TMap Foundation
Practice Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
May 2017	1.0	Neelima Padmawar Amruta Rakhonde	Post Integration Practice Book Creation

Table of Contents

1. PAIRWISE TESTING

1.1 Identify the no. of test cases resulting by conventional software testing.

1.2 Identify the no. of test cases resulting by pairwise testing

1.3 Find the missing combination.

Consider the following Scenarios :

Scenario 1 : GUI fields and corresponding equivalence classes

List box: 0, others
Radio Button: on, off
Text Box: validInt, inValidInt, AlphaSpecialCharacter
CheckBox: check, uncheck

Text Box	List Box	Check Box	Radio Button
Valid Int	0	check	ON
Invalid Int	0	uncheck	OFF
Invalid Int	Others	check	ON
AlphaSpecialCharacter	0	check	OFF
AlphaSpecialCharacter	others	uncheck	ON

Scenario 2 : OLA Vehicle Booking

VehicleType : Auto, Micro, Mini, Sedan
Share : Yes, No
PayemntType : OlaMoney, Cash

VehicleType	Share	PaymentType
Auto	Yes	OlaMoney
Auto	No	Cash
Micro	Yes	Cash
Mini	Yes	OlaMoney
Micro	No	OlaMoney
Sedan	Yes	OlaMoney
Mini	No	Cash

Scenario 3 : Modifying a picture in the Gallery of an Android mobile scenario?

Folder : Camera, WhatsAppImages, ScreenShots, Bluetooth
Edit : Crop, Rotate, Mirror
Share : Gmail, WhatsApp, LinkedIn

Folder	Edit	Share
Camera	Crop	Gmail
Camera	Rotate	WhatsApp
Camera	Mirror	LinkedIn

WhatsAppImages	Crop	WhatsApp
WhatsAppImages	Rotate	LinkedIn
WhatsAppImages	Mirror	Gmail
ScreenShots	Crop	LinkedIn
ScreenShots	Rotate	Gmail
Bluetooth	Crop	Gmail
Bluetooth	Mirror	LinkedIn

2. COVERAGE TYPES: BVA AND ECP

2.1 Light variant of limiting values analysis (BVA)

Consider the following Scenario :

Scenario 1 : A Cloth Store

In a cloth store, the discount is calculated based on the cloth size: When the size is less than 30 or between 32 and 36 or higher than 42, then he/ she gets a discount.

Which values are chosen for making test cases for calculating the discount when the light variant of the limiting values analysis is used?

a. 29,30,32,33,35,36,42 and 43
b. 26,30,34,36,42
c. 30,31,32,33,42 and 43
d. 27,31,32,41,42 and 47

2.2 Normal BVA:

Consider the following Scenarios :

Scenario 1 : Arrive & Go Airline

Arrive-and-Go airline wants to clarify its baggage handling policy, whilst maximizing revenues, and will introduce the following tariffs for all baggage per individual customer (weights are rounded up to the nearest 0.1Kg):
The first 2Kg will be carried free of charge. The next 10 Kg will be carried for a flat charge of $10.
An additional 15Kg will be charged a total charge of $17.
Luggage over this amount will be charged at $5 per Kg, up to a maximum of 150Kg per person.
No passenger may take more that 150Kg with them.

Which of the following would constitute boundary values for baggage weights in the price calculation?
a. A. 0, 5.0, 10.0, 17.0
b. B. 2.0, 9.9, 15.0, 26.9
c. C. 1.9, 12.0, 14.9, 150.0
d. D. 2.0, 12.1, 27.0, 150.1

Scenario 2 : System to calculate the Tax to be Paid

An employee has $4000 of salary tax free. The next $1500 is taxed at 10% .The next $28000 is taxed at 22%. Any further amount is taxed at 40%.
The classes will be as follows:

Apply BVA. Which values are suitable to do with non-experienced testers? Nonexperience testers will go with normal BV.

a. $3900,$4000,$4001,$4999,$5500,$5501,$33499,$33500,$33501
b. $3900,$4000,$4001,$4998,$ 5500,$ 5501,$33499,$33500,$33501
c. $4000,$4001,$4002,$ 4999,$5500,$5501,$27999,$33500,$ 33501
d. $3900,$4000,$4001,$ 4999,$ 5500,$ 5501,$ 33500,$ 33501,$ 33502

Scenario 3 : Flight Reservation System

In a flight reservation system, the number of available seats in each plane model is an input. A plane may have any positive number of available seats, up to the given capacity of the plane. Using Boundary Value analysis, a list of available – seat values were generated.

Which of the following lists is correct?

a. 1, 2, capacity -1, capacity, capacity plus 1
b. 0, 1, capacity, capacity plus 1
c. 0, 1, 2, capacity plus 1, a very large number
d. 0, 1, 10, 100, capacity, capacity plus one

2.3 ECP:

Consider the following Scenarios :

Scenario 1 : Cloth Store

In a cloth store, the discount is calculated based on the cloth size:
When the size is less than 30 or between 32 and 36 or higher than 42, then he/ she gets a discount.

How many equivalence classes are distinguished in the above example?
a. 2
b. 3
c. 4
d. 5

Scenario 2 : Discount based upon Age

If you are less than 18, you are too young to be insured. Between 18 and 30 inclusive, you will receive a 20% discount. Anyone over 30 is not eligible for a discount.

Which of the following values for age are in the SAME equivalence partition?
a. 17, 18, 19
b. 29, 30, 31
c. 18, 29, 30
d. 17, 29, 31

Scenario 3 : Online Pizza Order

In the system under test (for ordering Pizza via internet), the following 4 parameters play a role. Pizza store announces offer as: On Thursday's if you order any 2 medium size pizza you will get 15% discount. If you have coupon you will get an additional 5% discount.

Number of items	<2; 2 ;> 2
Coupon	Yes; No
Ordering Day (Thursday)	Yes; No
Discount	Yes, No

In order to test all the combinations relating to these 4 parameters, how many tests cases are required.

a. 4
b. 8
c. 12
d. 24

3. DATA COMBINATION TEST(DCOT)

3.1 Identify the logically related data attributes

3.2 Identify the correct attributes with their equivalence classes for creating the classification tree?

Consider the following Scenarios :

Scenario 1 : MetroZip Bus-pass

The Metrozip provides buss pass to passengers travelling to Hinjewadi from any corner of Pune.
If bus pass is taken for 30 days for two-way, the fare is Rs. 2270/- for long route, Rs. 1800/- for medium route and Rs. 1650/- for short route.
These fares vary based upon the number of days and whether one-way or two-way.
The above fares are half if calculated for one-way for 30 days.
The day-wise packages include 1 Day, 5 Days, 15 Days and 30 Days.
If the number of days selected for the package is less than 30 days, it costs additional 10%. (Example: Long route two-way for 30 days = 2270 then for 1 day it is around Rs. 75. Therefore 10% of 75 is 7.5. So fare for long route two-way for 1 day is 75 + 7.5 = Rs. 82.5/-)

Identify logically related data attributes.
Identify correct attributes and their equivalence classes for creating a classification tree.

Scenario 2 : Student details taking admission to a College.

How can we group data attributes that are logically related with reference to Student details?

Scenario 3 : Swimming summer Camp

The user registers for the swimming summer camp by entering number of details concerning the nature of the group (Ladies, Gents & Kids).
They have to choose the camp schedule such as start date & end date and timing. The camps are scheduled for duration of either 15 days or 20 days.

The user can select the suitable camp schedules based on the search criteria of camp start date and nature of the users' group.

Identify correct attributes and their equivalence classes for creating a classification tree.

4. PROCESS CYCLE TEST (PCT)

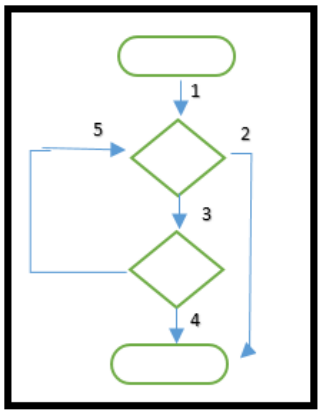
4.1 Identify test situations using test depth level 1

4.2 Identify test situations using test depth level 2

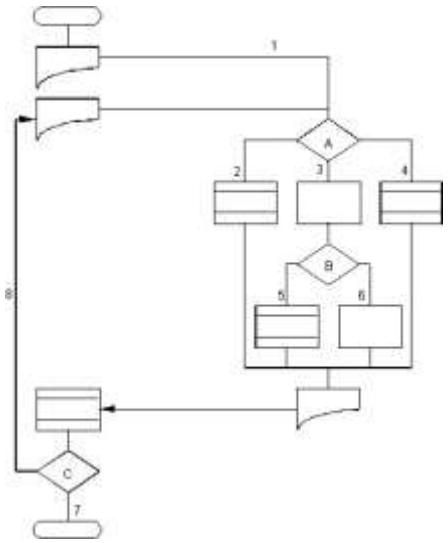
4.3 Identify test situations using test depth level 3

Consider the following Flowcharts :

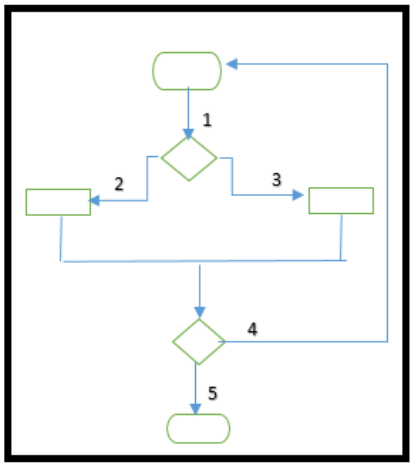
Flowchart 1 :



Flowchart 2:



Flowchart 3 :



5. DECISION COVERAGES

5.1 Identify Conditions

5.2 Identify Decisions

5.3 Apply Condition Coverage (CC)

5.4 Apply Decision Coverage (DC)

5.5 Apply Condition Decision Coverage (CDC)

5.6 Apply Multiple Coverage

5.7 Apply Modified Condition Decision Coverage (MCDC)

Consider the following Code Snippets :

Code Snippet 1 :

```
If ((EBC or Minority) and State = MH) Then
    50% Fee Concession
Else
    No Concession
End if
```

Code Snippet 2 :

```
If (std12 = commerce or std12 = arts) Then
    Not eligible for Engineering
Else if (std12 = science)
    Eligible for Engineering
End if
If (Earnings < 100000 and State = MH) Then
    50% Fee Concession
End IF
```

Code Snippet 3 :

```
If (role=admin and userid = cg and pwd = cg123) Then
    DISPLAY "Allowed to create new Users"
End if
```

6. ELEMENTARY COMPARISON TEST (ECT)

6.1 Identify conditions

6.2 Identify decision

6.3 Apply MCDC

6.4 Generate ECT graph

6.5 Create test cases

Consider the following Code Snippets :

Code Snippet 1 :

```
If (std12 = commerce or std12 = arts) Then
    Not eligible for Engineering
Else if (std12 = science)
    Eligible for Engineering
End if
If (Earnings < 100000 and State = MH ) Then
     50% Fee Concession
End IF
```

Code Snippet 2 :

```
IF purchase > 5000 AND membership = yes
     THEN discount = 15%
END-IF
IF region = Pune OR region = Mumbai
     THEN Tax = 2%
ELSE Tax = 3%
END-IF
```

Code Snippet 3 :

```
IF payment Type = PayTM or paymentType=CreditCard
     THEN "Rs.100 Cash back"
ElSE IF (movietime >= 8 hrs and movie time <= 16 hrs) or (movieday=weekday)
     THEN "Rs. 25. Less on every ticket"
ELSE
     "No Discount"
END-IF
```

7. CRUD AND DCYT

7.1 Identify suitable Test Cases

7.2 Identify the Integrity Rule

7.3 Identify the Entities

Consider the following Scenarios :

Scenario 1 : Add Exam Details

Suppose that the "Add exam details" is processed as follows by the following functions: Login[C]; Add exam details[C]; Delete exam details [D]; View exam details[R]; Update exam details [U];
The standard coverage of CRUD is then achieved with which of the following test cases:

a. Login[C]; Add exam details[C]; Delete exam details [D]; View exam details[R]; Update exam details [U]
b. Login[C]; Add exam details[C]; View exam details[R]; Update exam details [U]; View exam details[R]; Delete exam details [D]
c. Login[C]; Add exam details[C]; Delete exam details [D]; View exam details[R]; Update exam details [U]; View exam details[R]
d. Login[C]; Add exam details[C]; View exam details[R]; Update exam details [U]; View exam details[R]; Delete exam details [D]; View exam details[R]

Scenario 2 : Customer Data in Purchase Order System

A customer cannot be deleted as long as there is an order associated with the customer. Refer below table and identify which integrity rule can be applied for given Test Situations and Valid columns respectively?

Test Situation	Action	Entity	Condition	Valid Y/N
	D	Customer	Order associated with customer	
	D	Customer	No order associated with customer	

a. Test Situation: IR1, IR2
Valid: N, Y
b. Test Situation: IR2, IR1
Valid: N, Y
c. Test Situation: IR2, IR1
Valid: Y, N
d. Test Situation: IR1, IR1
Valid: Y, N

Scenario 3 : Purchase Order System

Consider the following figure and Identify the entities that are mentioned in the given below CRUD Matrix:

	Order	Chemical	Requester	Vendor Catalog
Place Order	C	R	R	R, L
Change Order	U, D		R	R, L
Manage Chemical Inventory		C, U, D		
Report on Orders	R	R, L	R, L	
Edit Requesters			C, U, L	

a. Order, Chemical, Register, Vendor Catalog
b. Place order, Change Order, Manage Chemical Inventory, Report on orders, Edit Requesters
c. C,U,D,R
d. Order, Place Order, Chemical, Register, Vendor Catalog

TMAP USEFUL LINKS

Sr. No.	Topic	Existing Module	Sub Module
1	Framework and Importance of Testing	Framework and Importance of Testing	
2	Essentials of Tmap	Essentials of TMap	
3	TMAP lifecycle	Tmap Lifecycle	
4	Introduction of Test Design	TMap NEXTR Test Engineer	Module 1: Introduction to Test Design
5	**Coverage:** Equivalence Partitioning Boundary Value Pairwise Testing **Technique:** Data Combination Test	TMap NEXTR Test Engineer	Module 2: Testing of Equivalence Classes
6	**Coverage:** Paths **Technique:** Process Cycle Test	TMap NEXTR Test Engineer	Module 3: Testing of Paths
7	**Coverage Type:** Condition Coverage Decision Coverage Condition/Decision Coverage Multiple Condition Coverage Modified Condition Decision MCC **Technique:** Semantic Test Decision table test Elementary comparison test	TMap NEXTR Test Engineer	Module 4: Testing of Decision Points
8	**Coverage:** Checklist **Technique:** Syntactic Test Technique Use Case Test Technique	TMap NEXTR Test Engineer	Module 5: Testing With Checklists
9	**Technique:** Data Cycle Test Real Life Test	TMap NEXTR Test Engineer	Module 6: Testing Data Lifecycle Load and stress
10	Exploratory Test Technique Error Guessing Test Technique Defect Management	TMap NEXTR Test Engineer	Module 7: Error Guessing Exploratory Testing and Execution

Additional modules on TMAP are as below:

Sr. No	Topic	Module
1	Master Test Plan	Master Test Plan
2	Product Risk Analysis	Product Risk Analysis
3	Test Strategy	Test Strategy
4	Establishing the assignment	Establishing the Assignment
5	Estimation and Planning	Estimation and Planning