

SOFTWARE VERIFICATION

1st Testing – System Test

Team 5



201214262 라가영, 201313250 서지혁

2016. 05. 25

Contents

1. Specification Review
2. Brute-Force Testing
3. Category-Partition Testing
4. Pairwise Testing
5. Miscellaneous
6. References

1. Specification Review

Object Review

- 하나의 소스 코드 파일을 기준으로 다른 소스 코드 파일들과 일치율을 보여주는 Clone Checker

Pleasant Clone Checker

Clone Checker

Software Modeling & Analysis Team, T1



— □ ×

LIST

- 개리.c
- 광희.c
- 김구라.c
- 김속.c
- 김흥국.c
- 민아.c
- 민호.c
- 박명수.c**
- 서유리.c
- 서지영.c
- 슬기.c
- 아이린.c
- 예린.c
- 예린.c
- 유리.c
- 유재석.c
- 정주리.c
- 정형돈.c
- 조세호.c
- 종현.c
- 주니어.c

1. Specification Review

Functional Requirements

- “R.1, Select Folder, 비교할 소스 코드 파일들이 들어있는 폴더를 선택한다.”
- “소스 코드”와 “소스 코드 파일”에 대한 정의가 불분명
 - 어떤 프로그래밍 언어로 작성되어야 하는가?
 - 해당 프로그래밍 언어의 명세상으로 컴파일 가능한 코드여야 하는가?
 - 소스 코드 파일의 크기에는 어떠한 제한이 있는가?

1. Specification Review

Functional Requirements

- “R.4, Calculate Sync-Rate, 분석하여 가공한 정보를 비교하여 일치 율을 계산한다.”
- 가공된 정보의 비교 방식과 일치 율 계산 기준이 명시되어 있지 않음
- R.4.1, R.4.2, R.4.3, R.4.4, R.4.5도 같은 문제

1. Specification Review

Non-Functional Requirements

- “A. 설명이 필요 없을 정도의 조작하기 쉬운 인터페이스”
- “B. 한 눈에 이해 가능한 결과 출력”
- 주관적인 어휘가 다수 사용. 기준이 불분명

1. Specification Review

Non-Functional Requirements

- “C. 다른 언어의 소스 파일도 비교 가능하도록 하는 확장성”
- “다른”의 기준이 되는 언어가 명세 되어 있지 않음

1. Specification Review

Performance Requirements

- “A. 소스 코드 파일 분석 작업은 5초 이내로 수행되어야 한다”
- “B. 기존 소스 코드 파일 변경 시 2초 이내로 비교 결과가 변경되어야 한다”

- 분석 대상이 되는 코드의 최대량 또는 기준량이 명시되어 있지 않음

1. Specification Review

Operating Environments

- 하나의 바이너리로 여러 운영 체제에서 실행 될 수 있는 Java 프로그래밍 언어를 채택
- But, “Microsoft Windows 7 이상”의 실행 환경만 지원

1. Specification Review

Interface Requirements

- “B.4, 종료 버튼, 화면 하단에 위치하여 클릭 시 프로그램이 종료된다”
- “C. 그 외의 메시지 출력은 대화상자(Dialog) 활용”

- 종료 버튼, 대화 상자가 없음

1. Specification Review

Other Requirements

- “A. 비교 결과(일치 율, 유사항목)를 한 눈에 알아 볼 수 있도록 비교 결과 출력 화면이 직관적이어야 한다”
- 직관성의 판단 기준이 명시되어 있지 않음

2. Brute-Force Testing

Use Case Testing

- 메인 인터페이스 창을 최소화 하였다가 복구 시켰을 경우, 사용자 인터페이스가 육안으로 확인 할 수 없을 정도로 작아 짐
- Clone Checker를 재 실행 하지 않는 이상, 원상 복구 불가능

2. Brute-Force Testing

Use Case Testing

2. Brute-Force Testing

Use Case Testing

- 명세서 상, 비교 결과 일치율이 85%인 파일은 클론으로 판정
- 결과를 한눈에 알아 볼 수 있도록 직관적이어야...
- But, 클론 판정유무가 인터페이스에 드러나지 않음

2. Brute-Force Testing

Use Case Testing

- `/* comment */` 스타일의 주석을 사용한 코드 분석 시, Clone Checker가 멈춤
- 세미콜론(;)을 사용해 여러 줄의 코드를 한 줄로 합쳤을 경우, “Use Case: Divide Code Line” 기능이 작동하지 않음

3. Category-Partition Testing

Test Specification Language

- Ostrand and Balcers 1988 CACM 논문에서 Category-Partition Testing을 위해 정의한 특정 언어인 TSL(Test Specification Language)
- TSL을 사용하여 테스트 카테고리화 선택지를 명세

Listing 1: TSL로 작성된 테스트 명세

```
File :
  Encoding :
    UTF-8.
    EUC-KR.
  Compilable :
    True.
    False.

Line :
  Lines :
    Zero. [single]
    Positive.

Comment :
  Comments :
    Zero.
    Positive. [property ContainsComment]
  Style :
    Single-line. [if ContainsComment]
    Multi-line. [if ContainsComment] [property MultiLineComment]
  Matching :
    True. [if MultiLineComment]
    False. [if MultiLineComment]

Function :
  Functions :
    Zero.
    Positive.

Variable :
  Variables :
    Zero.
    Positive.
```

3. Category-Partition Testing

Test Frame Generation

- Category-Partition Test 명세를 TSL로 작성
- `tslgenerator`를 사용하여 테스트 프레임 생성을 자동화

Listing 2: TSL을 통해 생성된 테스트 프레임

Test Case 1 <single>
 Lines : Zero

Test Case 2 (Key = 1.1.2.1.0.0.1.1.)
 Encoding : UTF-8
 Compilable : True
 Lines : Positive
 Comments : Zero
 Style : <n/a>
 Matching : <n/a>
 Functions : Zero
 Variables : Zero

Test Case 3 (Key = 1.1.2.1.0.0.1.2.)
 Encoding : UTF-8
 Compilable : True
 Lines : Positive
 Comments : Zero
 Style : <n/a>
 Matching : <n/a>
 Functions : Zero
 Variables : Positive

Test Case 4 (Key = 1.1.2.1.0.0.2.1.)
 Encoding : UTF-8
 Compilable : True
 Lines : Positive
 Comments : Zero
 Style : <n/a>
 Matching : <n/a>
 Functions : Positive
 Variables : Zero

Test Case 5 (Key = 1.1.2.1.0.0.2.2.)
 Encoding : UTF-8

 Compilable : True
 Lines : Positive
 Comments : Zero
 Style : <n/a>
 Matching : <n/a>
 Functions : Positive
 Variables : Positive

Test Case 6 (Key = 1.1.2.2.1.0.1.1.)
 Encoding : UTF-8
 Compilable : True
 Lines : Positive
 Comments : Positive
 Style : Single-line
 Matching : <n/a>
 Functions : Zero
 Variables : Zero

Test Case 7 (Key = 1.1.2.2.1.0.1.2.)
Encoding : UTF-8
Compilable : True
Lines : Positive
Comments : Positive
Style : Single-line
Matching : <n/a>
Functions : Zero
Variables : Positive

Test Case 10 (Key = 1.1.2.2.2.1.1.1.)
Encoding : UTF-8
Compilable : True
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : True
Functions : Zero
Variables : Zero

Test Case 8 (Key = 1.1.2.2.1.0.2.1.)
Encoding : UTF-8
Compilable : True
Lines : Positive
Comments : Positive
Style : Single-line
Matching : <n/a>
Functions : Positive
Variables : Zero

Test Case 11 (Key = 1.1.2.2.2.1.1.2.)
Encoding : UTF-8
Compilable : True
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : True
Functions : Zero
Variables : Positive

Test Case 9 (Key = 1.1.2.2.1.0.2.2.)
Encoding : UTF-8
Compilable : True
Lines : Positive
Comments : Positive
Style : Single-line
Matching : <n/a>
Functions : Positive
Variables : Positive

Test Case 12 (Key = 1.1.2.2.2.1.2.1.)
Encoding : UTF-8
Compilable : True
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : True
Functions : Positive
Variables : Zero

Test Case 13	(Key = 1.1.2.2.2.1.2.2.)	Test Case 16	(Key = 1.1.2.2.2.2.2.1.)
Encoding	: UTF-8	Encoding	: UTF-8
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Multi-line	Style	: Multi-line
Matching	: True	Matching	: False
Functions	: Positive	Functions	: Positive
Variables	: Positive	Variables	: Zero
Test Case 14	(Key = 1.1.2.2.2.2.1.1.)	Test Case 17	(Key = 1.1.2.2.2.2.2.2.)
Encoding	: UTF-8	Encoding	: UTF-8
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Multi-line	Style	: Multi-line
Matching	: False	Matching	: False
Functions	: Zero	Functions	: Positive
Variables	: Zero	Variables	: Positive
Test Case 15	(Key = 1.1.2.2.2.2.1.2.)	Test Case 18	(Key = 1.2.2.1.0.0.1.1.)
Encoding	: UTF-8	Encoding	: UTF-8
Compilable	: True	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Zero
Style	: Multi-line	Style	: <n/a>
Matching	: False	Matching	: <n/a>
Functions	: Zero	Functions	: Zero
Variables	: Positive	Variables	: Zero

Test Case 19	(Key = 1.2.2.1.0.0.1.2.)	Test Case 22	(Key = 1.2.2.2.1.0.1.1.)
Encoding	: UTF-8	Encoding	: UTF-8
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Zero	Comments	: Positive
Style	: <n/a>	Style	: Single-line
Matching	: <n/a>	Matching	: <n/a>
Functions	: Zero	Functions	: Zero
Variables	: Positive	Variables	: Zero
Test Case 20	(Key = 1.2.2.1.0.0.2.1.)	Test Case 23	(Key = 1.2.2.2.1.0.1.2.)
Encoding	: UTF-8	Encoding	: UTF-8
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Zero	Comments	: Positive
Style	: <n/a>	Style	: Single-line
Matching	: <n/a>	Matching	: <n/a>
Functions	: Positive	Functions	: Zero
Variables	: Zero	Variables	: Positive
Test Case 21	(Key = 1.2.2.1.0.0.2.2.)	Test Case 24	(Key = 1.2.2.2.1.0.2.1.)
Encoding	: UTF-8	Encoding	: UTF-8
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Zero	Comments	: Positive
Style	: <n/a>	Style	: Single-line
Matching	: <n/a>	Matching	: <n/a>
Functions	: Positive	Functions	: Positive
Variables	: Positive	Variables	: Zero

Test Case 25 (Key = 1.2.2.2.1.0.2.2.)
Encoding : UTF-8
Compilable : False
Lines : Positive
Comments : Positive
Style : Single-line
Matching : <n/a>
Functions : Positive
Variables : Positive

Test Case 26 (Key = 1.2.2.2.2.1.1.1.)
Encoding : UTF-8
Compilable : False
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : True
Functions : Zero
Variables : Zero

Test Case 27 (Key = 1.2.2.2.2.1.1.2.)
Encoding : UTF-8
Compilable : False
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : True
Functions : Zero
Variables : Positive

Test Case 28 (Key = 1.2.2.2.2.1.2.1.)
Encoding : UTF-8
Compilable : False
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : True
Functions : Positive
Variables : Zero

Test Case 29 (Key = 1.2.2.2.2.1.2.2.)
Encoding : UTF-8
Compilable : False
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : True
Functions : Positive
Variables : Positive

Test Case 30 (Key = 1.2.2.2.2.2.1.1.)
Encoding : UTF-8
Compilable : False
Lines : Positive
Comments : Positive
Style : Multi-line
Matching : False
Functions : Zero
Variables : Zero

Test Case 31	(Key = 1.2.2.2.2.2.1.2.)	Test Case 34	(Key = 2.1.2.1.0.0.1.1.)
Encoding	: UTF-8	Encoding	: EUC-KR
Compilable	: False	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Zero
Style	: Multi-line	Style	: <n/a>
Matching	: False	Matching	: <n/a>
Functions	: Zero	Functions	: Zero
Variables	: Positive	Variables	: Zero
Test Case 32	(Key = 1.2.2.2.2.2.2.1.)	Test Case 35	(Key = 2.1.2.1.0.0.1.2.)
Encoding	: UTF-8	Encoding	: EUC-KR
Compilable	: False	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Zero
Style	: Multi-line	Style	: <n/a>
Matching	: False	Matching	: <n/a>
Functions	: Positive	Functions	: Zero
Variables	: Zero	Variables	: Positive
Test Case 33	(Key = 1.2.2.2.2.2.2.2.)	Test Case 36	(Key = 2.1.2.1.0.0.2.1.)
Encoding	: UTF-8	Encoding	: EUC-KR
Compilable	: False	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Zero
Style	: Multi-line	Style	: <n/a>
Matching	: False	Matching	: <n/a>
Functions	: Positive	Functions	: Positive
Variables	: Positive	Variables	: Zero

Test Case 37	(Key = 2.1.2.1.0.0.2.2.)	Test Case 40	(Key = 2.1.2.2.1.0.2.1.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Zero	Comments	: Positive
Style	: <n/a>	Style	: Single-line
Matching	: <n/a>	Matching	: <n/a>
Functions	: Positive	Functions	: Positive
Variables	: Positive	Variables	: Zero
Test Case 38	(Key = 2.1.2.2.1.0.1.1.)	Test Case 41	(Key = 2.1.2.2.1.0.2.2.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Single-line	Style	: Single-line
Matching	: <n/a>	Matching	: <n/a>
Functions	: Zero	Functions	: Positive
Variables	: Zero	Variables	: Positive
Test Case 39	(Key = 2.1.2.2.1.0.1.2.)	Test Case 42	(Key = 2.1.2.2.2.1.1.1.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Single-line	Style	: Multi-line
Matching	: <n/a>	Matching	: True
Functions	: Zero	Functions	: Zero
Variables	: Positive	Variables	: Zero

Test Case 44	(Key = 2.1.2.2.2.1.2.1.)	Test Case 47	(Key = 2.1.2.2.2.2.1.2.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Multi-line	Style	: Multi-line
Matching	: True	Matching	: False
Functions	: Positive	Functions	: Zero
Variables	: Zero	Variables	: Positive
Test Case 45	(Key = 2.1.2.2.2.1.2.2.)	Test Case 48	(Key = 2.1.2.2.2.2.2.1.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Multi-line	Style	: Multi-line
Matching	: True	Matching	: False
Functions	: Positive	Functions	: Positive
Variables	: Positive	Variables	: Zero
Test Case 46	(Key = 2.1.2.2.2.2.1.1.)	Test Case 49	(Key = 2.1.2.2.2.2.2.2.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: True	Compilable	: True
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Multi-line	Style	: Multi-line
Matching	: False	Matching	: False
Functions	: Zero	Functions	: Positive
Variables	: Zero	Variables	: Positive

Test Case 50	(Key = 2.2.2.1.0.0.1.1.)	Test Case 53	(Key = 2.2.2.1.0.0.2.2.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Zero	Comments	: Zero
Style	: <n/a>	Style	: <n/a>
Matching	: <n/a>	Matching	: <n/a>
Functions	: Zero	Functions	: Positive
Variables	: Zero	Variables	: Positive
Test Case 51	(Key = 2.2.2.1.0.0.1.2.)	Test Case 54	(Key = 2.2.2.2.1.0.1.1.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Zero	Comments	: Positive
Style	: <n/a>	Style	: Single-line
Matching	: <n/a>	Matching	: <n/a>
Functions	: Zero	Functions	: Zero
Variables	: Positive	Variables	: Zero
Test Case 52	(Key = 2.2.2.1.0.0.2.1.)	Test Case 55	(Key = 2.2.2.2.1.0.1.2.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Zero	Comments	: Positive
Style	: <n/a>	Style	: Single-line
Matching	: <n/a>	Matching	: <n/a>
Functions	: Positive	Functions	: Zero
Variables	: Zero	Variables	: Positive

Test Case 56	(Key = 2.2.2.2.1.0.2.1.)	Test Case 59	(Key = 2.2.2.2.2.1.1.2.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Single-line	Style	: Multi-line
Matching	: <n/a>	Matching	: True
Functions	: Positive	Functions	: Zero
Variables	: Zero	Variables	: Positive
Test Case 57	(Key = 2.2.2.2.1.0.2.2.)	Test Case 60	(Key = 2.2.2.2.2.1.2.1.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Single-line	Style	: Multi-line
Matching	: <n/a>	Matching	: True
Functions	: Positive	Functions	: Positive
Variables	: Positive	Variables	: Zero
Test Case 58	(Key = 2.2.2.2.2.1.1.1.)	Test Case 61	(Key = 2.2.2.2.2.1.2.2.)
Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Multi-line	Style	: Multi-line
Matching	: True	Matching	: True
Functions	: Zero	Functions	: Positive
Variables	: Zero	Variables	: Positive

Test Case 62 (Key = 2.2.2.2.2.2.1.1.) Test Case 65 (Key = 2.2.2.2.2.2.2.2.)

Encoding	: EUC-KR	Encoding	: EUC-KR
Compilable	: False	Compilable	: False
Lines	: Positive	Lines	: Positive
Comments	: Positive	Comments	: Positive
Style	: Multi-line	Style	: Multi-line
Matching	: False	Matching	: False
Functions	: Zero	Functions	: Positive
Variables	: Zero	Variables	: Positive

Test Case 63 (Key = 2.2.2.2.2.2.1.2.)

Encoding	: EUC-KR
Compilable	: False
Lines	: Positive
Comments	: Positive
Style	: Multi-line
Matching	: False
Functions	: Zero
Variables	: Positive

Test Case 64 (Key = 2.2.2.2.2.2.2.1.)

Encoding	: EUC-KR
Compilable	: False
Lines	: Positive
Comments	: Positive
Style	: Multi-line
Matching	: False
Functions	: Positive
Variables	: Zero

3. Category-Partition Testing

Test Results

Key	Result
1.1.2.2.2.1.1.1.	Fail
1.1.2.2.2.2.1.1.	Fail
1.1.2.2.2.2.1.2.	Fail
1.1.2.2.2.2.2.1.	Fail
1.1.2.2.2.2.2.2.	Fail
1.2.2.2.2.2.1.1.	Fail
1.2.2.2.2.2.1.2.	Fail
1.2.2.2.2.2.2.1.	Fail
1.2.2.2.2.2.2.2.	Fail
2.1.2.2.2.2.1.1.	Fail
2.1.2.2.2.2.1.2.	Fail
2.1.2.2.2.2.2.1.	Fail
2.1.2.2.2.2.2.2.	Fail
2.2.2.2.2.2.1.1.	Fail
2.2.2.2.2.2.1.2.	Fail
2.2.2.2.2.2.2.1.	Fail
2.2.2.2.2.2.2.2.	Fail

4. Pairwise Testing

Test Modelling

- PICT 모델 포맷으로 테스트 모델링

Listing 3: PICT 포맷으로 모델링된 테스트 명세

```
Encoding: UTF-8, EUC-KR  
Compilable: True, False  
Lines: Zero, Positive  
Comments: Zero, Positive  
Style: Single-line, Multi-line  
Matching: True, False  
Functions: Zero, Positive  
Variables: Zero, Positive
```

4. Pairwise Testing

Test Case Generation

- PICT 모델로부터 테스트 케이스를 생성

Encoding	Compilable	Lines	Comments	Style	Matching	Function	Variables
EUC-KR	False	Zero	Positive	Multi-line	True	Zero	Zero
UTF-8	True	Positive	Zero	Single-line	False	Positive	Zero
UTF-8	True	Zero	Positive	Single-line	False	Zero	Positive
EUC-KR	False	Positive	Zero	Single-line	True	Positive	Positive
UTF-8	False	Positive	Positive	Multi-line	False	Positive	Positive
EUC-KR	True	Zero	Zero	Multi-line	False	Zero	Zero
UTF-8	True	Zero	Zero	Single-line	True	Positive	Positive
EUC-KR	False	Positive	Zero	Multi-line	True	Zero	Positive

4. Pairwise Testing

Test Results

Encoding	Compilable	Lines	Comments	Style	Matching	Function	Variables	Result
EUC-KR	False	Zero	Positive	Multi-line	True	Zero	Zero	Fail
UTF-8	True	Positive	Zero	Single-line	False	Positive	Zero	Pass
UTF-8	True	Zero	Positive	Single-line	False	Zero	Positive	Pass
EUC-KR	False	Positive	Zero	Single-line	True	Positive	Positive	Pass
UTF-8	False	Positive	Positive	Multi-line	False	Positive	Positive	Fail
EUC-KR	True	Zero	Zero	Multi-line	False	Zero	Zero	Pass
UTF-8	True	Zero	Zero	Single-line	True	Positive	Positive	Pass
EUC-KR	False	Positive	Zero	Multi-line	True	Zero	Positive	Pass

5. Miscellaneous

Test Review

Testing or Review	Result
Specification Review	16 Fault
Brute-Force Testing	4 Fail
Category-Partition Testing	17 Fail
Pairwise Testing	2 Fail

5. Miscellaneous

Test Review

- OOPT Stage 1000 report Activity 1005에 첨부된 스크린샷이 테스트 해당 버전으로 갱신되지 않음
- SMA에서 진행한 유닛 테스트가 나열된 유스케이스들을 커버하지 못함

5. Miscellaneous

Test Review

- 카테고리 파티션 테스트 명세로 코드의 컴파일 가능성, 네스팅 된 주석, 더 다양한 코드 구조 등의 옵션을 넣고 싶었지만..
- 시스템 테스트 과정에서 테스트 케이스가 폭발적으로 많아지는 것이 감당이 되지 않아 아이디어를 기각
- 변수 개수, 함수 개수 등의 테스트 항목으로 2^{31} 등의 특수한 값들을 넣고 싶었지만 테스트 픽스처 크기가 크게 나와 현 상황에서는 테스트 하지 않기로 결정.

6. References

- [1] “Category-Partition Method”, <http://www.cs.umd.edu/~atif/Teaching/Fall2003/Lectures/3.pdf>
- [2] “Specification-Based Test Generation”, <http://www.cs.sfu.ca/~cameron/Teaching/473/category-partition.html>
- [3] “TSL Generator for the Category Partition Method”, <https://github.com/alexorso/tslgenerator>
- [4] “Pairwise Testing”, <http://www.pairwise.org>
- [5] “Pairwise Independent Combinatorial Tool”, <https://github.com/Microsoft/pict>
- [6] “Pairwise Testing in the Real World: Practical Extensions to Test-Case Scenarios”, <https://msdn.microsoft.com/en-us/library/cc150619.aspx>

감사합니다.