Unit Testing Report

for Smart Humidifier System

Project Team

Team 4

Date

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Team Information

고현서

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1   Introduction

1.1 Objectives

본 문서는 2021년 동국대학교의 캡스톤 디자인 강의의 실습과제 검증과정을 설명한다.

실습과제는 스마트가습기시스템(SHS)을 아두이노와 앱인벤터를 통해 하드웨어와 소프트

웨어를 이용한 시스템을 구현하는 프로젝트이다.

1.2 References

   T4_2022_SRA_SHS_Ver6.0

   T4_2022_UTP_SHS_Ver3.0

2   Unit test case specification

   2.1   Test case specification identifier

<Table 1 : Test Design Identification>

Identifier	Feature(Process DFD)	Valid/ Invalid value
TEAM4_SHS_0_000_000	1.1.1 LCD_SET	Data Input : t = 30, h = 90
TEAM4_SHS_0_001_000	1.2.1 Water Level Inspection	Data Input :

		waterlevel = 90
TEAM4_SHS_0_001_001	1.2.1 Water Level Inspection	Data Input : waterlevel = 100
TEAM4_SHS_0_002_000	1.3.1 Mode Controller	Data Input : mode_set = "4" error_signal = 0
TEAM4_SHS_0_002_001	1.3.1 Mode Controller	Data Input : mode_set = "*" error_signal = 0
TEAM4_SHS_0_003_000	1.3.2 Manual Mode Controller	Data Input : mode_set = "1" error_signal = 0
TEAM4_SHS_0_003_001	1.3.2 Manual Mode Controller	Data Input : mode_set = "2" error_signal = 0
TEAM4_SHS_0_003_002	1.3.2 Manual Mode Controller	mode_set ="1" error_signal= Mode_Controller(mode_set,error_signal,error_check)

		=Mode_Controller("1",Mode_Controller("4", 0, 0), 0) error_check = 0
TEAM4_SHS_0_003_003	1.3.2 Manual Mode Controller	mode_set = "1" error_signal = SetOn_Controller(only_set, Set_Controller(input_humi,user_humi,only_set, higher_humi, h), error_signal) =SetOn_Controller(1, Set_Controller("std", 60, 0, 0, 50), 0) error_check = 0
TEAM4_SHS_0_003_004	1.3.2 Manual Mode Controller	mode_set = "2" error_signal = Mode_Controller(mode_set, error_signal) = Mode_Controller("4", 0, 0),1) error_check = 1
TEAM4_SHS_0_003_005	1.3.2 Manual Mode Controller	mode_set = "2" error_signal = =SetOn_Controller(only_set,

		Set_Controller(input_humi,user_humi, only_set, higher_humi, h), error_signal) =SetOn_Controller(1,Set_Controller("std", 60, 0, 0, 50), 0) error_check = 1
TEAM4_SHS_0_003_006	1.3.2 Manual Mode Controller	mode_set = "2" error_signal= Mode_Controller(mode_set,error_signal,error_ check) = Mode_Controller("5", 0, 0) error_check = 0
TEAM4_SHS_0_003_007	1.3.2 Manual Mode Controller	mode_set = "2" error_signal = SetOn_Controller(only_set,higher_humi, error_signal) = SetOn_Controller(1, 1, 0), 61, 60, 0) error_check = 0
TEAM4_SHS_0_003_008	1.3.2 Manual Mode Controller	mode_set = "1" error_signal = SetOff_Controller(SetOn_Controller(only_set,

		higher_humi,error_signal),h, user_humi,error_signal)= SetOff_Controller(SetOn_Controller(1, 1, 0) , 61, 60, 0), 0) error_check = 1
TEAM4_SHS_0_003_009	1.3.2 Manual Mode Controller	mode_set = "1" error_signal = Mode_Controller(mode_set,error_signal) = Mode_Controller("4", 0, 0) error_check = 1
TEAM4_SHS_0_003_010	1.3.2 Manual Mode Controller	mode_set = "1" error_signal = SetOn_Controller(only_set,higher_humi, error_signal) = SetOn_Controller(1, 1, 0) error_check = 1
TEAM4_SHS_0_004_000	1.3.3.1 Auto Mode Control_ON	Data Input : auto_control= Mode_Controller(mode_set,error_signal,error_

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		check) = Mode_Controller(4, 0, 0) h = 45 t = 24 error_signal = 0
TEAM4_SHS_0_004_001	1.3.3.1 Auto Mode Control_ON	Data Input : auto_control= Mode_Controller(mode_set,error_signal,error_ check) = Mode_Controller(4,0,0) h = 55 t = 22 error_signal = 0
TEAM4_SHS_0_004_002	1.3.3.1 Auto Mode Control_ON	Data Input : auto_control= Mode_Controller(mode_set,error_signal,error_ check) = Mode_Controller(4,0,0) h = 65

		t = 19 error_signal = 0
TEAM4_SHS_0_004_003	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0), 0) h = 45 t = 24 error_signal = 0
TEAM4_SHS_0_004_004	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0), 0) h = 55 t = 22 error_signal = 0
TEAM4_SHS_0_004_005	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set,

		Mode_Controller(mode_set,error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0), 0) h = 65 t = 19 error_signal = 0
TEAM4_SHS_0_004_006	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("2", 0, 0), 0) h = 45 t = 24 error_signal = 0
TEAM4_SHS_0_004_007	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("2", 0,

		0), 0) h = 55 t = 22 error_signal = 0
TEAM4_SHS_0_004_008	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("2", 0, 0), 0) h = 65 t = 19 error_signal = 0
TEAM4_SHS_0_004_009	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set,Set Off_Controller(SetOn_Controller(only_set,high er_humi,error_signal),h,user_humi,error_signal) ,error_check)=Mode_Controller("4",SetOff_Con troller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0) h = 45 t = 24

		error_signal = 0
TEAM4_SHS_0_004_010	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set,SetOff_Controller(SetOn_Controller(only_set,higher_humi,error_signal),h,user_humi,error_signal),error_check)=Mode_Controller("4",SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0) h = 55 t = 22 error_signal = 0
TEAM4_SHS_0_004_011	1.3.3.1 Auto Mode Control_ON	auto_control=Mode_Controller(mode_set,SetOff_Controller(SetOn_Controller(only_set,higher_humi,error_signal),h,user_humi,error_signal),error_check)=Mode_Controller("4",SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0) h = 65 t = 19 error_signal = 0
TEAM4_SHS_0_005_000	1.3.3.2 Auto Mode Control_OFF	Data Input : auto_control=

		Mode_Controller(mode_set,error_signal) = Mode_Controller(4,0) h = 30 t = 24 error_signal = 0
TEAM4_SHS_0_005_001	1.3.3.2 Auto Mode Control_OFF	Data Input : auto_control= Mode_Controller(mode_set,error_signal) = Mode_Controller(4,0) h = 40 t = 22 error_signal = 0
TEAM4_SHS_0_005_002	1.3.3.2 Auto Mode Control_OFF	Data Input : auto_control= Mode_Controller(mode_set,error_signal) = Mode_Controller(4,0) h = 40 t = 19 error_signal = 0

TEAM4_SHS_0_005_003	1.3.3.2 Auto Mode Control_OFF	Data Input : auto_control= Mode_Controller(mode_set,error_signal) = Mode_Controller(4,0) h = 100 t = 35 error_signal = 0
TEAM4_SHS_0_005_004	1.3.3.2 Auto Mode Control_OFF	Data Input : auto_control= Mode_Controller(mode_set,error_signal) = Mode_Controller(4,0) h = 100 t = 15 error_signal = 0
TEAM4_SHS_0_005_005	1.3.3.2 Auto Mode Control_OFF	auto_control= Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal,error_check),error_check) =Mode_Controller("4",Mode_Controller("5", 0,

		0) h = 30 t = 24 error_signal = 0
TEAM4_SHS_0_005_006	1.3.3.2 Auto Mode Control_OFF	auto_control= Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal,error_check),error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0) h = 40 t = 22 error_signal = 0
TEAM4_SHS_0_005_007	1.3.3.2 Auto Mode Control_OFF	auto_control= Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal,error_check),error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0)

		h = 40 t = 19 error_signal = 0
TEAM4_SHS_0_005_008	1.3.3.2 Auto Mode Control_OFF	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check),error_check) =Mode_Controller("4",Mode_Controller("2", 0, 0) h = 30 t = 24 error_signal = 0
TEAM4_SHS_0_005_009	1.3.3.2 Auto Mode Control_OFF	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check),error_check) =Mode_Controller("4",Mode_Controller("2", 0, 0) h = 40 t = 22 error_signal = 0

TEAM4_SHS_0_005_010	1.3.3.2 Auto Mode Control_OFF	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check),error_check)=Mode_Controller("4 ", Mode_Controller("2", 0, 0) h = 40 t = 19 error_signal = 0
TEAM4_SHS_0_005_011	1.3.3.2 Auto Mode Control_OFF	auto_control=Mode_Controller(mode_set,Set Off_Controller(SetOn_Controller(only_set,high er_humi,error_signal),h,user_humi, error_signal), error_check) =Mode_Controller("4", SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0) h = 30 t = 24 error_signal = 0
TEAM4_SHS_0_005_012	1.3.3.2 Auto Mode Control_OFF	auto_control=Mode_Controller(mode_set,Set Off_Controller(SetOn_Controller(only_set,high

		er_humi,error_signal),h,user_humi, error_signal), error_check) =Mode_Controller("4", SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0) h = 40 t = 22 error_signal = 0
TEAM4_SHS_0_005_013	1.3.3.2 Auto Mode Control_OFF	auto_control=Mode_Controller(mode_set,Set Off_Controller(SetOn_Controller(only_set,high er_humi,error_signal),h,user_humi, error_signal), error_check) =Mode_Controller("4", SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0) h = 40 t = 19 error_signal = 0
TEAM4_SHS_0_006_000	1.3.3 Auto Mode Controller	Data Input :

		mode_set = "5" error_signal = 0
TEAM4_SHS_0_006_001	1.3.3 Auto Mode Controller	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set, error_signal), h, t, error_signal) = Auto_Controller(Mode_Controller("4", 0, 0), 45, 24, 0) error_check = 0
TEAM4_SHS_0_006_002	1.3.3 Auto Mode Controller	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set, error_signal), h, t, error_signal) = Auto_Controller(Mode_Controller("4", 0, 0), 55, 22, 0) error_check = 0
TEAM4_SHS_0_006_003	1.3.3 Auto Mode Controller	Data Input :

		mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set, error_signal), h, t, error_signal) = Auto_Controller(Mode_Controller("4", 0, 0), 65, 19, 0) error_check = 0
TEAM4_SHS_0_006_004	1.3.3 Auto Mode Controller	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set, error_signal), h, t, error_signal) = Auto_Controller(Mode_Controller("4", 0, 0), 30, 24, 0) error_check = 0
TEAM4_SHS_0_006_005	1.3.3 Auto Mode Controller	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set,

		error_signal), h, t, error_signal) = Auto_Controller(Mode_Controller("4", 0, 0), 40, 22, 0) error_check = 0
TEAM4_SHS_0_006_006	1.3.3 Auto Mode Controller	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set, error_signal), h, t, error_signal) = Auto_Controller(Mode_Controller("4", 0, 0), 40, 19, 0) error_check = 0
TEAM4_SHS_0_006_007	1.3.3 Auto Mode Controller	Data Input : mode_set = "5" error_signal= Mode_Controller(mode_set, Auto_Controller(Mode_Controller(mode_set, error_signal), h, t, error_signal)) =Mode_Controller("5",

		Auto_Controller(Mode_Controller("4", 0, 0), 40, 19, 0), 0) error_check = 0
TEAM4_SHS_0_006_008	1.3.3 Auto Mode Controller	auto_control= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) = Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 45, 24, 0) error_check = 0
TEAM4_SHS_0_006_009	1.3.3 Auto Mode Controller	auto_control= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) =Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 55, 22, 0)
TEAM4_SHS_0_006_010	1.3.3 Auto Mode Controller	auto_control= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t,

		error_signal)
		=Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 65, 19, 0) error_check = 0
TEAM4_SHS_0_006_0011	1.3.3 Auto Mode Controller	mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal); =Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 30, 24, 0) error_check = 0
TEAM4_SHS_0_006_012	1.3.3 Auto Mode Controller	mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) = Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 40, 22, 0)

		error_check = 0
TEAM4_SHS_0_006_013	1.3.3 Auto Mode Controller	mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) =Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 40, 19, 0) error_check = 0
TEAM4_SHS_0_006_014	1.3.3 Auto Mode Controller	mode_set = "4" error_signal=Mode_Controller(mode_set, error_signal, error_check) = Mode_Controller("1", 0, 0) error_check = 0
TEAM4_SHS_0_006_015	1.3.3 Auto Mode Controller	mode_set = "5" error_signal=Mode_Controller(mode_set, error_signal, error_check) = Mode_Controller("1", 0, 0) error_check = 1

TEAM4_SHS_0_006_016	1.3.3 Auto Mode Controller	mode_set = "5" error_signal=SetOn_Controller(only_set, higher_humi, error_signal) = SetOn_Controller(1, 1, 0) error_check = 1
TEAM4_SHS_0_006_017	1.3.3 Auto Mode Controller	mode_set = "5" error_signal=Mode_Controller(mode_set,error _signal) = Mode_Controller("2", 0, 0) error_check = 0
TEAM4_SHS_0_006_018	1.3.3 Auto Mode Controller	mode_set = "5" error_signal=SetOn_Controller(only_set, higher_humi, error_signal) = SetOn_Controller(1, 1, 0) error_check = 0
TEAM4_SHS_0_007_000	1.4.1 Setting Mode Controller	Data Input : input_humi = "std" user_humi = 60 only_set = 0

		higher_humi = 0 h = 50
TEAM4_SHS_0_007_001	1.4.1 Setting Mode Controller	Data Input : input_humi = "error" user_humi = 60 only_set = 0 higher_humi = 0 h = 50
TEAM4_SHS_0_007_002	1.4.1 Setting Mode Controller	Data Input : only_set =1 higher_humi=SetOn_Controller(int only_set,int higher_humi, int error_signal) higher_humi=Set_Controller(input_humi, user_humi, only_set, higher_humi, h) input_humi = "std" user_humi = 60 only_set = 0 higher_humi = 0 h = 50

		error_signal = 0
TEAM4_SHS_0_007_003	1.4.1 Setting Mode Controller	Data Input : only_set =1 higher_humi=SetOn_Controller(int only_set,int higher_humi, int error_signal) higher_humi= Set_Controller(input_humi, user_humi, only_set, higher_humi, h) = SetOn_Controller(int only_set,int higher_humi, int error_signal) higher_humi= Set_Controller("error", 60 , 0, 0, 50) error_signal = 0
TEAM4_SHS_0_007_004	1.4.1 Setting Mode Controller	Data Input : pause= SetOn_Controller(only_set,higher_humi,error_signal) only_set = 1 higher_humi = 1 error_signal = 0

		h = 61 user_humi = 60 error_signal = 0
TEAM4_SHS_0_007_005	1.4.1 Setting Mode Controller	Data Input : pause= SetOn_Controller(only_set,higher_humi,error_signal) only_set = 1 higher_humi = 1 error_signal = 0 h = 59 user_humi = 60 error_signal = 0
TEAM4_SHS_0_007_006	1.4.1 Setting Mode Controller	Data Input : user_humi = 91
TEAM4_SHS_0_007_007	1.4.1 Setting Mode Controller	Data Input : user_humi = -10
TEAM4_SHS_0_007_008	1.4.1 Setting Mode Controller	Data Input : only_set = 1 higher_humi= Set_Controller(input_humi, user_humi, only_set, higher_humi, h)

		error_signal=
		SetOff_Controller(SetOn_Controller(Set_Contr oller(input_humi,user_humi,only_set, higher_humi,h), Set_Controller(input_humi,user_humi, only_set, higher_humi, h), error_signal), h, user_humi, error_signal) =SetOff_Controller(SetOn_Controller(Set_Cont roller("std",60,0,0,50), Set_Controller("std", 60, 0, 0, 50), 0), 61, 60, 0))
TEAM4_SHS_0_007_009	1.4.1 Setting Mode Controller	pause=Set_Controller(input_humi, user_humi, only_set, higher_humi,h) = SetOn_Controller(1, 1, 0) h = 61 user_humi = 60 error_signal=SetOn_Controller(only_set, Set_Controller(input_humi,user_humi, only_set,higher_humi,h), SetOff_Controller(SetOn_Controller(Set_Contr

		oller(input_humi, user_humi, only_set, higher_humi,h), Set_Controller(input_humi, user_humi, only_set, higher_humi, h), error_signal), h, user_humi, error_signal))) =SetOn_Controller(1,Set_Controller("std", 60,0,0,50), SetOff_Controller(SetOn_Controller(Set_Contr oller("std",60,0,0,50), Set_Controller("std", 60, 0, 0, 50), 0), 61, 60, 0)))
TEAM4_SHS_0_007_010	1.4.1 Setting Mode Controller	pause=SetOn_Controller(only_set,Set_Controll er(input_humi, user_humi, only_set, higher_humi,h), SetOff_Controller(SetOn_Controller(only_set,S et_Controller(input_humi, user_humi, only_set, higher_humi, h), error_signal), h, user_humi, Mode_Controller(mode_set, error_signal,error_check)))=(SetOn_Controller(1, Set_Controller("std", 60, 0, 0, 50), SetOff_Controller(SetOn_Controller(1,

		Set_Controller("std",60,0,0,50), Mode_Controller("2", 0, 0)), 61, 60, 0)) h = 61 user_humi = 60 error_signal = 0
TEAM4_SHS_0_007_011	1.4.1 Setting Mode Controller	pause=SetOn_Controller(only_set, Set_Controller(input_humi,user_humi, only_set,higher_humi,h), SetOff_Controller(SetOn_Controller(only_set,Set_Controller(input_humi, user_humi, only_set, higher_humi, h), error_signal), h, user_humi, Mode_Controller(mode_set, error_signal,error_check)))= (SetOn_Controller(1, Set_Controller("std", 60,0,0,50), SetOff_Controller(SetOn_Controller(1,Set_Controller("std",60,0,0,50),Mode_Controller("5", 0, 0)), 61, 60, 0)) h = 61

		user_humi = 60
		error_signal = 0
TEAM4_SHS_0_007_012	1.4.1 Setting Mode Controller	pause=SetOn_Controller(only_set,higher_humi ,Mode_Controller(mode_set,error_signal,error_ check)) =SetOn_Controller(1,1,Mode_Controller("4", 0, 0)) h = 61 user_humi = 60 error_signal = 0
TEAM4_SHS_0_007_013	1.4.1 Setting Mode Controller	pause=SetOn_Controller(only_set,higher_humi ,Mode_Controller(mode_set,error_signal,error_ check)) =SetOn_Controller(1,1,Mode_Controller("5", 0, 0)) h = 61 user_humi = 60 error_signal = 0
TEAM4_SHS_0_007_014	1.4.1 Setting Mode Controller	pause=SetOn_Controller(only_set,higher_humi

		,Mode_Controller(mode_set,error_signal,error_ check)) =SetOn_Controller(1,1,Mode_Controller("1", 0, 0)) h = 61 user_humi = 60 error_signal = 0
TEAM4_SHS_0_007_015	1.4.1 Setting Mode Controller	pause=SetOn_Controller(only_set,higher_humi ,Mode_Controller(mode_set,error_signal,error_ check)) =SetOn_Controller(1,1,Mode_Controller("2", 0, 0)) h = 61 user_humi = 60 error_signal = 0
TEAM4_SHS_0_007_016	1.4.1 Setting Mode Controller	only_set = 1 higher_humi= Set_Controller(input_humi, user_humi, only_set, higher_humi, h) = Set_Controller("std", 60, 0, 0, 50)

,Mode_Controller(mode_set,error_signal,error_ check))

		error_signal= Mode_Controller(mode_set, error_signal,error_check) =Mode_Controller("4", 0, 0)
TEAM4_SHS_0_007_017	1.4.1 Setting Mode Controller	only_set = 1 higher_humi= Set_Controller(input_humi, user_humi, only_set, higher_humi, h) = Set_Controller("std", 60, 0, 0, 50) error_signal= Mode_Controller(mode_set, error_signal,error_check) =Mode_Controller("1", 0, 0)

2.2 Test items

<Table 2 : Test Case Identification>

ID	Test Name	Precondition	Input Specification	Run	Result
TEAM4_SHS_0_000_000	TEST(LcdSetTest, lcdinput)	초기화 상태	temperature : 30 humidity : 90	LCD_SET() 함수 동작	"LCD SET ON" 출력
TEAM4_SHS_0_001_000	TEST(WaterLevelInspectionTest, waterinput)	초기화 상태	waterlevel : 90	WaterLevelInspection() 함수 동작	true 출력
TEAM4_SHS_0_001_001	TEST(WaterLevelLackInspectionTest, waterinput)	초기화 상태	waterlevel : 100	WaterLevelInspection() 함수 동작	false 출력
TEAM4_SHS_0_002_000	TEST(AutoOnControllerTest, modeinput)	초기화 상태	mode_set : "4" error_signal : 0	Mode_Controller() 함수 동작	41 출력
TEAM4_SHS_0_002_001	TEST(ModeControllerErrorTest, modeinput)	초기화 상태	mode_set : "*" error_signal : 0	Mode_Controller() 함수 동작	40 출력
TEAM4_SHS_0_003_000	TEST(ManualOnControllerTest, modeinput)	초기화 상태	mode_set : "1" error_signal : 0	Mode_Controller() 함수 동작	30 출력
TEAM4_SHS_0_003_001	TEST(ManualOffControllerTest, modeinput)	초기화 상태	mode_set : "2" error_signal : 0	Mode_Controller() 함수 동작	31 출력
TEAM4_SHS_0_003_002	TEST(AutoOntoManualOnControllerTest 1, modeinput)	자동모드 ON상태	mode_set ="1" error_signal= Mode_Controller(mode_set,e	Mode_Controller() 함수 동작	

			rror_signal,error_check) =Mode_Controller("1",Mode_ Controller("4", 0, 0), 0) error_check = 0		
TEAM4_SHS_0_003_003	TEST(SetOntoManualOnControllerTest1, modeinput)	습도설정모드 ON 상태	mode_set = "1" error_signal = SetOn_Controller(only_set, Set_Controller(input_humi,us er_humi,only_set, higher_humi, h), error_signal) =SetOn_Controller(1, Set_Controller("std", 60, 0, 0, 50), 0) error_check = 0	Mode_Controller() 함수 동작	40 출력

TEAM4_SHS_0_003_004	TEST(AutoOntoManualOffControllerTest, modeinput)	자동모드ON상태	mode_set = "2" error_signal = Mode_Controller(mode_set, error_signal,error_check) = Mode_Controller("4", 0, 0) error_check = 1	Mode_Controller() 함수 동작	40 출력
TEAM4_SHS_0_003_005	TEST(SetOntoManualOffControllerTest, modeinput)	설정모드ON상태	mode_set = "2" error_signal = =SetOn_Controller(only_set, Set_Controller(input_humi,user_humi, only_set, higher_humi, h), error_signal) =SetOn_Controller(1,Set_Con	Mode_Controller() 함수 동작	40 출력

			troller("std", 60, 0, 0, 50), 0) error_check = 1		
TEAM4_SHS_0_003_006	TEST(AutoOfftoManualOffControllerTest, modeinput)	자동모드 OFF 상태	mode_set = "2" error_signal= Mode_Controller(mode_set,error_signal,error_check) = Mode_Controller("5", 0, 0) error_check = 0	Mode_Controller() 함수 동작	0 출력
TEAM4_SHS_0_003_007	TEST(SetofftoManualOffControllerTest, modeinput)	설정모드 OFF상태	mode_set = "2" error_signal = SetOn_Controller(only_set,higher_humi, error_signal) = SetOn_Controller(1, 1, 0), 61, 60, 0)	Mode_Controller() 함수 동작	0 출력

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			error_check = 0		
TEAM4_SHS_0_003_008	TEST(SetOfftoManualOnControllerTest, modeinput)	설정모드 OFF상태	mode_set = "1" error_signal = SetOff_Controller(SetOn_Controller(only_set, higher_humi,error_signal),h, user_humi,error_signal)= SetOff_Controller(SetOn_Controller(1, 1, 0) , 61, 60, 0), 0) error_check = 1	Mode_Controller() 함수 동작	1 출력
TEAM4_SHS_0_003_009	TEST(AutoOntoManualOnControllerTest2, modeinput)	자동모드 ON상태	mode_set = "1" error_signal = Mode_Controller(mode_set,error_signal)	Mode_Controller() 함수 동작	40 출력

			= Mode_Controller("4", 0, 0) error_check = 1		
TEAM4_SHS_0_003_010	TEST(SetOntoManualOnControllerTest 2, modeinput)	설정모드ON상태	mode_set = "1" error_signal = SetOn_Controller(only_set,hig her_humi, error_signal) = SetOn_Controller(1, 1, 0) error_check = 1	Mode_Controller() 함수 동작	40 출력
TEAM4_SHS_0_004_000	TEST(AutoOnControllerHumiSucceedT est1, autoinput)	초기화 상태	Data Input : auto_control= Mode_Controller(mode_set,e rror_signal) = Mode_Controller(4, 0) h = 45	Mode_Controller() 함수 동작	32 출력

			t = 24 error_signal = 0		
EAM4_SHS_0_004_001	TEST(AutoOnControllerHumiSucceedTest2, autoinput)	초기화 상태	Data Input : auto_control= Mode_Controller(mode_set,error_signal) = Mode_Controller(4,0) h = 55 t = 22 error_signal = 0	Mode_Controller() 함수 동작	32 출력
TEAM4_SHS_0_004_002	TEST(AutoOnControllerHumiSucceedTest3, autoinput)	초기화 상태	Data Input : auto_control= Mode_Controller(mode_set,error_signal) rror_signal)	Mode_Controller() 함수 동작	32 출력

			= Mode_Controller(4,0) h = 65 t = 19 error_signal = 0		
TEAM4_SHS_0_004_003	TEST(AutoOfftoAutoOnControllerHumiSucceedTest1, autoinput)	자동모드 OFF 상태	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0), 0) h = 45 t = 24 error_signal = 0	Auto_Controller() 함수 동작	1 출력

TEAM4_SHS_0_004_004	TEST(AutoOfftoAutoOnControllerHum iSucceedTest2, autoinput)	자동모드 OFF 상태	mode_set = "5" auto_control=Mode_Contr oller(mode_set, Mode_Controller(mode_set, error_signal, error_check), error_check) =Mode_Controller("4",Mod e_Controller("5", 0, 0), 0) h = 55 t = 22 error_signal = 0	Auto_Controller() 함수 동작	1 출력
TEAM4_SHS_0_004_005	TEST(AutoOfftoAutoOnControllerHum iSucceedTest3, autoinput)	자동모드 OFF 상태	auto_control=Mode_Contr	Auto_Controller() 함수 동작	1 출력

			oller(mode_set, Mode_Controller(mode_set, error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0), 0) h = 65 t = 19 error_signal = 0		
TEAM4_SHS_0_004_006	TEST(ManualOfftoAutoOnControllerHumiSucceedTest1, autoinput)	수동모드 OFF -> 자동모드 ON 상태	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set,	Auto_Controller() 함수 동작	1 출력

			error_signal, error_check), error_check) =Mode_Controller("4",Mod e_Controller("2", 0, 0), 0) h = 45 t = 24 error_signal = 0		
TEAM4_SHS_0_004_007	TEST(ManualOfftoAutoOnControllerH umiSucceedTest2, autoinput)	수동모드 OFF -> 자동모드 ON 상태	auto_control=Mode_Contr oller(mode_set, Mode_Controller(mode_set, error_signal, error_check), error_check)	Auto_Controller() 함수 동작	1 출력

			=Mode_Controller("4",Mode_Controller("2", 0, 0), 0) h = 55 t = 22 error_signal = 0		
TEAM4_SHS_0_004_008	TEST(ManualOfftoAutoOnControllerHumiSucceedTest3, autoinput)	수동모드 OFF -> 자동모드 ON 상태	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set, error_signal, error_check), error_check) =Mode_Controller("4",Mode_Controller("2", 0, 0), 0)	Auto_Controller() 함수 동작	1 출력

			h = 65 t = 19 error_signal = 0		
TEAM4_SHS_0_004_009	TEST(SetOntoSetOfftoAutoOnControllerHumiSucceedTest1, autoinput)	습도설정모드ON->습도설정모드OFF 상태	auto_control=Mode_Controller(mode_set,SetOff_Controller(SetOn_Controller(only_set,higher_humi,error_signal),h,user_humi,error_signal),error_check)=Mode_Controller("4",SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0)	Auto_Controller() 함수 동작	1 출력

			h = 45 t = 24 error_signal = 0		
TEAM4_SHS_0_004_010	TEST(SetOntoSetOfftoAutoOnControllerHumiSucceedTest2, autoinput)	습도설정모드ON->습도설정모드OFF 상태	auto_control=Mode_Controller(mode_set,SetOff_Controller(SetOn_Controller(only_set,higher_humi,error_signal),h,user_humi,error_signal),error_check)=Mode_Controller("4",SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0)	Auto_Controller() 함수 동작	1 출력

			h = 55 t = 22 error_signal = 0		
TEAM4_SHS_0_004_011	TEST(SetOntoSetOfftoAutoOnControllerHumiSucceedTest3, autoinput)	습도설정모드ON->습도설정모드OFF 상태	auto_control=Mode_Controller(mode_set,SetOff_Controller(SetOn_Controller(only_set,higher_humi,error_signal),h,user_humi,error_signal),error_check)=Mode_Controller("4",SetOff_Controller(SetOn_Controller(1, 1, 0), 59, 60, 0), 0)	Auto_Controller() 함수 동작	1 출력

			h = 65 t = 19 error_signal = 0		
TEAM4_SHS_0_005_000	TEST(AutoOnControllerHumiFailTest1, autoinput)	초기화 상태	Data Input : auto_control= Mode_Controller(mode_set, error_signal) = Mode_Controller(4,0) h = 30 t = 24 error_signal = 0	Auto_Controller() 함수 실행	33 출력
TEAM4_SHS_0_005_001	TEST(AutoOnControllerHumiFailTest2, autoinput)	초기화 상태	Data Input : auto_control=	Auto_Controller() 함수 실행	33 출력

			Mode_Controller(mode_set, error_signal) = Mode_Controller(4,0) h = 40 t = 22 error_signal = 0		
TEAM4_SHS_0_005_002	TEST(AutoOnControllerHumiFailTest3, autoinput)	초기화 상태	Data Input : auto_control= Mode_Controller(mode_set, error_signal) = Mode_Controller(4,0) h = 40	Auto_Controller() 함수 실행	33 출력

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			t = 19 error_signal = 0		
TEAM4_SHS_0_005_003	TEST(AutoOnControlErrorTest1, autoinput)	초기화 상태	Data Input : auto_control= Mode_Controller(mode_set, error_signal) = Mode_Controller(4,0) h = 100 t = 35 error_signal = 0	Mode_Controller()함수 출력	40 출력
TEAM4_SHS_0_005_004	TEST(AutoOnControlErrorTest2, autoinput)	초기화 상태	Data Input : auto_control= Mode_Controller(mode_set,	Mode_Controller()함수 출력	40 출력

			error_signal) = Mode_Controller(4,0) h = 100 t = 15 error_signal = 0		
TEAM4_SHS_0_005_005	TEST(AutoOfftoAutoOnControllerHumiFailTest1, autoinput)	자동모드 OFF상태	auto_control= Mode_Controller(mode_set, Mode_Controller(mode_set, error_signal,error_check),error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0)	Auto_Controller()함수 실행	1 출력

			h = 30 t = 24 error_signal = 0		
TEAM4_SHS_0_005_006	TEST(AutoOfftoAutoOnControllerHumiFailTest2, autoinput)	자동모드 OFF상태	auto_control= Mode_Controller(mode_set, Mode_Controller(mode_set, error_signal,error_check),error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0) h = 40 t = 22 error_signal = 0	Auto_Controller()함수 실행	1 출력

TEAM4_SHS_0_005_007	TEST(AutoOfftoAutoOnControllerHumiFailTest3, autoinput)	자동모드 OFF상태	auto_control= Mode_Controller(mode_set, Mode_Controller(mode_set, error_signal,error_check),error_check) =Mode_Controller("4",Mode_Controller("5", 0, 0) h = 40 t = 19 error_signal = 0	Auto_Controller()함수 실행	1 출력
TEAM4_SHS_0_005_008	TEST(ManualOfftoAutoOnControllerHumiFailTest1, autoinput)	자동모드 OFF상태	auto_control=Mode_Controller(mode_set,	Auto_Controller()함수 실행	1 출력

			Mode_Controller(mode_set, error_signal, error_check),error_check) =Mode_Controller("4",Mode_Controller("2", 0, 0) h = 30 t = 24 error_signal = 0		
TEAM4_SHS_0_005_009	TEST(ManualOfftoAutoOnControllerHumiFailTest2, autoinput)	자동모드 OFF상태	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set, error_signal,	Auto_Controller()함수 실행	1 출력

			error_check),error_check) =Mode_Controller("4",Mode_Controller("2", 0, 0) h = 40 t = 22 error_signal = 0		
TEAM4_SHS_0_005_010	TEST(ManualOntoAutoOffControllerHumiFailTest3, autoinput)	자동모드 OFF상태	auto_control=Mode_Controller(mode_set, Mode_Controller(mode_set, error_signal, error_check),error_check)= Mode_Controller("4",	Auto_Controller()함수 실행	1 출력

			Mode_Controller("2", 0, 0) h = 40 t = 19 error_signal = 0		
TEAM4_SHS_0_005_011	TEST(SetOntoSetOfftoAutoOnControll erHumiFailTest1, autoinput)	습도설정모드OFF 상태	auto_control=Mode_Contr oller(mode_set,SetOff_Cont roller(SetOn_Controller(onl y_set,higher_humi,error_sig nal),h,user_humi, error_signal), error_check) =Mode_Controller("4", SetOff_Controller(SetOn_Co	Auto_Controller()함수 출력	1 출력

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			ntroller(1, 1, 0), 59, 60, 0), 0) h = 30 t = 24 error_signal = 0		
TEAM4_SHS_0_005_012	TEST(SetOntoSetOfftoAutoOnControllerHumiFailTest2, autoinput)	습도설정모드OFF 상태	auto_control=Mode_Contr oller(mode_set,SetOff_Cont roller(SetOn_Controller(onl y_set,higher_humi,error_sig nal),h,user_humi, error_signal), error_check) =Mode_Controller("4", SetOff_Controller(SetOn_Co	Auto_Controller()함수 출력	1 출력

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			ntroller(1, 1, 0), 59, 60, 0), 0)		
			h = 40		
			t = 22		
			error_signal = 0		
TEAM4_SHS_0_005_013	TEST(SetOntoSetOfftoAutoOnControll erHumiFailTest3, autoinput)	습도설정모드OFF 상태	auto_control=Mode_Contr oller(mode_set,SetOff_Cont roller(SetOn_Controller(onl y_set,higher_humi,error_sig nal),h,user_humi, error_signal), error_check) =Mode_Controller("4", SetOff_Controller(SetOn_Co	Auto_Controller()함수 출력	1 출력

			ntroller(1, 1, 0), 59, 60, 0), 0) h = 40 t = 19 error_signal = 0		
TEAM4_SHS_0_006_000	TEST(AutoOffControllerTest, modeinput)	초기화 상태	Data Input : mode_set = "5" error_signal = 0	Mode_Controller()함수 실행	34 출력
TEAM4_SHS_0_006_001	TEST(AutoOntoAutoOffControllerTest 1, modeinput)	자동모드 ON상태	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Con troller(mode_set, error_signal),h,t,error_signal	Mode_Controller()함수 실행	34 출력

			) = Auto_Controller(Mode_Con troller("4", 0, 0), 45, 24, 0) error_check = 0		
TEAM4_SHS_0_006_002	TEST(AutoOntoAutoOffControllerTest 2, modeinput)	자동모드 ON상태	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Con troller(mode_set, error_signal),　　h,　　t, error_signal)	Mode_Controller()함수 실행	34 출력

			=		
			Auto_Controller(Mode_Con troller("4", 0, 0), 55, 22, 0) error_check = 0		
TEAM4_SHS_0_006_003	TEST(AutoOntoAutoOffControllerTest 3, modeinput)	자동모드 ON상태	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Con troller(mode_set, error_signal), h, t, error_signal) =	Mode_Controller()함수 실행	34 출력

			Auto_Controller(Mode_Controller("4", 0, 0), 65, 19, 0) error_check = 0		
TEAM4_SHS_0_006_004	TEST(AutoOntoAutoOffControllerTest 4, modeinput)	자동모드 ON상태	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set, error_signal),h,t, error_signal) = Auto_Controller(Mode_Con	Mode_Controller()함수 실행	34 출력

			troller("4", 0, 0), 30, 24, 0) error_check = 0		
TEAM4_SHS_0_006_005	TEST(AutoOntoAutoOffControllerTest5, modeinput)	자동모드 ON상태	Data Input : mode_set = "5" error_signal= Auto_Controller(Mode_Con troller(mode_set, error_signal), h, t, error_signal) = Auto_Controller(Mode_Con troller("4", 0, 0), 40, 22, 0) error_check = 0	Mode_Controller()함수 실행	34 출력

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| TEAM4_SHS_0_006_006 | TEST(AutoOntoAutoOffControllerTest6, modeinput) | 자동모드 ON상태 | Data Input :

mode_set = "5"

error_signal=

Auto_Controller(Mode_Controller(mode_set, error_signal), h, t, error_signal)

 =

Auto_Controller(Mode_Controller("4", 0, 0), 40, 19, 0)

error_check = 0 | Mode_Controller()함수 실행 | 34 출력 |
| TEAM4_SHS_0_006_007 | TEST(AutoOfftoAutoOntoAutoOffController6, autoinput) | 자동모드OFF->자동모드 ON상태 | Data Input : | Mode_Controller()함수 실행 | 34 출력 |

			mode_set = "5"		
			error_signal=		
			Mode_Controller(mode_set,		
			Auto_Controller(Mode_Con		
			troller(mode_set,		
			error_signal),h,t,		
			error_signal))		
			=Mode_Controller("4",		
			Auto_Controller(Mode_Con		
			troller("5", 0, 0), 40, 19, 0),		
			0)		
			error_check = 0		

TEAM4_SHS_0_006_008	TEST(AutoOfftoAutoOnControllerHumiSucceedTest1, autoinput)	자동모드OFF상태	auto_control= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) = Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 45, 24, 0) error_check = 0	Auto_Controller()함수 실행	1 출력
TEAM4_SHS_0_006_009	TEST(AutoOfftoAutoOnControllerHumiSucceedTest2, autoinput)	자동모드OFF상태	auto_control=	Auto_Controller()함수 실행	1 출력

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			Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) =Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0), 0), 55, 22, 0)		
TEAM4_SHS_0_006_010	TEST(AutoOfftoAutoOnControllerHumiSucceedTest3, autoinput)	자동모드OFF상태	auto_control= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) =Auto_Controller(Mode_Co	Auto_Controller()함수 실행	1 출력

			ntroller("4", Mode_Controller("5", 0, 0), 0), 65, 19, 0) error_check = 0		
TEAM4_SHS_0_006_0011	TEST(AutoOfftoAutoOntoAutoOffCont roller4, autoinput)	자동모드　OFF-> 자동모드 ON 상태	mode_set = "5" error_signal= Auto_Controller(Mode_Con troller(mode_set,Mode_Con troller(mode_set,error_sign al)), h, t, error_signal); =Auto_Controller(Mode_Co ntroller("4",	Auto_Controller()함수 실행	34 출력

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			Mode_Controller("5", 0, 0), 0), 30, 24, 0) error_check = 0		
TEAM4_SHS_0_006_012	TEST(AutoOfftoAutoOntoAutoOffController5, autoinput)	자동모드 OFF-> 자동모드 ON 상태	mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) = Auto_Controller(Mode_Controller("4",	Auto_Controller()함수 실행	34 출력

			Mode_Controller("5", 0, 0), 0), 40, 22, 0) error_check = 0		
TEAM4_SHS_0_006_013	TEST(AutoOfftoAutoOntoAutoOffController6, autoinput)	자동모드 OFF-> 자동모드 ON 상태	mode_set = "5" error_signal= Auto_Controller(Mode_Controller(mode_set,Mode_Controller(mode_set,error_signal)), h, t, error_signal) =Auto_Controller(Mode_Controller("4", Mode_Controller("5", 0, 0),	Auto_Controller()함수 실행	34 출력

			0), 40, 19, 0) error_check = 0		
TEAM4_SHS_0_006_014	TEST(ManualOntoAutoOnControllerTest, autoinput)	수동모드ON상태	mode_set = "4" error_signal=Mode_Controller(mode_set, error_signal, error_check) = Mode_Controller("1", 0, 0) error_check = 0	Mode_Controller()함수 실행	40 출력
TEAM4_SHS_0_006_015	TEST(ManualOntoAutoOffControllerTest, autoinput)	수동모드ON상태	mode_set = "5" error_signal=Mode_Controller(mode_set, error_signal, error_check)	Mode_Controller()함수 실행	40 출력

—

			= Mode_Controller("1", 0, 0) error_check = 1		
TEAM4_SHS_0_006_016	TEST(SetOntoAutoOffControllerTest2, autoinput)	습도설정모드ON상태	mode_set = "5" error_signal=SetOn_Controller(only_set, higher_humi, error_signal) = SetOn_Controller(1, 1, 0) error_check = 1	Mode_Controller()함수 실행	40 출력
TEAM4_SHS_0_006_017	TEST(ManualOfftoAutoOffControllerTest, autoinput)	습도설정모드ON상태	mode_set = "5" error_signal=Mode_Controller(mode_set,error_signal) = Mode_Controller("2", 0, 0)	Mode_Controller()함수 실행	34 출력

			error_check = 0		
TEAM4_SHS_0_006_018	TEST(SetOntoAutoOffControllerTest1, autoinput)	습도설정모드 ON 상태	mode_set = "5" error_signal=SetOn_Control ler(only_set, higher_humi, error_signal) = SetOn_Controller(1, 1, 0) error_check = 0	Mode_Controller()함수 실행	34 출력
TEAM4_SHS_0_007_000	TEST(SetControllerTest, setinput)	초기화 상태	Data Input : input_humi = "std" user_humi = 60 only_set = 0 higher_humi = 0 h = 50	Set_Controller()함수 실행	1 출력

| TEAM4_SHS_0_007_001 | TEST(SetControllerErrorTest, setinput) | 초기화 상태 | Data Input : input_humi = "error" user_humi = 60 only_set = 0 higher_humi = 0 h = 50 | Set_Controller()함수 실행 | 40 출력 |
| TEAM4_SHS_0_007_002 | TEST(SetOnControllerTest, setoninput) | 초기화 상태 | Data Input : only_set =1 higher_humi=SetOn_Contr oller(int   only_set,int higher_humi,   int error_signal) | SetOn_Controller()함수 실행 | 35 출력 |

			higher_humi=Set_Controlle r(input_humi,　user_humi,　only_set, higher_humi,　h)　input_humi = "std"　user_humi = 60　only_set = 0　higher_humi = 0　h = 50　error_signal = 0		
TEAM4_SHS_0_007_003	TEST(SetOnControllerErrorTest, setoninput)	초기화 상태	Data Input :　only_set =1　higher_humi=SetOn_Contr	SetOn_Controller()함수 실행	40 출력

			oller(int only_set,int higher_humi, int error_signal) higher_humi= Set_Controller(input_humi, user_humi, only_set, higher_humi, h) = SetOn_Controller(int only_set,int higher_humi, int error_signal) higher_humi= Set_Controller("error", 60		

			, 0, 0, 50) error_signal = 0		
TEAM4_SHS_0_007_004	TEST(SetOffControllerTest, setoffinput)	초기화 상태	Data Input : pause= SetOn_Controller(only_set,h igher_humi,error_signal) only_set = 1 higher_humi = 1 error_signal = 0 h = 61 user_humi = 60 error_signal = 0	SetOff_Controller()함수 실행	36 출력
TEAM4_SHS_0_007_00 5	TEST(SetOffControllerErrorTest, setoffinput)	초기화 상태	Data Input :	SettOff_Controller()함수 실행	40 출력

			pause= SetOn_Controller(only_set,h igher_humi,error_signal) only_set = 1 higher_humi = 1 error_signal = 0 h = 59 user_humi = 60 error_signal = 0		
TEAM4_SHS_0_007_006	TEST(SetMistakeTest1, setoffinput)	초기화 상태	Data Input : user_humi = 91	Set_Mistake()함수 실행	37 출력
TEAM4_SHS_0_007_007	TEST(SetMistakeTest2, setoffinput)	초기화 상태	Data Input : user_humi = -10	Set_Mistake()함수 실행	37 출력
TEAM4_SHS_0_007_008	TEST(RepeatSetOnControllerTest, setinput)	습도설정모드ON->습도설정모드OFF 상태	Data Input : only_set = 1	SetOn_Controller()함수 실행	1 출력

			higher_humi= Set_Controller(input_humi, user_humi, only_set, higher_humi, h) error_signal= SetOff_Controller(SetOn_Co ntroller(Set_Controller(inpu t_humi,user_humi,only_set, higher_humi,h), Set_Controller(input_humi,u ser_humi, only_set, higher_humi, h),		

			error_signal), h, user_humi, error_signal) =SetOff_Controller(SetOn_Controller(Set_Controller("std",60,0,0,50), Set_Controller("std", 60, 0, 0, 50), 0), 61, 60, 0))		
TEAM4_SHS_0_007_009	TEST(RepeatSetOffControllerTest1, setinput)	습도설정모드 ON->습도설정모드 OFF-> 습도설정모드 ON 상태	pause=Set_Controller(input_humi, user_humi, only_set, higher_humi,h) = SetOn_Controller(1, 1, 0) h = 61 user_humi = 60 error_signal=SetOn_Control	SetOff_Controller()함수 실행	1 출력

			ler(only_set, Set_Controller(input_humi,u ser_humi, only_set,higher_humi,h), SetOff_Controller(SetOn_Co ntroller(Set_Controller(inpu t_humi, user_humi, only_set, higher_humi,h), Set_Controller(input_humi, user_humi, only_set, higher_humi, h), error_signal), h, user_humi,		

			error_signal))) =SetOn_Controller(1,Set_Controller("std", 60,0,0,50), SetOff_Controller(SetOn_Controller(Set_Controller("std",60,0,0,50), Set_Controller("std", 60, 0, 0, 50), 0), 61, 60, 0)))		
TEAM4_SHS_0_007_010	TEST(RepeatSetOffControllerTest2, setinput)	수동모드OFF상태	pause=SetOn_Controller(only_set,Set_Controller(input_humi, user_humi, only_set, higher_humi,h), SetOff_Controller(SetOn_Controller(only_set,Set_Controller(input_humi, user_humi, only_set, higher_humi, h),	SetOff_Controller()함수 실행	0 출력

			error_signal), h, user_humi, Mode_Controller(mode_set, error_signal,error_check)))= (SetOn_Controller(1, Set_Controller("std", 60, 0, 0, 50), SetOff_Controller(SetOn_Controller(1, Set_Controller("std",60,0,0,50), Mode_Controller("2", 0, 0)), 61, 60, 0)) h = 61		

			user_humi = 60 error_signal = 0		
TEAM4_SHS_0_007_011	TEST(RepeatSetOffControllerTest3, setinput)	자동모드 OFF상태	pause=SetOn_Controller(only_set, Set_Controller(input_humi,user_humi, only_set,higher_humi,h), SetOff_Controller(SetOn_Controller(only_set,Set_Controller(input_humi, user_humi, only_set, higher_humi, h), error_signal), h, user_humi,	SetOff_Controller()함수 실행	0 출력

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				Mode_Controller(mode_set, error_signal,error_check)))= (SetOn_Controller(1, Set_Controller("std", 60,0,0,50), SetOff_Controller(SetOn_Controller(1,Set_Controller("std",60,0,0,50),Mode_Controller("5", 0, 0)), 61, 60, 0)) h = 61 user_humi = 60 error_signal = 0		

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TEAM4_SHS_0_007_012	TEST(AutoOntoSetOntoSetOffControll erTest, setoffinput)	자동모드ON-> 습도설정모드 ON상태	pause=SetOn_Controller(o nly_set,higher_humi,Mode_ Controller(mode_set,error_s ignal,error_check)) =SetOn_Controller(1,1,Mod e_Controller("4", 0, 0)) h = 61 user_humi = 60 error_signal = 0	SetOff_Controller()함수 실행	0 출력
TEAM4_SHS_0_007_013	TEST(AutoOfftoSetOntoSetOffControll erTest, setoffinput)	자동모드OFF->습도설정모드ON상태	pause=SetOn_Controller(o nly_set,higher_humi,Mode_ Controller(mode_set,error_s	SetOff_Controller()함수 실행	0 출력

			ignal,error_check)) =SetOn_Controller(1,1,Mode_Controller("5", 0, 0)) h = 61 user_humi = 60 error_signal = 0		
TEAM4_SHS_0_007_014	TEST(ManualOntoSetOntoSetOffControllerTest, setoffinput)	수동모드ON->습도설정모드ON 상태	pause=SetOn_Controller(only_set,higher_humi,Mode_Controller(mode_set,error_signal,error_check)) =SetOn_Controller(1,1,Mode_Controller("1", 0, 0))	SetOff_Controller()함수 실행	0 출력

			h = 61		
			user_humi = 60		
			error_signal = 0		
TEAM4_SHS_0_007_015	TEST(ManualOfftoSetOntoSetOffControllerTest, setoffinput)	수동모드OFF -> 습도설정모드 ON 상태	pause=SetOn_Controller(only_set,higher_humi,Mode_Controller(mode_set,error_signal,error_check)) =SetOn_Controller(1,1,Mode_Controller("2", 0, 0)) h = 61 user_humi = 60 error_signal = 0	SetOff_Controller()함수 실행	0 출력

TEAM4_SHS_0_007_016	TEST(AutoOntoSetOnControllerTest, setoffinput)	자동모드ON상태	only_set = 1 higher_humi= Set_Controller(input_humi, user_humi, only_set, higher_humi, h) = Set_Controller("std", 60, 0, 0, 50) error_signal= Mode_Controller(mode_set, error_signal,error_check) =Mode_Controller("4", 0, 0)	SetOn_Controller()함수 실행	40 출력
TEAM4_SHS_0_007_017	TEST(ManualOntoSetOnControllerTest, setoffinput)	수동모드ON상태	only_set = 1	SetOn_Controller()함수 실행	40 출력

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			higher_humi=		
			Set_Controller(input_humi,		
			user_humi, only_set,		
			higher_humi, h) =		
			Set_Controller("std", 60, 0,		
			0, 50)		
			error_signal=		
			Mode_Controller(mode_set,		
			error_signal,error_check)		
			=Mode_Controller("1", 0, 0)		

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2.3　Input specifications

<Table 1 : Test Design Identification> 참조

8.4　Output Specifications

<Table 2 : Test Case Identification> 참조

3　Environmental needs

UTP_Ver3.0, 9 Environmental needs 참조

4.　Unit test summary report identifier

4.1　Test summary report identifier

Test Case Identifier	Result
TEAM4_SHS_0_000_000	passed
TEAM4_SHS_0_001_000	passed
TEAM4_SHS_0_001_001	passed
TEAM4_SHS_0_002_000	passed
TEAM4_SHS_0_002_001	passed
TEAM4_SHS_0_003_000	passed

TEAM4_SHS_0_003_001	passed
TEAM4_SHS_0_003_002	passed
TEAM4_SHS_0_003_003	passed
TEAM4_SHS_0_003_004	passed
TEAM4_SHS_0_003_005	passed
TEAM4_SHS_0_003_006	passed
TEAM4_SHS_0_003_007	passed
TEAM4_SHS_0_003_008	passed
TEAM4_SHS_0_003_009	passed
TEAM4_SHS_0_003_010	passed
TEAM4_SHS_0_004_000	passed
TEAM4_SHS_0_004_001	passed
TEAM4_SHS_0_004_002	passed
TEAM4_SHS_0_004_003	passed
TEAM4_SHS_0_004_004	passed
TEAM4_SHS_0_004_005	passed

TEAM4_SHS_0_004_006	passed
TEAM4_SHS_0_004_007	passed
TEAM4_SHS_0_004_008	passed
TEAM4_SHS_0_004_009	passed
TEAM4_SHS_0_004_010	passed
TEAM4_SHS_0_004_011	passed
TEAM4_SHS_0_005_000	passed
TEAM4_SHS_0_005_001	passed
TEAM4_SHS_0_005_002	passed
TEAM4_SHS_0_005_003	passed
TEAM4_SHS_0_005_004	passed
TEAM4_SHS_0_005_005	passed
TEAM4_SHS_0_005_006	passed
TEAM4_SHS_0_005_007	passed
TEAM4_SHS_0_005_008	passed
TEAM4_SHS_0_005_009	passed

TEAM4_SHS_0_005_010	passed
TEAM4_SHS_0_005_011	passed
TEAM4_SHS_0_005_012	passed
TEAM4_SHS_0_005_013	passed
TEAM4_SHS_0_006_000	passed
TEAM4_SHS_0_006_001	passed
TEAM4_SHS_0_006_002	passed
TEAM4_SHS_0_006_003	passed
TEAM4_SHS_0_006_004	passed
TEAM4_SHS_0_006_005	passed
TEAM4_SHS_0_006_006	passed
TEAM4_SHS_0_006_007	passed
TEAM4_SHS_0_006_008	passed
TEAM4_SHS_0_006_009	passed
TEAM4_SHS_0_006_010	passed
TEAM4_SHS_0_006_0011	passed

TEAM4_SHS_0_006_012	passed
TEAM4_SHS_0_006_013	passed
TEAM4_SHS_0_006_014	passed
TEAM4_SHS_0_006_015	passed
TEAM4_SHS_0_006_016	passed
TEAM4_SHS_0_006_017	passed
TEAM4_SHS_0_006_018	passed
TEAM4_SHS_0_007_000	passed
TEAM4_SHS_0_007_001	passed
TEAM4_SHS_0_007_002	passed
TEAM4_SHS_0_007_003	passed
TEAM4_SHS_0_007_004	passed
TEAM4_SHS_0_007_005	passed
TEAM4_SHS_0_007_006	passed
TEAM4_SHS_0_007_007	passed
TEAM4_SHS_0_007_008	passed

TEAM4_SHS_0_007_009	passed
TEAM4_SHS_0_007_010	passed
TEAM4_SHS_0_007_011	passed
TEAM4_SHS_0_007_012	passed
TEAM4_SHS_0_007_013	passed
TEAM4_SHS_0_007_014	passed
TEAM4_SHS_0_007_015	passed
TEAM4_SHS_0_007_016	passed
TEAM4_SHS_0_007_017	passed

4.2   Evaluation

Total Test Case : 78

Passed : 78

Failed : 0