

Unit Test Report for NPS System

- Test Cases Specification
- Test Summary Report

Project Team

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Team Information

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1 Introduction

1.1 Objectives

본 문서는 2015년 건국대학교 컴퓨터 공학과의 소프트웨어공학 개론 강의의 실습과제를 설명한다. 실습 과제는 네트워크 프린터 시스템(NPS : Network Printer System)을 소프트웨어만을 이용한 가상의 시스템으로 구현하는 것이다.

1.2 References

Yourdon, Edward(유르돈, 에드워드), "(새로운 방식에 의한)구조적 시스템 분석", 이한 출판사, 1994

Keller, Robert, "practice of structured analysis : exploding myths", Yourdon Press, 1983

T7_SRA_team7_3.0

T7_SDA_team7_1.0

2 Unit test case specification

2.1 Test case specification identifier

<Table 1 : Test Design Identification>

Identifier	Feature(Process DFD)	Valid / <i>Invalid</i> value
NPS_0_000_000	2.1.1.1 Calculator Selector	OD(currentInput) : {1} CSD : {0} CKD : {0}
NPS_0_000_001	2.1.1.1 Calculator Selector	OD(currentInput) : {3} CSD : {0} CKD : {0}
NPS_0_000_002	2.1.1.1 Calculator Selector	OD(currentInput) : {4} CSD : {0} CKD : {0}
NPS_0_000_003	2.1.1.1 Calculator Selector	OD(currentInput) : {5} CSD : {0} CKD : {0}
NPS_0_000_004	2.1.1.1 Calculator	CSD : {1}

	Selector	CKD : {0}
NPS_0_000_005	2.1.1.1 Calculator Selector	CSD : {0} CKD : {1}
NPS_0_001_000	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}
NPS_0_001_001	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test2.txt}
NPS_0_001_002	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : {0,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}
NPS_0_001_003	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : {3000, 0,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}
NPS_0_001_004	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411269,test.txt}
NPS_0_001_005	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt} waitUser : 5
NPS_0_002_000	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : {{201411280,201411297,201411304},3,3} OD(regUserID): {201411269}
NPS_0_002_001	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : {{201411280, 201411297,201411304},3,1} OD(regUserID): {201411269}
NPS_0_002_002	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : { {201411269, 201411278, 201411280, 201411297, 201411304},5,3}

		OD(regUserID): {201411223}
NPS_0_002_003	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : {{201411269, 201411297,201411304},3,3} OD(regUserID): {201411269}
NPS_0_003_000	2.1.1.4 Del Cal	CECD(user, userNum, currentStatus) : {{201411269,201411297,201411304},3,3} OD(delUserID): {201411269}
NPS_0_003_001	2.1.1.4 Del Cal	CECD(user, userNum, currentStatus) : {{201411269, 201411297,201411304},3,1} OD(delUserID): {201411269}
NPS_0_003_002	2.1.1.4 Del Cal 사	CECD(user, userNum, currentStatus) : {{201411280, 201411297,201411304},3,3} OD(delUserID): {201411269}
NPS_0_004_000	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : {2000, 50, 3} OD(chargeInk,chargePaper) : {500,00}
NPS_0_004_001	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : {2000,50,1} OD(chargeInk,chargePaper) : {500,00}
NPS_0_004_002	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : {2000, 50, 3} OD(chargeInk,chargePaper) : {1000,00}
NPS_0_004_003	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : {2000,50,3} OD(chargeInk,chargePaper) : {00,30}
NPS_0_004_004	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : {2000,50,1} OD(chargeInk,chargePaper) : {00,30}
NPS_0_004_005	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : {2000,50,3} OD(chargeInk,chargePaper) : {00,80}
NPS_0_005_000	2.1.1.6 Stop Cal	CSD : {1}
NPS_0_006_000	2.1.1.7 Check Cal	CKD : {1}
NPS_0_007_000	2.1.2 Print Controller Mode 가 3 이고	CD(mode, checkStatus, checkTime) : {3, 1, 현재시간}

	checkStauts 가 1 이고 checkTlme 이 현재시간이랑 같으면 call displayController	
NPS_0_007_001	2.1.2 Print Controller Mode 가 3 이고 (checkStatus 가 1 인 경우 =>call wait)	CD(mode, checkStatus, checkTime) : {3,0, 현재시간}
NPS_0_007_002	2.1.2 Print Controller Mode 가 0 이면 =>call print	CD(mode, checkStatus, checkTime) : {0,0,현재시간}
NPS_0_007_003	2.1.2 Print Controller Mode 가 3 이 아니고 mode 가 0 이 아니면 =>call displayController	CD(mode, checkStatus, checkTime) : {4,0,현재시간}
NPS_0_008_000	2.1.3 Wait	CD(paper, ink) : (3000, 10)
NPS_0_009_000	2.1.4 Print	CD(cdstatus, cdlist, cdpage, cdcontent)
NPS_0_010_000	2.1.5 Display Controller	CD(mode) : {0}
NPS_0_010_001	2.1.5 Display Controller	CD(mode) : {1}
NPS_0_010_002	2.1.5 Display Controller	CD(mode) : {2}
NPS_0_010_003	2.1.5 Display Controller	CD(mode) : {4}
NPS_0_010_004	2.1.5 Display Controller	CD(mode) : {5}
NPS_0_011_000	2.1.6 Stop Printing	CD(paper,ink) : {50, 2500}
NPS_0_012_000	2.1.7 Warning Printing	CD(paper,ink,mode,calNum) : {50, 2500,2,3}
NPS_0_013_000	2.1.8 Check Printing	CD(checkStatus, checkTime) : {1,현재시 간}
NPS_0_014_000	2.1.9 Charge Printing 충전할 잉크가 0 보다 클 때	CD(chargeInk, chargePaper) : {300, -1}
NPS_0_014_002	2.1.9 Charge Printing 충전할 종이가 0 보다	CD(chargeInk, chargePaper) : {-1, 50}

	클 때	
NPS_0_015_000	2.1.10 Print Printing	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 0}
NPS_0_015_001	2.1.10 Print Printing	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 현재시간}

2.2 Test items

<Table 2 : Test Case Identification>

Identifier	Input Specification	Output Specification
NPS_0_000_000	OD(currentInput) : {1} CSD : {0} CKD : {0}	Call printCal
NPS_0_000_001	OD(currentInput) : {3} CSD : {0} CKD : {0}	Call deleteCal
NPS_0_000_002	OD(currentInput) : {4} CSD : {0} CKD : {0}	Call registerCal
NPS_0_000_003	OD(currentInput) : {2} CSD : {0} CKD : {0}	Call chargeCal
NPS_0_000_004	OD(currentInput) : {} CSD : {1} CKD : {0}	Call stopCal
NPS_0_000_005	OD(currentInput) : {} CSD : {0} CKD : {1}	Call checkCal
NPS_0_001_000	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}	CDlist.txt CDcontent.txt CDpage.txt
NPS_0_001_001	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test2.txt}	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_002	CECD(ink, paper, user, userNum) :	CDlist.txt

	{0,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}	CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_003	CECD(ink, paper, user, userNum) : {3000, 0,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_004	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411269,test.txt}	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_005	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt} waitUser : 5	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_002_000	CECD(user, userNum, currentStatus) : {{201411280,201411297,201411304},3,3} OD(regUserID): {201411269}	CDuser.txt
NPS_0_002_001	CECD(user, userNum, currentStatus) : {{201411280, 201411297,201411304},3,1} OD(regUserID): {201411269}	CDuser.txt 업데이트 되지 않음
NPS_0_002_002	CECD(user, userNum ,currentStatus) : { {201411269, 201411278, 201411280, 201411297, 201411304},5,3} OD(regUserID): {201411223}	CDuser.txt 업데이트 되지 않음
NPS_0_002_003	CECD(user, userNum,currentStatus) : {{201411269, 201411297,201411304},3,3} OD(regUserID): {201411269}	CDuser.txt 업데이트 되지 않음
NPS_0_003_000	CECD(user, userNum, currentStatus) : {{201411269,201411297,201411304},3,3} OD(delUserID): {201411269}	CDuser.txt
NPS_0_003_001	CECD(user, userNum, currentStatus) : {{201411269, 201411297,201411304},3,1} OD(delUserID): {201411269}	CDuser.txt 업데이트 되지 않음

NPS_0_003_002	CECD(user, userNum, currentStatus) : {{201411280, 201411297,201411304},3,1} OD(delUserID): {201411269}	CDuser.txt 업데이트 되지 않음
NPS_0_004_000	CECD(ink,paper, currentStatus) : {2000, 50, 3} OD(chargeInk,chargePaper) : {500,00}	CDcharge.txt CDstatus.txt
NPS_0_004_001	CECD(ink,paper, currentStatus) : {2000,50,1} OD(chargeInk,chargePaper) : {500,00}	CDcharge.txt CDstatus.txt 업데이트 되지 않음
NPS_0_004_002	CECD(ink,paper, currentStatus) : {2000, 50, 3} OD(chargeInk,chargePaper) : {1000,00}	CDcharge.txt CDstatus.txt 업데이트 되지 않음
NPS_0_004_003	CECD(ink,paper, currentStatus) : {2000,50,3} OD(chargeInk,chargePaper) : {00,30}	CDcharge.txt CDstatus.txt 업데이트 되지 않음
NPS_0_004_004	CECD(ink,paper, currentStatus) : {2000,50,1} OD(chargeInk,chargePaper) : {00,30}	CDcharge.txt CDstatus.txt 업데이트 되지 않음
NPS_0_004_005	CECD(ink,paper, currentStatus) : {2000,50,3} OD(chargeInk,chargePaper) : {00,80}	CDcharge.txt CDstatus.txt 업데이트 되지 않음
NPS_0_005_000	CSD : {1}	CDStatus.txt
NPS_0_006_000	CKD : {1}	CDStatus.txt
NPS_0_007_000	CD(mode, checkStatus, checkTime) : {3, 1, 현재시간}	Call displayController
NPS_0_007_001	CD(mode, checkStatus, checkTime) : {3,0, 현재시간}	Call wait
NPS_0_007_002	CD(mode, checkStatus, checkTime) : {0,0,현재시간}	Call print
NPS_0_007_003	CD(mode, checkStatus, checkTime) : {4,0,현재시간}	Call displayController
NPS_0_008_000	CD(paper, ink) : (3000, 10)	Current paper : 3000 Current ink : 10
NPS_0_009_000	CD(cdstatus, cdlist, cdpage, cdcontent)	CDstatus.txt CDlist.txt CDpage.txt CDcontent.txt

NPS_0_010_000	CD(mode) : {0}	Call printPrinting
NPS_0_010_001	CD(mode) : {1}	Call chargePrinting
NPS_0_010_002	CD(mode) : {2}	Call warningPrinting
NPS_0_010_003	CD(mode) : {4}	Call checkPrinting
NPS_0_010_004	CD(mode) : {5}	Call stopPrinting
NPS_0_011_000	CD(paper,ink) : {50, 2500}	Current paper : 50 Current ink : 2500
NPS_0_012_000	CD(paper,ink,mode,calNum) : {50, 2500,2,3}	Current paper : 50 Current ink : 2500 EXCESS ERROR - PRINT LIST
NPS_0_013_000	CD(checkStatus, checkTime) : {1,20151111025300}	user : 등록된 사용자
NPS_0_014_000	CD(chargeInk, chargePaper) : {300, -1}	Current paper : 300 Current ink : -1
NPS_0_014_001	CD(chargeInk, chargePaper) : {-1, 50}	Current paper : -1 Current ink : 50
NPS_0_015_000	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 0}	Paper : 2500 Ink : 50 currentPage , page
NPS_0_015_001	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 현재시간}	Paper : 2500 Ink : 50 FILE PRINTING STOPPED

2.3 Input specifications

2.4 Output specifications

3 Environmental needs

네트워크 프린터 시스템(NPS : Network Printer System)의 Unit Test를 위한 환경적 요구사항은 다음과 같다.

(1) Hardware & Platform

GCC compiler/linker

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

Cygwin

4 Unit test summary report

4.1 Test summary report identifier

Test case Identifier	Result
NPS_0_000_000	Passed
NPS_0_000_001	Passed
NPS_0_000_002	Passed
NPS_0_000_003	Passed
NPS_0_000_004	Passed
NPS_0_000_005	Passed
NPS_0_001_000	Passed
NPS_0_001_001	Passed
NPS_0_001_002	Passed
NPS_0_001_003	Passed
NPS_0_001_004	Passed
NPS_0_001_005	Passed
NPS_0_001_006	Passed
NPS_0_002_000	Passed
NPS_0_002_001	Passed
NPS_0_002_002	Passed
NPS_0_002_003	Passed
NPS_0_003_000	Passed
NPS_0_003_001	Passed
NPS_0_003_002	Passed
NPS_0_004_000	Passed
NPS_0_004_001	Passed
NPS_0_004_002	Passed
NPS_0_004_003	Passed
NPS_0_004_004	Passed
NPS_0_004_005	Passed
NPS_0_005_000	Passed
NPS_0_006_000	Passed
NPS_0_007_001	Passed
NPS_0_007_002	Passed
NPS_0_007_003	Passed

NPS_0_008_000	Passed
NPS_0_009_000	Passed
NPS_0_010_000	Passed
NPS_0_010_001	Passed
NPS_0_010_002	Passed
NPS_0_010_003	Passed
NPS_0_010_004	Passed
NPS_0_011_000	Passed
NPS_0_012_000	Passed
NPS_0_013_000	Passed
NPS_0_014_000	Passed
NPS_0_014_001	Passed
NPS_0_015_000	Passed
NPS_0_015_001	Passed

4.2 Evaluation

Total test case : 45개

Passed : 45개

Failed : 0개