

System Testing Plan for PTS System

- Test Plan
- Test Design Specification
- Test Cases Specification

Project Team

Team 2

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1 Introduction

1.1 Objectives

본 문서는 2014년 2학기 Software Engineering (2014SE) 수업에서 T2가 개발한 Public Transportation System (PTS)의 System Testing Plan (STP)을 위한 문서이다.

1.2 Background

PTS의 System Testing (ST)을 위하여 PTS의 Software Requirement Specification (SRS)에 대한 이해가 필요하다. SRS는 2014SE의 수업 내용인 Structural Analysis 기법으로 작성되었다.

1.3 Scope

본 STP는 PTS가 가진 Terminal과 Account System을 이용하여 수행 할 수 있는 행위에 대한 ST를 명세하고 있다.

1.4 Project plan

완성된 PTS의 Software (SW)를 ST하기 위한 본 계획서를 작성한다.

완성된 PTS의 SW를 Unit Testing (UT) 하기 위한 Unit Testing Plan (UTP) 를 작성한다.

작성된 UTP에 기반하여 UT 를 수행한다.

본 계획서에 작성된 내용에 기반하여 ST 를 수행한다.

ST에 대한 결과를 개발팀에 통보한다.

1.5 Configuration management plan

SASD를 이용하여 SW를 구현한 후, System Testing (ST) / Unit Testing (UT) 를 수행한다.

ST / UT 의 결과를 대상 SW에 반영한다.

SRS 수정 후 반영된 SW를 대상으로 2차 ST / UT를 수행한다.

1.6 References

2014.PTS.SRS-버전

2014.PTS.SRA-버전

2 Test items

2.1 Software requirements specification

2.1.1 Product functions

(1) 단말기

화면에 시간정보를 표시한다.

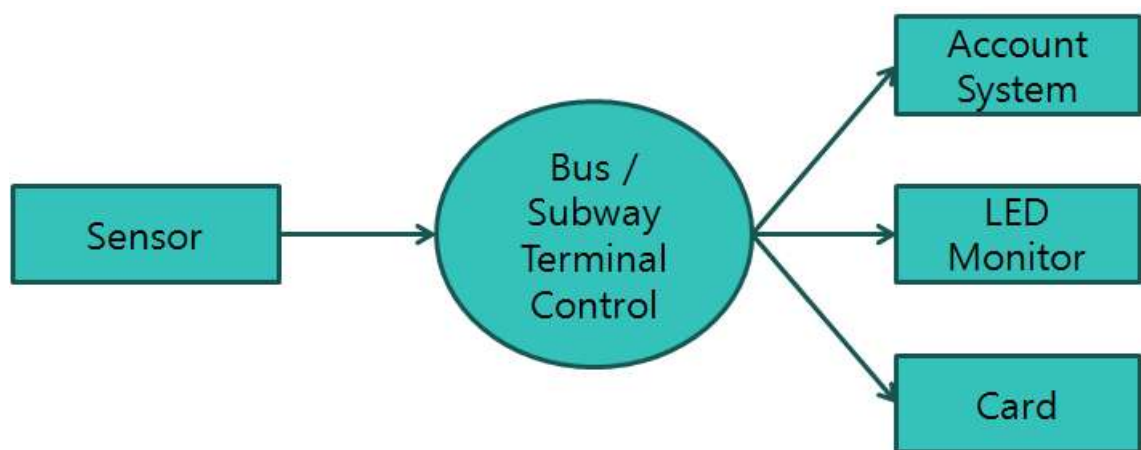
카드 입력이 있으면 탑승 여부와 잔액을 보여준다.

(2) 정산기

정산 시간이 되면 정산을 하고 정산 결과를 보여준다.

2.2 Software requirements analysis

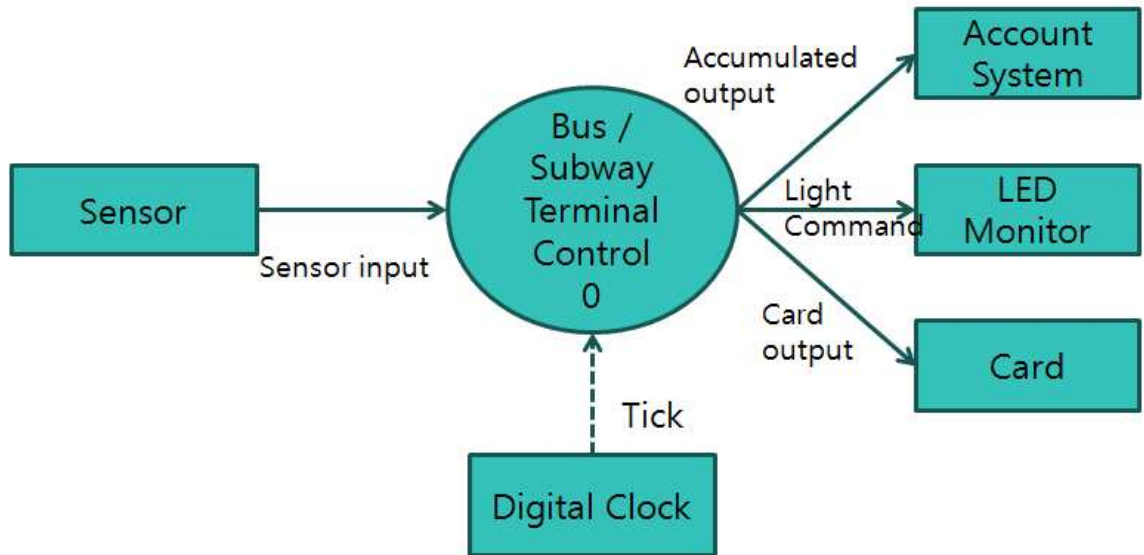
2.2.1 Basic System Context Diagram



2.2.2 Event List

| Input/Output Event | Description |
|--------------------|--|
| Sensor Input | 카드가 태그 되었을 때, 카드의 정보를 컨트롤러로 전달해준다. |
| Accumulated Output | 계산된 카드정보를 정산 시스템으로 전달해준다. |
| Light | LED Monitor 로 어떤 화면을 보여줄 것 인가에 대한 명령을 전달해준다. |
| Card Output | 탑승이 되고나서 잔액 등 바뀐 카드 정보를 다시 카드에 넣어준다. |

2.2.3 System Context Diagram



3 Features to be tested – 테스트 해야 할 것

가능한 태그의 조합을 입력하여 알맞은 요금이 부과되고, 그것이 정확하게 출력되는 지 확인한다.

태그의 조합에 따라 요구되는 최소 보유 잔액을 검사하여, 탑승여부가 제대로 판단되는 지 확인한다.

정산이 정산시간에 정확히 이루어 지고 올바른 결과가 출력되는 지 확인한다.

4 Features not to be tested – 테스트 하지 않아도 될 것

가능한 태그의 조합 중 이미 테스트 한 경우와 결과값이 도출되는 과정이 중복되는 경우는 생략할 수 있다.

5 Approach

요구사항에 정의되어 있는 기능들을 확인하기 위한 시나리오를 작성한다. 작성한 시나리오에 기반하여 Testing Design 및 Test Case를 작성하여 Testing을 수행한다.

6 Item pass/fail criteria

<System Test Design Identification> 참조

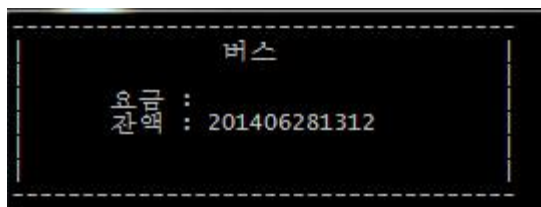
7 System test design specification

7.1 Test design specification identifier

PTS_STC_NUMBER

7.2 Features to be tested

7.2.1 화면표시(PTS_STC_000)



7.2.2 승/하차 태그(PTS_STC_100)

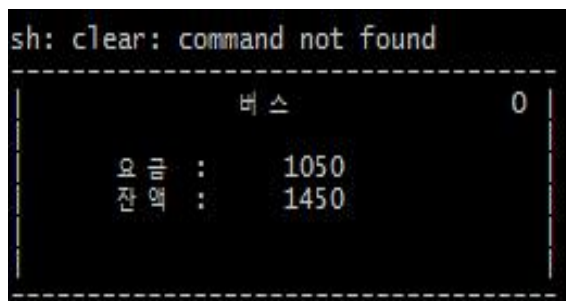
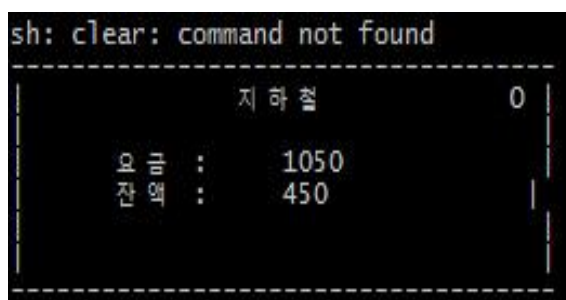
승/하차 태그는 키보드 입력값으로 구분한다.

버스터미널에서는 q가 탑승이고 a가 하차태그이다. 지하철 터미널의 경우는 q-동대문역사공원역 탑승 / a-동대문역사공원역 하차 / w-건대역 탑승 / s-건대역 하차 / e-강남역 탑승 / d-강남역 하차 / r-신림역 탑승 / f-신림역 하차 / t-합정역 탑승 / g-합정역 하차 태그이다.

7.2.3 요금 부과(PTS_STC_200)

승/하차 태그시 요금이 계산되어 부과된다.

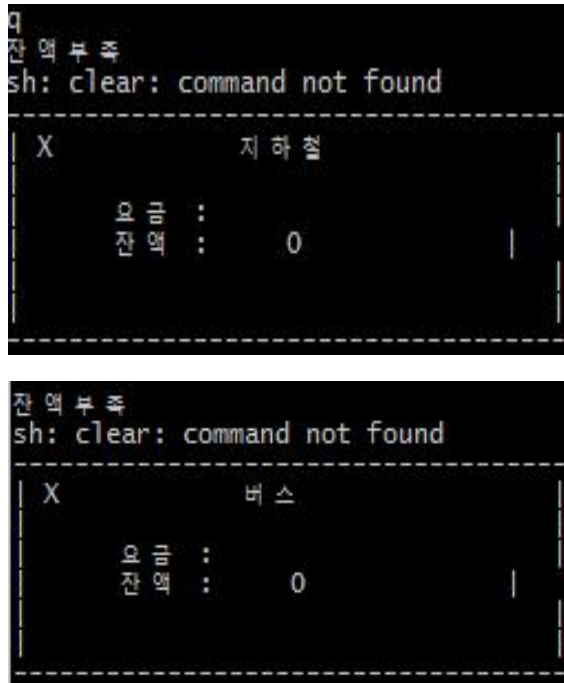
화면표시



7.2.4 최소 보유 잔액 검사(PTS_STC_300)

잔액이 최소 보유 잔액보다 적을 경우 탑승이 불가능 하다.

화면표시



7.2.5 하차 전 정산시간이 지난 경우 요금부과(PTS_STC_300)

승차 태그 후 하차 태그를 하지 않은 상태에서 정산시간이 지나면 다음 태그 시 미정산 요금으로 처리된다.

7.3 Approach refinements

PTS는 SRS의 Specific Requirements에 나온 모든 동작을 명세 된 내용과 동일하게 수행 해야 한다. 각 시나리오들이 정해진 순서의 입력을 받았을 때, SRS에 명세 된 동작 을 수행해야 한다.

7.4 Test identification

| Identifirer | Feature | Valid/Invalid |
|-------------|---------|---|
| PTS_STC_000 | 화면표시 | 프로그램 시작과 동시에 화면이 표시된다. 화면에는 수단, 현재시간이 표시되어야 한다. 현재시간은 1초에 한 번씩 업데이트 된다. |
| PTS_STC_100 | 승/하차 태그 | 교통수단과 승/하차 위치에 따라 정해진 키보드 값을 입력하면 승/하차가 이루어진다. |

| | | |
|--------------------|-------------|---|
| PTS_STC_200 | 요금부과 | 승/하차 태그 시 상황에 맞는 요금이 계산되어 부과되고 화면에 출력된다. (화면에는 수단, 요금, 잔액, 승/하차 가능 여부가 올바르게 표시되어야 한다.) |
| PTS_STC_300 | 최소 보유 잔액 검사 | 승차 시 잔액이 최소 보유 잔액 이상인지 확인 (잔액이 더 적은 경우 '잔액부족'이라는 말과 함께 X와 잔액이 표시된다.) |
| PTS_STC_400 | 정산 이후 요금 부과 | 하차 전 정산시간이 지난 경우 다음 태그 시 미정산 요금이 올바르게 부과되는지 확인 |
| PTS_STC_500 | 정산 | 하루가 지나면 정산이 진행된다. 하루 간 누적된 결제기록이 정산 절차를 거쳐 버스와 지하철 회사로 올바르게 나뉘는지 확인(정산이 완료되면 화면에 전체정산금액, BUS정산금액, METRO정산금액이 출력된다.) |

7.5 Feature pass/fail criteria

<Test identification> 참조

8 System test case specification

8.1 Test case specification identifier

PTS_STC_ NUMBER_ NUMBER

8.2 Test items

| Test Case Identifier | Input specification | Output specification |
|------------------------|--------------------------------------|---------------------------------|
| PTS_STC_000_000 | <프로그램 실행> | |
| PTS_STC_100_000 | (BT)j, (MT)k | 유효하지 않은 입력값 |
| PTS_STC_200_000 | (환승) (BT)q, 10sec (BT)a, 20sec (BT)q | (BT) 0원, 잔액 (BT) 1050원, 잔액 |
| PTS_STC_200_001 | (환승)(BT)q, 10sec(BT)a, 20sec (MT)q | (BT) 0원, 잔액 (MT) 1050원, 잔액 |
| PTS_STC_200_002 | (환승) (BT)q, 40sec (BT)a, 20sec (BT)q | (BT) 100원, 잔액 (BT) 1050원, 잔액 |
| PTS_STC_200_003 | (환승) (BT)q, 40sec (BT)a, 10sec (MT)q | (BT) 0원, 잔액 (MT) 0원, 잔액 |

| | | |
|------------------------|--------------------------------------|----------------------------------|
| PTS_STC_200_004 | (환승) (BT)q, 40sec (BT)a, 10sec (MT)q | (BT) 100원, 잔액 (MT) 0원, 잔액 |
| PTS_STC_200_005 | (BT)q, 10sec (BT)q, 10sec (BT)q | (BT) 1050원, 잔액 (BT) 1050원, 잔액 |
| PTS_STC_200_006 | (BT)q, 10sec (BT)q, 10sec (MT)q | (BT) 1050원, 잔액 (MT) 1050원, 잔액 |
| PTS_STC_200_007 | (BT)q, 10sec (BT)q, 10sec (BT)a | (BT) 1050원, 잔액 (BT) 0원, 잔액 |
| PTS_STC_200_008 | (BT)q, 10sec (MT)q, 10sec (BT)q | (MT) 1050원, 잔액 (BT) 1250원, 잔액 |
| PTS_STC_200_009 | (BT)q, 10sec (MT)q, 10sec (MT)q | (MT) 1050원, 잔액 (MT) 1250원, 잔액 |
| PTS_STC_200_010 | (BT)q, 10sec (MT)q, 10sec (MT)a | (MT) 1050원, 잔액 (MT) 0원, 잔액 |
| PTS_STC_200_011 | (MT)q, 10sec (BT)q, 10sec (BT)q | (BT) 1250원, 잔액 (BT) 1050원, 잔액 |
| PTS_STC_200_012 | (MT)q, 10sec (BT)q, 10sec (BT)a | (BT) 1250원, 잔액 (BT) 0원, 잔액 |
| PTS_STC_200_013 | (MT)q, 10sec (BT)q, 10sec (MT)q | (BT) 1250원, 잔액 (MT) 1050원, 잔액 |
| PTS_STC_200_014 | (MT)q, 10sec (MT)q, 10sec (BT)q | (MT) 1250원, 잔액 (BT) 1250원, 잔액 |
| PTS_STC_200_015 | (MT)q, 10sec (MT)q, 10sec (MT)q | (MT) 1250원, 잔액 (MT) 1250원, 잔액 |
| PTS_STC_200_016 | (MT)q, 10sec (MT)q, 10sec (MT)s | (MT) 1250원, 잔액 (MT) 300원, 잔액 |
| PTS_STC_200_017 | (MT)q, 10sec (MT)q, 10sec (MT)f | (MT) 1250원, 잔액 (MT) 600원, 잔액 |
| PTS_STC_200_018 | (환승)(MT)q, 10sec (MT)s, 10sec(BT)q | (MT) 300원, 잔액 (BT) 0원, 잔액 |
| PTS_STC_200_019 | (환승)(MT)q, 10sec (MT)s, 10sec(MT)e | (MT) 300원, 잔액 (MT) 1050원, 잔액 |
| PTS_STC_200_020 | (환승)(MT)q, 10sec (MT)s, 20sec(BT)q | (MT) 300원, 잔액 (BT) 1050원, 잔액 |
| PTS_STC_200_021 | (환승)(MT)q, 10sec (MT)f, 10sec(BT)q | (MT) 600원, 잔액 (BT) 0원, 잔액 |

| | | |
|-----------------|------------------------------------|---------------------------------|
| PTS_STC_200_022 | (환승)(MT)q, 10sec (MT)f, 10sec(MT)q | (MT) 600원, 잔액 (MT) 1050원, 잔액 |
| PTS_STC_200_023 | (환승)(MT)q, 10sec (MT)f, 20sec(BT)q | (MT) 600원, 잔액 (BT) 1050원, 잔액 |
| PTS_STC_200_024 | (환승)(MT)q, 10sec (MT)f, 20sec(MT)q | (MT) 600원, 잔액 (MT) 1050원, 잔액 |
| PTS_STC_300_000 | (BT)q, (BT)q | 1050원 필요 (BT) X, 1050원 |
| PTS_STC_300_001 | (BT)q, (BT)q | 1050원 필요 (BT) O, 0원 |
| PTS_STC_300_002 | (BT)q, (BT)q | 1050원 필요 (BT) O, 150원 |
| PTS_STC_300_003 | (BT)q, (MT)q | 1250원 필요 (MT) X, 1200원 |
| PTS_STC_300_004 | (BT)q, (MT)q | 1250원 필요 (MT) O, 0원 |
| PTS_STC_300_005 | (BT)q, (MT)q | 1250원 필요 (MT) O, 50원 |
| PTS_STC_300_006 | (BT)q, (BT)a, 10sec (MT)q | 600원 필요 (MT) X, 500원 |
| PTS_STC_300_007 | (BT)q, (BT)a, 10sec (MT)q | 600원 필요 (MT) O, 0원 |
| PTS_STC_300_008 | (BT)q, (BT)a, 10sec (MT)q | 600원 필요 (MT) O, 100원 |
| PTS_STC_300_009 | (BT)q, (BT)a, 20sec (MT)q | 1250원 필요 (MT)X, 1200원 |
| PTS_STC_300_010 | (BT)q, (BT)a, 20sec (MT)q | 1250원 필요 (MT)O, 0원 |
| PTS_STC_300_011 | (BT)q, (BT)a, 20sec (MT)q | 1250원 필요 (MT)O, 50원 |
| PTS_STC_300_012 | (MT)q, (MT)a, 10sec (BT)q | 700원 필요 (BT)X, 600원 |
| PTS_STC_300_013 | (MT)q, (MT)a, 10sec (BT)q | 700원 필요 (BT)O, 0원 |
| PTS_STC_300_014 | (MT)q, (MT)a, 10sec (BT)q | 700원 필요 (BT)O, 100원 |
| PTS_STC_300_015 | (MT)q, (MT)a, 20sec (BT)q | 1050원 필요 (BT)X, 1000원 |
| PTS_STC_300_016 | (MT)q, (MT)a, 20sec (BT)q | 1050원 필요 |

| | | |
|-----------------|---|--------------------------|
| | | (BT)O, 0원 |
| PTS_STC_300_017 | (MT)q, (MT)a, 20sec (BT)q | 1050원 필요 (BT)O, 50원 |
| PTS_STC_300_018 | (MT)q, (BT)q | 1050원 필요 (BT)X, 1000원 |
| PTS_STC_300_019 | (MT)q, (BT)q | 1050원 필요 (BT)O, 0원 |
| PTS_STC_300_020 | (MT)q, (BT)q | 1050원 필요 (BT)O, 50원 |
| PTS_STC_400_000 | (BT)q, (정산 후)(BT)a | 변화없음 |
| PTS_STC_400_001 | (BT)q, (정산 후)(BT)q | (BT) 1750원, 잔액 |
| PTS_STC_400_002 | (BT)q, (정산 후)(MT)q | (MT) 1750원, 잔액 |
| PTS_STC_400_003 | (MT)q, (정산 후)(MT)a | 변화없음 |
| PTS_STC_400_004 | (MT)q, (정산 후)(MT)q | (MT) 1650원, 잔액 |
| PTS_STC_400_005 | (MT)q, (정산 후)(BT)q | (BT) 1650원, 잔액 |
| PTS_STC_500_000 | | 0, 0, 0 |
| PTS_STC_500_001 | (BT)q, (BT)a, (BT)q, (BT)a | 2100, 2100, 0 |
| PTS_STC_500_002 | (BT)q, (BT)q, (BT)a | 2100, 2100, 0 |
| PTS_STC_500_003 | (BT)q, (BT)a, (BT)q | 2100, 2100, 0 |
| PTS_STC_500_004 | (MT)q, (MT)a, (MT)q, (MT)a | 2100, 0, 2100 |
| PTS_STC_500_005 | (MT)q, (MT)q, (MT)a | 2300, 0, 2300 |
| PTS_STC_500_006 | (MT)q, (MT)a, (MT)q | 2100, 0, 2100 |
| PTS_STC_500_007 | (BT)q, (BT)a, (MT)q, (MT)a | 2100, 1050, 1050 |
| PTS_STC_500_008 | (MT)q, (MT)a, (BT)q, (BT)a | 2100, 1050, 1050 |
| PTS_STC_500_009 | (BT)q, (BT)a, (환승)(MT)q, (MT)a | 2100, 1050, 1050 |
| PTS_STC_500_010 | (BT)q, (BT)a, (MT)q, (MT)a, (환승)(BT)q, 10sec(BT)a | 2100, 2100, 0 |
| PTS_STC_500_011 | (BT)q, (BT)a, (환승)(MT)q, (MT)a | 2200, 2200, 0 |
| PTS_STC_500_012 | (BT)q, (BT)a, (환승)(MT)q, (MT)s | 2100, 1050, 1050 |
| PTS_STC_500_013 | (BT)q, (BT)a, (환승)(MT)q, (MT)a, (BT)q, (BT)a | 2400, 1641, 759 |
| PTS_STC_500_014 | (BT)q, (BT)a, (환승)(MT)q, (MT)a, (MT)q, (MT)a | 2400, 591, 1809 |
| PTS_STC_500_015 | (MT)q, (MT)a, (환승)(BT)q, 10sec(BT)a | |
| PTS_STC_500_016 | (MT)q, (MT)a, (환승)(BT)q, 40sec(BT)a | |
| PTS_STC_500_017 | (MT)q, (MT)a, (환승)(BT)q, 10sec(BT)a, (BT)q, (BT)a | |
| PTS_STC_500_018 | (MT)q, (MT)a, (환승)(BT)q, 40sec(BT)a, (MT)q, (MT)a | |

| | | |
|-----------------|---|-------------|
| PTS_STC_500_019 | (BT)q, (BT)a, (환승)(MT)q, (MT)a, (BT)q, (환승)(MT)q, 10sec(BT)a | |
| PTS_STC_500_020 | (BT)q, (BT)a, (환승)(MT)q, (MT)a, (BT)q, (환승)(MT)q, 40sec(BT)a | |
| PTS_STC_500_021 | (MT)q, (MT)a, (환승)(BT)q, 10sec(BT)a, (환승)(MT)q, (MT)a | |
| PTS_STC_500_022 | (MT)q, (MT)a, (환승)(BT)q, 10sec(BT)a, (환승)(MT)q, (MT)s | |
| PTS_STC_500_023 | (BT)q, (BT)a, (환승)(MT)q, (MT)s, (BT)q, (환승)(MT)q, 10sec(BT)a | |
| PTS_STC_500_024 | (BT)q, (BT)a, (환승)(MT)q, (MT)s, (BT)q, (환승)(MT)q, 40sec(BT)a | |
| PTS_STC_500_025 | (MT)q, (MT)a, (환승)(BT)q, 40sec(BT)a, (환승)(MT)q, (MT)a | |
| PTS_STC_500_026 | (MT)q, (MT)a, (환승)(BT)q, 40sec(BT)a, (환승)(MT)q, (MT)s | |
| PTS_STC_500_027 | (BT)q, (MT)q, (MT)a | |
| PTS_STC_500_028 | (BT)q, (BT)q | |
| PTS_STC_500_029 | (MT)q, (MT)a, (환승)(BT)q, (MT)q, (MT)a | |
| PTS_STC_500_030 | (MT)q, (MT)a, (환승)(BT)q, (BT)q, (BT)a | |
| PTS_STC_500_031 | (MT)q, (MT)q, (MT)a | 2300,0,2300 |
| PTS_STC_500_032 | (MT)q, (BT)q, (BT)a | 2100,2100,0 |
| PTS_STC_500_033 | (BT)q, (BT)a, (환승)(MT)q, (MT)q, (MT)a | |
| PTS_STC_500_034 | (BT)q, (BT)a, (환승)(MT)q, (BT)q, (BT)a | |
| PTS_STC_500_035 | (BT)q, (BT)a, (환승)(MT)q, (MT)a, (BT)q | |
| PTS_STC_500_036 | (MT)q, (MT)a, (환승)(BT)q, 10sec(BT)a, (BT)q | |
| PTS_STC_500_037 | (BT)q, (BT)a, (환승)(MT)q, (MT)s, (BT)q | |
| PTS_STC_500_038 | (MT)q, (MT)a, (환승)(BT)q, 40sec(BT)a, (BT)q | |
| PTS_STC_500_039 | (BT)q, (BT)a, (환승)(MT)q, (MT)a, (MT)q | |
| PTS_STC_500_040 | (MT)q, (MT)a, (환승)(BT)q, 10sec(BT)a, (MT)q | |
| PTS_STC_500_041 | (BT)q, (BT)a, (환승)(MT)q, (MT)s, (MT)q | |
| PTS_STC_500_042 | (MT)q, (MT)a, (환승)(BT)q, 40sec(BT)a, (MT)q | |

| Test case identifier | Input specification | Output specification |
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| T2.PTS.STC.000.000 | (CardData) M,999050,1_3 (TerminalData) B,1,1050,0_3 | (Terminal.txt) YYYYMMDDHHMM,B,1,988900,0_8 (Card.txt)YYYYMMDDHHMM,B,0,988900,0_9 |
| T2.PTS.STC.000.001 | (CardData)B,0,988900,0_9 (TerminalData) B,0,0,0_9 | (Terminal.txt) YYYYMMDDHHMM,M,1,1050,1_7 (Card.txt) YYYYMMDDHHMM,M,1,987850,1_7 |
| T2.PTS.STC.000.002 | (CardData) 201503060008,M,1,736400,1_1 201503060016,M,0,736200,3_1 201503060032,B,1,736200,0_1 (TerminalData) 201503060008,M,1,1050,1_1 201503060016,M,0,200,3_1 201503060032,B,1,0,0_1 | (Terminal) 현재요금 : 1050, 잔액 : 98950 (Terminal.txt) 201412010808,B,1,988900,0_8 (Card.txt)201412010808,B,0,988900,0_9 |
| T2.PTS.STC.000.003 | (CardData) 201503070056,M,1,733050,1_3 201503070104,M,0,733050,1_4 201503070120,B,1,733050,0_2 (TerminalData) 201503070056,M,1,1050,1_3 201503070104,M,0,0,1_4 | (Terminal.txt)201503070616,B,0,100,0_3 (Card.txt)201503070616,B,0,732950,0_3 |

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| | 201503070120,B,1,0,0_2 | |
| T2.PTS.STC.000.004 | (CardData) 201503071304,M,1,731900,1_5 201503071312,M,0,731900,1_6 201503071320,B,1,731900,0_4 (TerminalData) 201503071304,M,1,1050,1_5 201503071312,M,0,0,1_6 201503071320,B,1,0,0_4 | (Terminal.txt)201503072248,B,0,200,0_5 (Card.txt)201503072248,B,0,731700,0_5 |
| T2.PTS.STC.000.005 | (CardData) 201503090952,M,1,729300,1_1 201503091008,M,0,729300,1_2 201503091008,B,1,729300,0_1 (TerminalData) 201503090952,M,1,1050,1_1 201503091008,M,0,0,1_2 201503091008,B,1,0,0_1 | (Terminal.txt) 201503092024,B,0,200,0_2 (Card.txt) 201503092024,B,0,729100,0_2 |
| T2.PTS.STC.000.006 | (CardData) 201503081032,M,1,1050,1_1 201503081048,M,0,0,1_2 201503081056,B,1,0,0_1 (TerminalData) | (Terminal.txt)201503082320,B,0,300,0_2 (Card.txt)201503082320,B,0,730350,0_2 |

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| | 201503081032,M,1,730650,1_1 201503081048,M,0,730650,1_2 201503081056,B,1,730650,0_1 | |
| T2.PTS.STC.000.007 | (CardData) 201504060004,M,1,550750,1_5 201504060004,M,0,550750,1_6 201504060008,B,1,550750,0_2 (TerminalData) 201504060004,M,1,1050,1_5 201504060004,M,0,0,1_6 201504060008,B,1,0,0_2 | (Terminal.txt) 201504062344,B,0,500,0_3 (Card.txt) 201504062344,B,0,550250,0_3 |
| T2.PTS.STC.000.008 | (CardData) 201504170016,M,1,97200,1_3 201504170016,M,0,97200,1_4 201504170016,B,1,97200,0_1 (TerminalData) 201504170016,M,1,1050,1_3 201504170016,M,0,0,1_4 201504170016,B,1,0,0_1 | (Termina.txtl) 201504180024,B,1,1750,0_1 (Card.txt) 201504180024,B,1,95450,0_1 |
| T2.PTS.STC.000.009 | (CardData) 201504180032,M,0,95450,1_2 | (Terminal.txt) 201504190456,B,1,1750,0_1 |

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| | <p>201504180032,M,1,94400,1_3 201504180032,M,0,94400,1_4 (TerminalData) 201504180032,M,1,1050,1_3 201504180032,M,0,0,1_4 201504180032,B,1,0,0_3</p> | <p>(Card.txt) 201504180032,B,1,94400,0_3</p> |
| <p>T2.PTS.STC.000.010</p> | <p>(CardData) B,1,715050,0_5 B,0,715050,0_6 M,1,715050,5_1 (TerminalData) B,1,1050,0_5 B,0,0,0_6 M,1,0,5_1</p> | <p>(Card.txt) YYYYMMDDHHMM,M,0,715050,5_2 (Termianl.txt) YYYYMMDDHHMM,M,0,0,5_2</p> |
| <p>T2.PTS.STC.000.011</p> | <p>(CardData) B,1,712950,0_11 B,0,712950,0_12 M,1,712950,5_3 (TerminalData) B,1,1050,0_11 B,0,0,0_12</p> | <p>(Card.txt) YYYYMMDDHHMM,M,0,712650,4_1 (Termianl.txt) YYYYMMDDHHMM,M,0,300,4_1</p> |

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| | M,1,0,5_3 | |
| T2.PTS.STC.000.012 | (CardData) B,1,711600,0_1 B,0,711600,0_2 M,1,711600,5_1 (TerminalData) B,1,1050,0_1 B,0,0,0_2 M,1,0,5_1 | (Card.txt) YYYYMMDDHHMM,M,0,711000,3_1 (Terminal.txt) YYYYMMDDHHMM,M,0,600,3_1 |
| T2.PTS.STC.000.013 | (CardData) B,1,709950,0_3 B,0,709950,0_4 M,1,709950,5_2 (TerminalData) B,1,1050,0_3 B,0,0,0_4 M,1,0,5_2 | (Card.txt) YYYYMMDDHHMM,M,0,709350,2_1 (Terminal.txt) YYYYMMDDHHMM,M,0,600,2_1 |
| T2.PTS.STC.000.014 | (CardData) B,1,704550,0_13 B,0,704550,0_14 M,1,704550,5_4 | (Card.txt) YYYYMMDDHHMM,M,0,704250,1_1 (Terminal.txt) YYYYMMDDHHMM,M,0,300,1_1 |

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| | (TerminalData) B,1,1050,0_13 B,0,0,0_14 M,1,0,5_4 | |
| T2.PTS.STC.000.015 | (CardData) B,1,701850,0_5 B,0,701850,0_6 M,1,701850,4_1 (TerminalData) B,1,1050,0_5 B,0,0,0_6 M,1,0,4_1 | (Card.txt) YYYYMMDDHHMM,M,0,701550,5_2 (Terminal.txt) YYYYMMDDHHMM,M,0,300,5_2 |
| T2.PTS.STC.000.016 | (CardData) B,1,700500,0_7 B,0,700500,0_8 M,1,700500,4_2 (TerminalData) B,1,1050,0_7 B,0,0,0_8 M,1,0,4_2 | (Card.txt) YYYYMMDDHHMM,M,0,700500,4_3 (Terminal.txt) YYYYMMDDHHMM,M,0,0,4_3 |
| T2.PTS.STC.000.017 | (CardData) | (Card.txt) |

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| | B,1,699450,0_9 B,0,699450,0_10 M,1,699450,4_4 (TerminalData) B,1,1050,0_9 B,0,0,0_10 M,1,0,4_4 | YYYYMMDDHHMM,M,0,699150,3_1 (Terminal.txt) YYYYMMDDHHMM,M,0,300,3_1 |
| T2.PTS.STC.000.018 | (CardData) B,1,698100,0_11 B,0,698100,0_12 M,1,698100,4_5 (TerminalData) B,1,1050,0_11 B,0,0,0_12 M,1,0,4_5 | (Card.txt) YYYYMMDDHHMM,M,0,697500,2_1 (Termianl.txt) YYYYMMDDHHMM,M,0,600,2_1 |
| T2.PTS.STC.000.019 | (CardData) B,1,696450,0_1 B,0,696450,0_2 M,1,696450,4_1 (TerminalData) B,1,1050,0_1 | (Card) YYYYMMDDHHMM,M,0,695850,1_1 (Terminal) YYYYMMDDHHMM,M,0,600,1_1 |

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| | B,0,0,0_2 M,1,0,4_1 | |
| T2.PTS.STC.000.020 | (CardData) B,1,694800,0_3 B,0,694800,0_4 M,1,694800,3_1 (TerminalData) B,1,1050,0_3 B,0,0,0_4 M,1,0,3_1 | (Card) YYYYMMDDHHMM,M,0,694200,5_1 (Terminal) YYYYMMDDHHMM,M,0,600,5_1 |
| T2.PTS.STC.000.021 | (CardData) B,1,691800,0_5 B,0,691800,0_6 M,1,691800,3_2 (TerminalData) B,1,1050,0_5 B,0,0,0_6 M,1,0,3_2 | (Card) YYYYMMDDHHMM,M,0,691500,4_1 (Terminal) YYYYMMDDHHMM,M,0,300,4_1 |
| T2.PTS.STC.000.022 | (CardData) B,1,690450,0_7 B,0,690450,0_8 | (Card) YYYYMMDDHHMM,M,0,690450,3_4 (Terminal) |

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| | M,1,690450,3_3 (TerminalData) B,1,1050,0_7 B,0,0,0_8 M,1,0,3_3 | YYYYMMDDHHMM,M,0,0,3_4 |
| T2.PTS.STC.000.023 | (CardData) B,1,689400,0_9 B,0,689400,0_10 M,1,689400,3_5 (TerminalData) B,1,1050,0_9 B,0,0,0_10 M,1,0,3_5 | (Card) YYYYMMDDHHMM,M,0,689100,2_2 (Terminal) YYYYMMDDHHMM,M,0,300,2_2 |
| T2.PTS.STC.000.024 | (CardData) B,1,688050,0_11 B,0,688050,0_12 M,1,688050,3_6 (TerminalData) B,1,1050,0_11 B,0,0,0_12 M,1,0,3_6 | (Card) YYYYMMDDHHMM,M,0,687450,1_1 (Terminal) YYYYMMDDHHMM,M,0,600,1_1 |
| T2.PTS.STC.000.025 | (CardData) | (Card) |

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| | B,1,684300,0_3 B,0,684300,0_4 M,1,684300,2_2 (TerminalData) B,1,1050,0_3 B,0,0,0_4 M,1,0,2_2 | YYYYMMDDHHMM,M,0,683700,5_1 (Terminal) YYYYMMDDHHMM,M,0,600,5_1 |
| T2.PTS.STC.000.026 | (CardData) B,1,682650,0_5 B,0,682650,0_6 M,1,682650,2_3 (TerminalData) B,1,1050,0_5 B,0,0,0_6 M,1,0,2_3 | (Card) YYYYMMDDHHMM,M,0,682050,4_1 (Terminal) YYYYMMDDHHMM,M,0,600,4_1 |
| T2.PTS.STC.000.027 | (CardData) B,1,681000,0_7 B,0,681000,0_8 M,1,681000,2_4 (TerminalData) B,1,1050,0_7 | (Card) YYYYMMDDHHMM,M,0,680700,3_1 (Terminal) YYYYMMDDHHMM,M,0,300,3_1 |

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| | B,0,0,0_8 M,1,0,2_4 | |
| T2.PTS.STC.000.028 | (CardData) B,1,677350,0_3 B,0,677350,0_4 M,1,677350,2_1 (TermianIData) B,1,1050,0_3 B,0,0,0_4 M,1,0,2_1 | (Card) YYYYMMDDHHMM,M,0,677350,2_2 (Terminal) YYYYMMDDHHMM,M,0,0,2_2 |
| T2.PTS.STC.000.029 | (CardData) B,1,676300,0_5 B,0,676300,0_6 M,1,676300,2_3 (TermianIData) B,1,1050,0_5 B,0,0,0_6 M,1,0,2_3 | (Card) YYYYMMDDHHMM,M,0,676000,1_2 (Terminal) YYYYMMDDHHMM,M,0,300,1_2 |
| T2.PTS.STC.000.030 | (CardData) B,1,674950,0_7 B,0,674950,0_8 | (Card) YYYYMMDDHHMM,M,0,674650,5_1 (Terminal) |

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| | M,1,674950,1_3 (TermianlData) B,1,1050,0_7 B,0,0,0_8 M,1,0,1_3 | YYYYMMDDHHMM,M,0,300,5_1 |
| T2.PTS.STC.000.031 | (CardData) B,1,673600,0_1 B,0,673600,0_2 M,1,673600,1_1 (TermianlData) B,1,1050,0_1 B,0,0,0_2 M,1,0,1_1 | (Card) YYYYMMDDHHMM,M,0,673000,4_1 (Terminal) YYYYMMDDHHMM,M,0,600,4_1 |
| T2.PTS.STC.000.032 | (CardData) B,1,671950,0_3 B,0,671950,0_4 M,1,671950,1_2 (TermianlData) B,1,1050,0_3 B,0,0,0_4 M,1,0,1_2 | (Card) YYYYMMDDHHMM,M,0,671350,3_1 (Terminal) YYYYMMDDHHMM,M,0,600,3_1 |

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| <p>T2.PTS.STC.000.033</p> | <p>(CardData) B,1,670300,0_5 B,0,670300,0_6 M,1,670300,1_3 (TermianlData) B,1,1050,0_5 B,0,0,0_6 M,1,0,1_3</p> | <p>(Card) YYYYMMDDHHMM,M,0,669700,3_2 (Terminal) YYYYMMDDHHMM,M,0,600,3_2</p> |
| <p>T2.PTS.STC.000.034</p> | <p>(CardData) B,1,664100,0_9 B,0,664100,0_10 M,1,664100,1_6 (TermianlData) B,1,1050,0_9 B,0,0,0_10 M,1,0,1_6</p> | <p>(Card) YYYYMMDDHHMM,M,0,664100,1_7 (Terminal) YYYYMMDDHHMM,M,0,0,1_7</p> |
| <p>T2.PTS.STC.000.035</p> | <p>(CardData) M,1,657950,1_15 M,0,657950,1_16 B,1,657950,0_14 (TermianlData)</p> | <p>(Card) YYYYMMDDHHMM,M,1,656200,1_17 (Terminal) YYYYMMDDHHMM,M,1,1750,1_17</p> |

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| | <p>M,1,1050,1_15 M,0,0,1_16 B,1,0,0_14</p> | |
| T2.PTS.STC.000.036 | <p>(CardData) B,1,653900,0_17 B,0,653900,0_18 M,1,653900,1_18 (TermianlData) B,1,1050,0_17 B,0,0,0_18 M,1,0,1_18</p> | <p>(Card) YYYYMMDDHHMM,B,1,652250,0_19 (Terminal) YYYYMMDDHHMM,B,1,1650,0_19</p> |
| T2.PTS.STC.000.037 | <p>(CardData) M,1,650150,1_21 (TermianlData) M,1,1050,1_21</p> | <p>(Card) YYYYMMDDHHMM,B,1,648900,0_20 (Terminal) YYYYMMDDHHMM,B,1,1250,0_20</p> |
| T2.PTS.STC.000.038 | <p>(CardData) M,1,637050,1_3 M,0,637050,1_4 M,1,636000,1_5 (TermianlData) M,1,1050,1_3</p> | <p>(Card) YYYYMMDDHHMM,M,0,637050,1_4 (Terminal) YYYYMMDDHHMM,B,1,1250,0_1</p> |

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| | M,0,0,1_4 M,1,1050,1_5 | |
| T2.PTS.STC.000.039 | (CardData) B,1,625600,0_3 (TermianlData) B,1,1050,0_3 | (Card) YYYYMMDDHHMM,M,1,624550,1_1 (Terminal) YYYYMMDDHHMM,M,1,1050,1_1 |
| T2.PTS.STC.000.040 | (CardData) B,1,621850,0_6 B,0,621850,0_7 B,1,620800,0_8 (TermianlData) B,1,1050,0_6 B,0,0,0_7 B,1,1050,0_8 | (Card) YYYYMMDDHHMM,M,1,619750,1_2 (Terminal) YYYYMMDDHHMM,M,1,1050,1_2 |
| T2.PTS.STC.000.041 | (CardData) M,1,618700,1_4 (TermianlData) M,1,1050,1_4 | (Card) YYYYMMDDHHMM,M,1,617050,1_1 (Terminal) YYYYMMDDHHMM,M,1,1650,1_1 |
| T2.PTS.STC.000.042 | (CardData) M,1,616000,1_3 | (Card) YYYYMMDDHHMM,B,1,614350,0_1 |

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| | (TermianlData) M,1,1050,1_3 | (Terminal) YYYYMMDDHHMM,B,1,1650,0_1 |
| T2.PTS.STC.000.043 | (CardData) B,1,613300,0_3 (TermianlData) B,1,1050,0_3 | (Card) YYYYMMDDHHMM,M,1,611550,1_1 (Terminal) YYYYMMDDHHMM,M,1,1750,1_1 |
| T2.PTS.STC.000.044 | (CardData) B,1,608850,0_3 (TermianlData) B,1,1050,0_3 | (Card) YYYYMMDDHHMM,B,1,607100,0_1 (Terminal) YYYYMMDDHHMM,B,1,1750,0_1 |
| T2.PTS.STC.001.001 | (CardData) 201503271656,B,1,603350,0_7 201503271712,B,0,603350,0_8 (TermianlData) 201503271656,B,1,1050,0_7 201503271712,B,0,0,0_8 | (Card) 201503271720,M,1,603350,1_2 (Terminal) 201503271720,M,1,0,1_2 |
| T2.PTS.STC.001.002 | (CardData) 201503280032,B,1,600650,0_1 201503280032,B,0,600650,0_2 (TermianlData) | (Card) 201503280136,M,1,600650,1_1 (Terminal) 201503280136,M,1,0,1_1 |

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| | 201503280032,B,1,1050,0_1 201503280032,B,0,0,0_2 | |
| T2.PTS.STC.001.003 | (CardData) 201503281056,B,1,593550,0_11 201503281120,B,0,593550,0_12 (TermianlData) 201503281056,B,1,1050,0_11 201503281120,B,0,0,0_12 | (Card) 201503281320,M,1,593550,1_3 (Terminal) 201503281320,M,1,0,1_3 |
| T2.PTS.STC.001.004 | (CardData) 201503281920,B,1,588150,0_19 201503281920,B,0,588150,0_20 (TermianlData) 201503281920,B,1,1050,0_19 201503281920,B,0,0,0_20 | (Card) 201503282128,M,1,587100,1_5 (Terminal) 201503282128,M,1,1050,1_5 |
| T2.PTS.STC.001.005 | (CardData) 201503290336,M,0,581600,1_8 201503290336,M,1,580550,1_9 201503290344,B,1,579300,0_2 201503290352,B,0,579300,0_3 (TermianlData) 201503290336,M,0,0,1_8 | (Card) 201503290408,M,1,579300,1_10 (Terminal) 201503290408,M,1,0,1_10 |

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| | 201503290336,M,1,1050,1_9 201503290344,B,1,1250,0_2 201503290352,B,0,0,0_3 | |
| T2.PTS.STC.001.006 | (CardData) 201503291032,M,1,575100,1_16 201503291032,M,0,575100,1_17 201503291040,B,1,575100,0_7 201503291040,B,0,575100,0_8 (TermianlData) 201503291032,M,1,1050,1_16 201503291032,M,0,0,1_17 201503291040,B,1,0,0_7 201503291040,B,0,0,0_8 | (Card) 201503291152,M,1,575100,1_18 (Terminal) 201503291152,M,1,0,1_18 |
| T2.PTS.STC.001.007 | (CardData) 201503291632,M,1,574050,1_20 201503291632,M,0,574050,1_21 201503291640,B,1,574050,0_9 201503291648,B,0,574050,0_10 (TermianlData) 201503291632,M,1,1050,1_20 201503291632,M,0,0,1_21 | (Card) 201503291848,M,1,574050,1_22 (Terminal) 201503291848,M,1,0,1_22 |

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| | 201503291640,B,1,0,0_9 201503291648,B,0,0,0_10 | |
| T2.PTS.STC.001.008 | (CardData) 201503300008,M,1,571950,1_1 201503300024,M,0,571950,1_2 201503300024,B,1,571950,0_1 201503300032,B,0,571950,0_2 (TermianlData) 201503300008,M,1,1050,1_1 201503300024,M,0,0,1_2 201503300024,B,1,0,0_1 201503300032,B,0,0,0_2 | (Card) 201503300240,M,1,570900,1_3 (Terminal) 201503300240,M,1,1050,1_3 |
| T2.PTS.STC.001.009 | (CardData) 201503300616,M,1,569850,1_5 201503300632,M,0,569850,1_6 (TermianlData) 201503300616,M,1,1050,1_5 201503300632,M,0,0,1_6 | (Card) 201503300640,B,1,569850,0_3 (Terminal) 201503300640,B,1,0,0_3 |
| T2.PTS.STC.001.010 | (CardData) 201503301544,M,1,567050,1_9 201503301552,M,0,567050,1_10 | (Card) 201503301704,B,1,567050,0_4 (Terminal) |

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| | (TermianlData) 201503301544,M,1,1050,1_9 201503301552,M,0,0,1_10 | 201503301704,B,1,0,0_4 |
| T2.PTS.STC.001.011 | (CardData) 201503302136,M,1,564250,1_13 201503302152,M,0,564250,1_14 (TermianlData) 201503302136,M,1,1050,1_13 201503302152,M,0,0,1_14 | (Card) 201503302352,B,1,564250,0_5 (Terminal) 201503302352,B,0,0,0_6 |
| T2.PTS.STC.001.012 | (CardData) 201504010400,B,1,563200,0_1 201504010408,B,0,563200,0_2 201504010416,M,1,563200,1_1 201504010432,M,0,563200,1_2 (TermianlData) 201504010400,B,1,1050,0_1 201504010408,B,0,0,0_2 201504010416,M,1,0,1_1 201504010432,M,0,0,1_2 | (Card) 201504010440,B,1,563200,0_3 (Terminal) 201504010440,B,1,0,0_3 |
| T2.PTS.STC.001.013 | (CardData) 201504071344,M,1,546900,1_6 | (Card) 201504071608,B,1,546900,0_5 |

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|--------------------|---|--|
| | 201504071408,M,0,546900,1_7 (TermianlData) 201504071344,M,1,0,1_6 201504071408,M,0,0,1_7 | (Terminal) 201504071608,B,1,0,0_5 |
| T2.PTS.STC.001.014 | (CardData) 201504080608,M,1,544100,1_3 201504080616,M,0,544100,1_4 (TermianlData) 201504080608,M,1,1050,1_3 201504080616,M,0,0,1_4 | (Card) 201504080824,B,1,543050,0_1 (Terminal) 201504080824,B,1,1050,0_1 |
| T2.PTS.STC.001.015 | (CardData) 201504080824,B,1,543050,0_1 201504081224,B,0,543050,0_2 201504081232,M,1,543050,1_5 201504081400,M,0,543050,1_6 (TermianlData) 201504080824,B,1,1050,0_1 201504081224,B,0,0,0_2 201504081232,M,1,0,1_5 201504081400,M,0,0,1_6 | (Card) 201504081400,B,1,543050,0_3 (Terminal) 201504081400,B,1,0,0_3 |
| T2.PTS.STC.001.016 | (CardData) | (Card) |

| | | |
|--------------------|---|--|
| | 201504081744,B,1,542000,0_5 201504081752,B,0,542000,0_6 201504081800,M,1,542000,1_7 201504081808,M,0,542000,1_8 (TermianlData) 201504081224,B,0,0,0_2 201504081232,M,1,0,1_5 201504081400,M,0,0,1_6 201504081400,B,1,0,0_3 | 201504082008,B,1,542000,0_7 (Terminal) 201504081736,B,0,0,0_4 |
| T2.PTS.STC.001.017 | (CardData) 201504090024,B,1,539200,0_3 201504090032,B,0,539200,0_4 201504090040,M,1,539200,1_1 201504090048,M,0,539200,1_2 (TermianlData) 201504090024,B,1,1050,0_3 201504090032,B,0,0,0_4 201504090040,M,1,0,1_1 201504090048,M,0,0,1_2 | (Card) 201504090408,B,1,538150,0_5 (Terminal) 201504090408,B,1,1050,0_5 |
| T2.PTS.STC.002.001 | (CardData) 201504092056,B,0,500,0_6 | (Card) 201504092056,B,0,500,0_6 |

| | | |
|--------------------|--|---|
| | (TermianlData) 201504092056,B,0,0,0_6 | (Terminal) 201504092056,B,0,0,0_6 |
| T2.PTS.STC.002.002 | (CardData) 201504110104,B,1,1450,0_1 201504110120,B,0,1450,0_2 201504110136,M,1,1450,1_1 (TermianlData) 201504110104,B,1,1050,0_1 201504110120,B,0,0,0_2 201504110136,M,1,0,1_1 | (Card) 201504110136,M,1,1450,1_1 (Terminal) 201504110136,M,1,0,1_1 |
| T2.PTS.STC.002.003 | (CardData) 201504111656,M,0,1500,1_2 201504111856,M,1,450,1_3 201504111912,M,0,450,1_4 (TermianlData) 201504111656,M,0,0,1_2 201504111856,M,1,1050,1_3 201504111912,M,0,0,1_4 | (Card) 201504111912,M,0,450,1_4 (Terminal) 201504111912,M,0,0,1_4 |
| T2.PTS.STC.002.004 | (CardData) 201504120216,B,1,2450,0_1 201504120216,B,0,2450,0_2 | (Card) 201504120240,B,1,800,0_3 (Terminal) |

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|--------------------|--|---|
| | 201504120232,M,1,2450,1_1 (TermianlData) 201504120216,B,1,1050,0_1 201504120216,B,0,0,0_2 201504120232,M,1,0,1_1 | 201504120240,B,1,1650,0_3 |
| T2.PTS.STC.002.005 | (CardData) 201504121224,B,0,500,0_4 (TermianlData) 201504121224,B,0,0,0_4 | (Card) 201504121224,B,0,500,0_4 (Terminal) 201504121224,B,0,0,0_4 |
| T2.PTS.STC.002.006 | (CardData) 201504130256,B,1,450,0_1 201504130320,B,0,450,0_2 (TermianlData) 201504130256,B,1,1050,0_1 201504130320,B,0,0,0_2 | (Card) 201504130408,M,1,450,1_1 (Terminal) 201504130408,M,1,0,1_1 |
| T2.PTS.STC.002.007 | (CardData) 201504131944,M,1,1450,1_3 201504131952,M,0,1450,1_4 201504132000,B,1,1450,0_3 (TermianlData) 201504131944,M,1,1050,1_3 | (Card) 201504132000,B,1,1450,0_3 (Terminal) 201504132000,B,1,0,0_3 |

| | | |
|--------------------|---|---|
| | 201504131952,M,0,0,1_4 201504132000,B,1,0,0_3 | |
| T2.PTS.STC.002.008 | (CardData) 201504140944,M,0,3500,1_2 201504141048,M,1,2450,1_3 201504141104,M,0,2450,1_4 201504141104,B,1,2450,0_1 (TerminalData) 201504140944,M,0,0,1_2 201504141048,M,1,1050,1_3 201504141104,M,0,0,1_4 201504141104,B,1,0,0_1 | (Card) 201504141112,M,1,700,1_5 (Terminal) 201504141112,M,1,1750,1_5 |
| T2.PTS.STC.003.000 | Input=Terminal_Data{ M,1,1050 M,0,0 M,1,1050 M,0,200 M,1,1050 M,0,0 M,1,1050 M,0,0} | Output=Settled_Bus_Fee.txt{0, ,B} Settled_Metro_Fee.txt{5650,201412191144,M} |
| T2.PTS.STC.003.001 | Input= Terminal_Data{ M,1,1050 M,0,0 M,1,1050 M,0,0 | Output=Settled_Bus_Fee.txt{3150,201412212032,B} Settled_Metro_Fee.txt{3350,201412211024,M} |

| | | |
|--------------------|--|--|
| | <p>M,1,1050 M,0,200</p> <p>B,1,1050 B,0,0</p> <p>B,1,1050 B,0,0</p> <p>B,1,1050 B,0,0}</p> | |
| T2.PTS.STC.003.002 | <p>Input=Terminal_Data{</p> <p>B,1,1050 B,0,0</p> <p>B,1,1050 B,0,0</p> <p>B,1,1050 B,0,0</p> <p>M,1,1050 M,0,200</p> <p>M,1,1050 M,0,0</p> <p>M,1,1050 M,0,200}</p> | <p>Output=Settled_Bus_Fee.txt{3150,201412230304,B}</p> <p>Settled_Metro_Fee.txt{3550,201412230904,M}</p> |
| T2.PTS.STC.003.003 | <p>Input=Terminal_Data{</p> <p>B,1,1050 B,0,0</p> <p>M,1,1050 M,0,0</p> <p>B,1,1050 B,0,0</p> <p>M,1,1050 M,0,200</p> <p>B,1,1050 B,0,0</p> <p>M,1,1050 M,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{3150,201412251408,B}</p> <p>Settled_Metro_Fee.txt{3550,201412251736,M}</p> |
| T2.PTS.STC.003.004 | <p>Input=Terminal_Data{</p> <p>B,1,1050 B,0,0</p> | <p>Output=Settled_Bus_Fee.txt{1575,201412270712,B}</p> <p>Settled_Metro_Fee.txt{525,201412270312,M}</p> |

| | | |
|--------------------|---|--|
| | M,1,0 M,0,0 B,1,1050 B,0,0} | |
| T2.PTS.STC.003.005 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,0 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{1575,201412281448,B} Settled_Metro_Fee.txt{525,201412281144,M} |
| T2.PTS.STC.003.006 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 M,1,1050 M,0,0} | Output=Settled_Bus_Fee.txt{590,201501020136,B} Settled_Metro_Fee.txt{1809,201501020600,M} |
| T2.PTS.STC.003.007 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{1640,201501031936,B} Settled_Metro_Fee.txt{759,201501031448,M} |
| T2.PTS.STC.003.008 | Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,0 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{1575,201501041432,B} Settled_Metro_Fee.txt{525,201501040952,M} |
| T2.PTS.STC.003.009 | Input=Terminal_Data{ M,1,1050 M,0,0 | Output=Settled_Bus_Fee.txt{525,201501060240,B} Settled_Metro_Fee.txt{1575,201501060712,M} |

| | | |
|--------------------|---|--|
| | B,1,0 B,0,0 M,1,1050 M,0,0} | |
| T2.PTS.STC.003.010 | Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,300 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{1809,201501091512,B} Settled_Metro_Fee.txt{590,201501090144,M} |
| T2.PTS.STC.003.011 | Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,300 M,1,1050 M,0,0} | Output=Settled_Bus_Fee.txt{759,201501111408,B} Settled_Metro_Fee.txt{1640,201501111808,M} |
| T2.PTS.STC.003.012 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 B,1,0 B,0,0 M,1,1050 M,0,0} | Output=Settled_Bus_Fee.txt{820,201501140224,B} Settled_Metro_Fee.txt{1578,201501140608,M} |
| T2.PTS.STC.003.013 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 B,1,0 B,0,0 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{1870,201501121456,B} Settled_Metro_Fee.txt{528,201501121032,M} |

| | | |
|---------------------------|--|---|
| <p>T2.PTS.STC.003.014</p> | <p>Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 B,1,0 B,0,200 M,1,1050 M,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{975,201501171456,B} Settled_Metro_Fee.txt{1623,201501171808,M}</p> |
| <p>T2.PTS.STC.003.015</p> | <p>Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 B,1,0 B,0,200 B,1,1050 B,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{2025,201501201304,B} Settled_Metro_Fee.txt{573,201501200304,M}</p> |
| <p>T2.PTS.STC.003.016</p> | <p>Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,0 M,1,0 M,0,0 M,1,1050 M,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{350,201501211704,B} Settled_Metro_Fee.txt{1750,201501212144,M}</p> |
| <p>T2.PTS.STC.003.017</p> | <p>Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,0 M,1,0 M,0,0 B,1,1050 B,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{1400,201501221200,B} Settled_Metro_Fee.txt{700,201501220936,M}</p> |

| | | |
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| <p>T2.PTS.STC.003.018</p> | <p>Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,200 M,1,0 M,0,300 M,1,1050 M,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{1400,201501221200,B} Settled_Metro_Fee.txt{700,201512200936,M}</p> |
| <p>T2.PTS.STC.003.019</p> | <p>Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,200 M,1,0 M,0,300 M,1,1050 M,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{530,201501241640,B} Settled_Metro_Fee.txt{2068,201501241832,M}</p> |
| <p>T2.PTS.STC.003.020</p> | <p>Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 M,0,0 B,1,0 B,0,200 M,1,0 M,0,300 B,1,1050 B,0,0}</p> | <p>Output=Settled_Bus_Fee.txt{1580,201501252248,B} Settled_Metro_Fee.txt{1018,201501252016,M}</p> |
| <p>T2.PTS.STC.003.021</p> | <p>Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 M,1,1750 M,0,200}</p> | <p>Output=Settled_Bus_Fee.txt{525,201501261544,B} Settled_Metro_Fee.txt{2475,201501261608,M}</p> |

| | | |
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| T2.PTS.STC.003.022 | Input=Terminal_Data{ M,1,1750 M,0,200 M,1,1050 M,0,200} | Output=Settled_Bus_Fee.txt{0,,B} Settled_Metro_Fee.txt{3200,201501280312,M} |
| T2.PTS.STC.003.023 | Input=Terminal_Data{ M,1,1750 M,0,200 B,1,0 B,0,200 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{1889,201501302000,B} Settled_Metro_Fee.txt{1310,201501301056,M} |
| T2.PTS.STC.003.024 | Input=Terminal_Data{ B,1,1750 B,0,0 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{2800,201502040216,B} Settled_Metro_Fee.txt{0,,M} |
| T2.PTS.STC.003.025 | Input=Terminal_Data{ B,1,1750 B,0,0 M,1,0 M,0,300 M,1,1050 M,0,0} | Output=Settled_Bus_Fee.txt{1157,201502060512,B} Settled_Metro_Fee.txt{1942,201502060616,M} |
| T2.PTS.STC.003.026 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 B,1,1650 B,0,0} | Output=Settled_Bus_Fee.txt{2175,201502090616,B} Settled_Metro_Fee.txt{525,201502090552,M} |
| T2.PTS.STC.003.027 | Input=Terminal_Data{ | Output=Settled_Bus_Fee.txt{0,,B} |

| | | |
|--------------------|---|---|
| | M,1,1650 M,0,0 M,1,1050 M,0,200} | Settled_Metro_Fee.txt{2900,2015} |
| T2.PTS.STC.003.028 | Input=Terminal_Data{ M,1,1650 M,0,0 B,1,0 B,0,200 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{ Settled_Metro_Fee.txt{} |
| T2.PTS.STC.003.029 | Input=Terminal_Data{ B,1,1650 B,0,0 B,1,1050 B,0,0} | Output=Settled_Bus_Fee.txt{2700,201502150944,B} Settled_Metro_Fee.txt{0,,M} |
| T2.PTS.STC.003.030 | Input=Terminal_Data{ B,1,1650 B,0,0 M,1,0 M,0,300 M,1,1050 M,0,0} | Output=Settled_Bus_Fee.txt{1072,201502170904,B} Settled_Metro_Fee.txt{1927,201502171024,M} |
| T2.PTS.STC.003.031 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 B,1,1650 M,1,1050 M,0,0} | Output=Settled_Bus_Fee.txt{2175,201502300928,B} Settled_Metro_Fee.txt{1575,201502300952,M} |
| T2.PTS.STC.003.032 | Input=Terminal_Data{ M,1,1050 B,1,1250 B,0,0 M,1,0} | Output=Settled_Bus_Fee.txt{975,201502231136,B} Settled_Metro_Fee.txt{3373,201502231200,M} |

| | | |
|--------------------|--|---|
| | M,0,300 B,1,0 M,1,1750} | |
| T2.PTS.STC.003.033 | Input=Terminal_Data{ M,1,1050 M,0,0 B,1,1050 B,0,0 M,1,0} | Output=Settled_Bus_Fee.txt{525,201502251552,B} Settled_Metro_Fee.txt{1575,201502261640,B} |
| T2.PTS.STC.003.034 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 M,1,1050} | Output=Settled_Bus_Fee.txt{590,201502261640,B} Settled_Metro_Fee.txt{1809,201502261728,M} |
| T2.PTS.STC.003.035 | Input=Terminal_Data{ M,1,1050 M,0,0 B,1,0 B,0,0 B,1,1050} | Output=Settled_Bus_Fee.txt{1575,201502271624,B} Settled_Metro_Fee.txt{525,201502271552,M} |
| T2.PTS.STC.003.036 | Input=Terminal_Data{ B,1,1050 B,0,0 M,1,0 M,0,300 B,1,0} | Output=Settled_Bus_Fee.txt{820,201502281104,B} Settled_Metro_Fee.txt{528,201502281048,M} |
| T2.PTS.STC.004.000 | Input=Clock(YYYYMMDDHHmm =YYYYMMDD0000) | Output=Settled_Bus_Fee.txt{Settled_Fee,Last_Tag,Transportation} Settled_Metro_Fee.txt{Settled_Fee,Last_Tag,Transportation} |

| | | |
|--------------------|--|---|
| | | OK.txt{NULL} |
| T2.PTS.STC.005.000 | Input= Day1{정산완료 신호}, Day2(NULL)} | Output=Day1.Terminal_Data 정상 생성 Day2.Terminal_Data 정상 생성 |
| T2.PTS.STC.006.000 | Input=Clock(YYYYMMDDHHmm =YYYYMMDD0000) 시스템 상 하루는 180초 이므로, 180초 마다 HHmm는 0000이 된다. | Output=Settled_Bus_Fee.txt{Settled_Fee,Last_Tag,Transportation} Settled_Metro_Fee.txt{Settled_Fee,Last_Tag,Transportation} OK.txt{NULL} |
| T2.PTS.STC.007.000 | Input=Tag | Output=Card_Data.txt{Tag_time,Transportation,On_Board,Balance,TerminalID_Count } |
| T2.PTS.STC.007.001 | Input=Tag | Output=Terminal_Data.txt{Tag_time,Transportation,On_Borad,Fee,TerminalID_Count } |
| T2.PTS.STC.007.002 | Input=Clock(YYYYMMDDHHmm =YYYYMMDD0000) | Output=Settled_Fee.txt{Last_Tag,Settled_Fee,Transportation} |

8.3 Input specifications

8.4 Output specifications

8.5 Testing tasks

Table 1 Testing Tasks & Schedule

| Task | Predecessor tasks | Special skills | Effort | Finish Date |
|--------------------------------|-------------------|----------------|--------|-------------|
| (1) STP 작성 | PTS.2014.SRS | | 2 | |
| (2) Test case specification 작성 | Task1 | PTS에 대한 지식 | 3 | |
| (3) ST 를 위한 인력 배치 | | | 6 | |
| (4) ST 를 위한 환경 구축 | Task3 | | 5 | |
| (5) ST 수행 | Task4 | | 5 | |
| (6) ST report 작성 | Task5 | | 2 | |

9 Environmental needs

PTS를 실행하기 위한 PC – Cygwin 필요

10 System test deliverables

11 Schedules

<Table 1 Testing Tasks & Schedule> 참조