Specification Based Testing - Part 1

Equivalence Partitioning

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Objective

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Apply equivalence partitioning testing technique

Equivalence Partitioning

- Technique for dividing input domain of a program/function into a finite number of equivalence partitions
  - Both valid and invalid partitions are considered
- Select one or more inputs from each equivalence partition
- Functional coverage is demonstrated by mapping equivalence partitions to test cases
- Equivalence partitioning is applicable for testing functions whose inputs are independent of each other

Equivalence Partitioning Steps

1. For each input, identify a set of equivalence partitions and label them
2. Write test cases covering as many of uncovered valid equivalence partitions as possible
3. For each invalid equivalence partition write a test case that covers one of the uncovered equivalence partitions

Equivalence Partitioning Example

Testing a procedure called:

- Validate_New_Password which accepts a password from a user and validates that the new password conforms to the following rules:

1. **A password must be between 6-10 characters**
2. **First and last character must be alphabetic, numeric or "?"**
3. **Remaining characters may be any character except control characters**
4. **Password must not be in a dictionary**

Equivalence Partitions

Length	First ch.	Last ch.	Remaining	Status of Password
(1) 6-10	(2) alpha	(5) alpha	(8) normal	(17) In dict
(10) <6	(3) numeric	(6) numeric	(16) control	(9) not in dict
(11) > 10	(4) ?	(7) ?		
	(12) control	(14) control		
	(13) other	(15) other		

Tests

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.

Test Matrix

EP	1	2	3	4	5	6	7	8	9	10	11
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											
15.											
16.											
17.											

Summary