Indian Institute of Technology Guwahati

CS243 : Software Engeneering Lab

Under the guidance of : Prof. Samit Bhattacharya

Project 1 : An app to detect student activity and alert generation for the instructor

Black Box Testing Report

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1. Introduction

1.1 Purpose

This black box testing is intended to check the overall functioning of the application and report the deviations from ideal behavior by using different test cases.

1.2 References

For references, Software Requirement Specification and Design Document of the project have been referred.

2. Testing Process

2.1 Process Description

System Level testing has been done. Test Cases have been made considering the problem statement in mind. Equivalence classes have been designed covering all the cases of orientation, proximity and shaking/movement values. Following are the steps followed for black box testing :

- Equivalence classes were designed considering all the factors and exhausting all the cases which should generate alert and which should not.
- Test cases for each equivalence class were designed.
- Test cases for boundary cases were designed.
- Ideal result for each test case simulated.
- Those test cases were fed into our actual application and the behavior of the application was noted.
- Finally, the otained result and ideal results were compared.
- Follow up report documented.

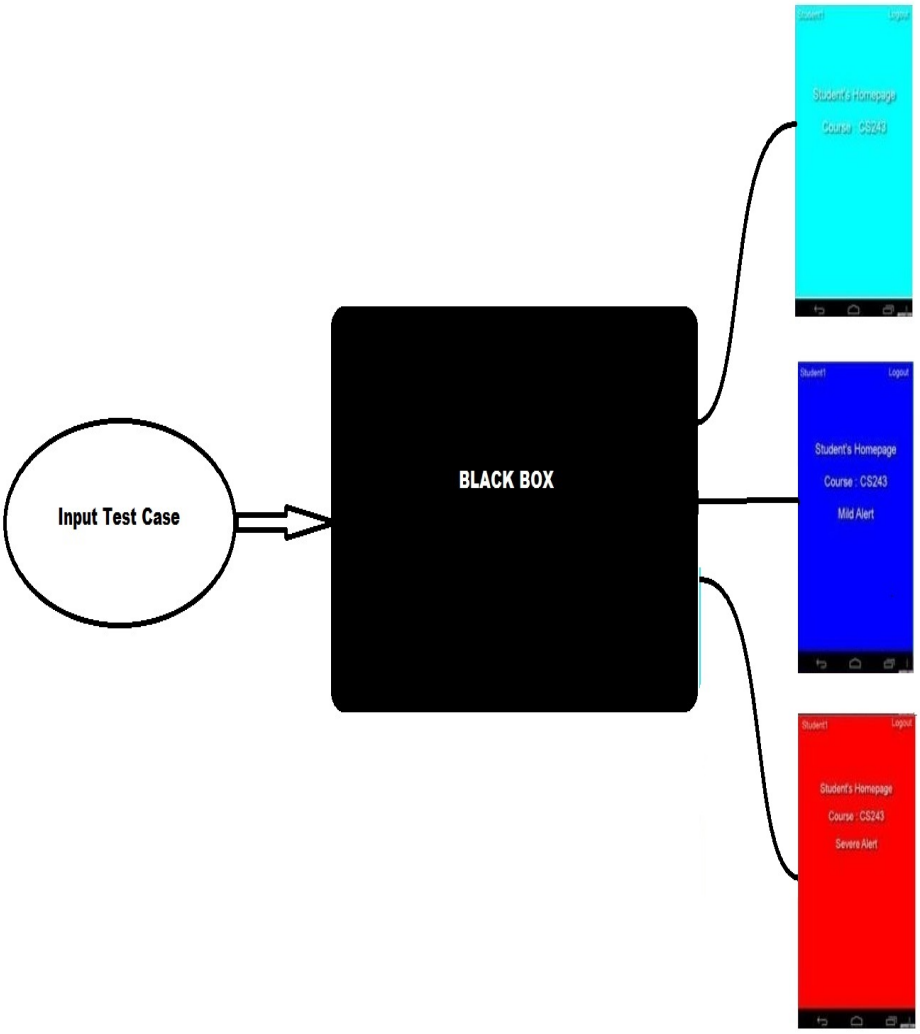

Figure 1: Black-Box Testing

2.2 Testing Report

In the following table , 'd' stands for distance between user and app, 'o' stands for absolute value of orientation of the app and 'm' stands for numbers of movements/shakes per minute,'t' stands for time span, 'NA' stands for No Alert , 'MA' stands for Mild Alert and 'SA' stands for severe alert.

Equivalence Class Partitioning

S.No.	Equivalence Class Description	Test case	Expected Result	Actual Result
1	[20cm <= d <= 40cm]	d = 30cm	NA	NA
2	[d < 20cm or d > 40cm], [3sec <= t <= 6sec]	d = 10cm , t = 5 sec	MA	NA
3	[d < 20cm or d > 40cm], [t > 6sec]	d = 5cm , t = 10 sec	SA	NA
4	[30deg <= o <= 60deg]	o = 45deg	NA	NA
5	[o < 30deg or o > 60deg], [5sec <= t <= 10sec]	o = 75deg , t = 7sec	MA	MA
6	[o < 30deg or o > 60deg], t > 10sec]	o = 75deg , t = 7sec	SA	SA
7	[m <= 2]	m = 1	NA	NA
8	[2 < m <= 4]	m = 3	MA	NA
9	[m > 4]	m = 6	SA	SA
10	t < 3sec	t = 2sec	NA	NA

Boundary Cases

S. No.	Boundary Test Case	Expected Result	Actual Result
1	m = 2	NA	NA
2	m = 4	MA	MA

2.3 Inferences

- As can be seen from the equivalence class partitioning table, there are a few classes of test cases which are showing deviations from ideal behavior.
- Checking for strong boundary conditions for orientation and proximity was practically very difficult.