
DWS.UTC.12.00	Mode, Cursor, Now, LED_Status	

연산, 기능에 대한 정의가 없음

Unit Test Documents

# Unit Test Report



# Unit Test Report

CUnit - A Unit testing framework for C.  
<http://cunit.sourceforge.net/>

## Automated Test Run Results

Running Suite User Controller

	Running test DWS.UTC.00.00 ...	Passed
	Running test DWS.UTC.00.01 ...	Passed
	Running test DWS.UTC.00.02 ...	Passed
	Running test DWS.UTC.00.03 ...	Passed
	Running test DWS.UTC.00.04 ...	Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 90
<b>Condition</b>	0	
	Running test DWS.UTC.00.05 ...	Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 98
<b>Condition</b>	0	
	Running test DWS.UTC.00.06 ...	Passed
	Running test DWS.UTC.00.07 ...	Passed
	Running test DWS.UTC.00.08 ...	Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 122
<b>Condition</b>	Mode_t == 2	
	Running test DWS.UTC.00.09 ...	Passed
	Running test DWS.UTC.00.10 ...	Passed
	Running test DWS.UTC.00.11 ...	Passed
	Running test DWS.UTC.00.12 ...	Passed
	Running test DWS.UTC.00.13 ...	Passed
	Running test DWS.UTC.00.14 ...	Passed
	Running test DWS.UTC.00.15 ...	Passed
	Running test DWS.UTC.00.16 ...	Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 186
<b>Condition</b>	0 == 1	
	Running test DWS.UTC.00.17 ...	Passed
	Running test DWS.UTC.00.18 ...	Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 202
<b>Condition</b>	Mode_t == 5	

# Unit Test Report

Running test DWS.UTC.00.19 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 210
<b>Condition</b>	0 == 1	
Running Suite Mode_Change		
Running test DWS.UTC.01.00 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 215
<b>Condition</b>	0	
Running test DWS.UTC.01.01 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 219
<b>Condition</b>	0	
Running test DWS.UTC.01.02 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 223
<b>Condition</b>	0	
Running test DWS.UTC.01.03 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 227
<b>Condition</b>	0	
Running test DWS.UTC.01.04 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 231
<b>Condition</b>	0	
Running test DWS.UTC.01.05 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 235
<b>Condition</b>	0	
Running Suite Auto_Up		
Running test DWS.UTC.02.00 ...		Passed
Running test DWS.UTC.02.01 ...		Passed
Running test DWS.UTC.02.02 ...		Passed
Running test DWS.UTC.02.03 ...		Passed
Running test DWS.UTC.02.04 ...		Passed
Running test DWS.UTC.02.05 ...		Passed
Running Suite TS_Up		
Running test DWS.UTC.03.00 ...		Failed
<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b> 330
<b>Condition</b>	(Now_t[0] == 2013) && (Now_t[1] == 1) && (Now_t[2] == 1) && (Now_t[3] == 0) && (Now_t[4] == 0) && (Now_t[5] == 0) && (Now_t[6] == 0) && (Now_t[7] == 0)	

# Unit Test Report

Running test DWS.UTC.03.01 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 339
Condition	(Now_t[0] == 2012) && (Now_t[1] == 2) && (Now_t[2] == 1) && (Now_t[3] == 0) && (Now_t[4] == 0) && (Now_t[5] == 0) && (Now_t[6] == 0) && (Now_t[7] == 0)	
Running test DWS.UTC.03.02 ...		Passed
Running test DWS.UTC.03.03 ...		Passed
Running test DWS.UTC.03.04 ...		Passed
Running test DWS.UTC.03.05 ...		Passed
Running Suite TS_Next		
Running test DWS.UTC.04.00 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 385
Condition	Cursor_t == -1	
Running test DWS.UTC.04.01 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 394
Condition	Cursor_t == 0	
Running test DWS.UTC.04.02 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 403
Condition	Cursor_t == 1	
Running test DWS.UTC.04.03 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 412
Condition	Cursor_t == 2	
Running test DWS.UTC.04.04 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 421
Condition	Cursor_t == 3	
Running test DWS.UTC.04.05 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 430
Condition	Cursor_t == 4	
Running test DWS.UTC.04.06 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 439
Condition	Cursor_t == 5	
Running Suite SW_Up		
Running test DWS.UTC.05.00 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 450
Condition	(SW_Time_t[0] == 0) && (SW_Time_t[1] == 0) && (SW_Time_t[2] == 0) && (SW_Time_t[3] == 1)	
Running test DWS.UTC.05.01 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 460
Condition	(SW_Time_t[0] == 0) && (SW_Time_t[1] == 0) && (SW_Time_t[2] == 1) && (SW_Time_t[3] == 0)	

# Unit Test Report

Running test DWS.UTC.05.02 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 470
Condition	(SW_Time_t[0] == 0) && (SW_Time_t[1] == 1) && (SW_Time_t[2] == 0) && (SW_Time_t[3] == 0)	
Running test DWS.UTC.05.03 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 480
Condition	(SW_Time_t[0] == 0) && (SW_Time_t[1] == 1) && (SW_Time_t[2] == 0) && (SW_Time_t[3] == 0)	
Running test DWS.UTC.05.04 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 490
Condition	(SW_Time_t[0] == 1) && (SW_Time_t[1] == 0) && (SW_Time_t[2] == 0) && (SW_Time_t[3] == 0)	
Running test DWS.UTC.05.05 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 500
Condition	(SW_Time_t[0] == 0) && (SW_Time_t[1] == 0) && (SW_Time_t[2] == 0) && (SW_Time_t[3] == 0)	
Running Suite SW_Reset		
Running test DWS.UTC.06.00 ...		Passed
Running test DWS.UTC.06.01 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 521
Condition	(SW_Time_t[0] == 0) && (SW_Time_t[1] == 0) && (SW_Time_t[2] == 0) && (SW_Time_t[3] == 0)	
Running Suite SW_Lap		
Running test DWS.UTC.07.00 ...		Passed
Running test DWS.UTC.07.01 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 542
Condition	(SW_Lap_t[0] == 0) && (SW_Lap_t[1] == 0) && (SW_Lap_t[2] == 0) && (SW_Lap_t[3] == 99)	
Running test DWS.UTC.07.02 ...		Passed
Running test DWS.UTC.07.03 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 562
Condition	(SW_Lap_t[0] == 0) && (SW_Lap_t[1] == 0) && (SW_Lap_t[2] == 59) && (SW_Lap_t[3] == 99)	
Running test DWS.UTC.07.04 ...		Passed
Running test DWS.UTC.07.05 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 582
Condition	(SW_Lap_t[0] == 0) && (SW_Lap_t[1] == 59) && (SW_Lap_t[2] == 59) && (SW_Lap_t[3] == 99)	
Running test DWS.UTC.07.06 ...		Passed
Running test DWS.UTC.07.07 ...		Failed
File Name	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	Line Number 602
Condition	(SW_Lap_t[0] == 23) && (SW_Lap_t[1] == 59) && (SW_Lap_t[2] == 59) && (SW_Lap_t[3] == 99)	

# Unit Test Report

## Running Suite LED\_Controller

Running test DWS.UTC.08.00 ...	Passed
Running test DWS.UTC.08.01 ...	Passed
Running test DWS.UTC.08.02 ...	Passed
Running test DWS.UTC.08.03 ...	Passed
Running test DWS.UTC.08.04 ...	Failed

<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b>	636
<b>Condition</b>	0		

## Running Suite LED\_Switch

Running test DWS.UTC.09.00 ...	Passed
Running test DWS.UTC.09.01 ...	Passed

## Running Suite LED\_Up

Running test DWS.UTC.10.00 ...	Passed
Running test DWS.UTC.10.01 ...	Passed

## Running Suite LED\_Reset

Running test DWS.UTC.11.00 ...	Passed
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## Running Suite Display\_Combine

Running test DWS.UTC.12.00 ...	Failed
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<b>File Name</b>	C:\Users\JunbeomYoo\hudson\jobs\DWS_TA6\workspace\src\Unit_Test_CTIP.c	<b>Line Number</b>	680
<b>Condition</b>	0		

### Cumulative Summary for Run

Type	Total	Run	Succeeded	Failed	Inactive
Suites	13	13	- NA -	0	0
Test Cases	72	72	38	34	0
Assertions	72	72	38	34	n/a

# Unit Test Report

- 전체 72개의 Unit Test Case
  - 성공: 38
  - 실패: 22
  - 테스트 불가: 12

Identifier	Process Name
DWS.UTC.00.00	User Controller
DWS.UTC.00.01	User Controller
DWS.UTC.00.02	User Controller
DWS.UTC.00.03	User Controller
DWS.UTC.00.04	User Controller
DWS.UTC.00.05	User Controller
DWS.UTC.00.06	User Controller
DWS.UTC.00.07	User Controller
DWS.UTC.00.08	User Controller
DWS.UTC.00.09	User Controller
DWS.UTC.00.10	User Controller
DWS.UTC.00.11	User Controller
DWS.UTC.00.12	User Controller
DWS.UTC.00.13	User Controller
DWS.UTC.00.14	User Controller
DWS.UTC.00.15	User Controller
DWS.UTC.00.16	User Controller

# Unit Test Report

Identifier	Process Name
DWS.UTC.00.17	User Controller
DWS.UTC.00.18	User Controller
DWS.UTC.00.19	User Controller
DWS.UTC.01.00	Mode_Change
DWS.UTC.01.01	Mode_Change
DWS.UTC.01.02	Mode_Change
DWS.UTC.01.03	Mode_Change
DWS.UTC.01.04	Mode_Change
DWS.UTC.01.05	Mode_Change
DWS.UTC.02.00	Auto_Up
DWS.UTC.02.01	Auto_Up
DWS.UTC.02.02	Auto_Up
DWS.UTC.02.03	Auto_Up
DWS.UTC.02.04	Auto_Up
DWS.UTC.02.05	Auto_Up
DWS.UTC.03.00	TS_Up
DWS.UTC.03.01	TS_Up

# Unit Test Report

Identifier	Process Name
DWS.UTC.03.02	TS_Up
DWS.UTC.03.03	TS_Up
DWS.UTC.03.04	TS_Up
DWS.UTC.03.05	TS_Up
DWS.UTC.04.00	TS_Next
DWS.UTC.04.01	TS_Next
DWS.UTC.04.02	TS_Next
DWS.UTC.04.03	TS_Next
DWS.UTC.04.04	TS_Next
DWS.UTC.04.05	TS_Next
DWS.UTC.04.06	TS_Next
DWS.UTC.05.00	SW_Up
DWS.UTC.05.02	SW_Up
DWS.UTC.05.02	SW_Up
DWS.UTC.05.03	SW_Up
DWS.UTC.05.04	SW_Up
DWS.UTC.05.05	SW_Up



# Unit Test Report

Identifier	Process Name
DWS.UTC.06.00	SW_Reset
DWS.UTC.06.01	SW_Reset
DWS.UTC.07.00	SW_Lap
DWS.UTC.07.01	SW_Lap
DWS.UTC.07.02	SW_Lap
DWS.UTC.07.03	SW_Lap
DWS.UTC.07.04	SW_Lap
DWS.UTC.07.05	SW_Lap
DWS.UTC.07.06	SW_Lap
DWS.UTC.07.07	SW_Lap
DWS.UTC.08.00	LED_Controller
DWS.UTC.08.01	LED_Controller
DWS.UTC.08.02	LED_Controller
DWS.UTC.08.03	LED_Controller
DWS.UTC.08.04	LED_Controller
DWS.UTC.09.00	LED_Switch
DWS.UTC.09.01	LED_Switch

# Unit Test Report

Identifier	Process Name
DWS.UTC.10.00	LED_Up
DWS.UTC.10.01	LED_Up
DWS.UTC.11.00	LED_Reset
DWS.UTC.12.00	Display_Combine