QUALITY MANAGEMENT PLAN FOR REJUVENATING JAL MAHAL

BY

GROUP – 2

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Note: Quality Plan is prepared in MS Project and is attached as a separate file along with this attachment.

BALANCED SCORE CARD

Balanced Score Card

A. A balanced scorecard is a performance metric used to identify, improve, and control a business's various functions and resulting outcomes.

B. It was first introduced in 1992 by David Norton and Robert Kaplan, who took previous metric performance measures and adapted them to include nonfinancial information.

C. The balanced scorecard involves measuring four main aspects of a business: learning and growth, business processes, customers, and finance.

4 Pillars of Balanced Score Card

1. **Financial** - E.g. Sales, Expenditure, Income used to understand financial performance.

2. **Customer –** Collected to gauge customer satisfaction with quality, price and availability of products or services.

3. **Process** – Evaluated by investigating how well products are manufactures / projects are executed. Operational management is analyzed to track any gaps, delays, bottlenecks, shortages, or waste

4. **Learning and Growth** - analyzed through the investigation of training and knowledge resources.

Objective	KPI / Measure	Target	Initiative
Ensure desired profitability	Ensure proper budgeting and effective negotiation	To ensure at least 25% operational profit	Regular monitoring of project progress and mitigate risks
Avoid price hike of materials	Effective negotiation with partners	To reduce effect of price hike by at least 50%	Sign up rate contract with party
Ensure effective utilization of resources	Ensure none of the resources are lying idle	To ensure idle resource cost is 0	Regular reviewing project progress and take corrective action as appropriate

Objective	KPI / Measure	Target	Initiative
Avoid any rework in the project	Ensure proper scheduling of project	Cost of rework should be 0	Regular progress monitoring in terms of planned vs actual
Avoid delay in the project	Ensure that critical path is not shifted anyway	Cost overrun should be within 5% of budgeted cost	Regular review and mobilize additional manpower judgementally
Plantation of trees around main lake	Ensure environmental standards are followed	500 tress should be planted as planned	Environmental audit to be done in order to ensure the same

Financial

For understanding Financial Performance

Vision and Strategy

Process (Internal)

Evaluated by investigating how well project is executed

Customer

To gauge customer satisfaction with quality, price and availability of services

Learning and Growth

Analyzed through investigation of training and knowledge resources

Objective	KPI / Measure	Target	Initiative
Increase customer satisfaction	Increase footfall of domestic and international tourist	Domestic footfall to grow by 70% International footfall to grow by 20%	Ensure timely completion of project
Increase customer experience	Enhance Rajasthan Handicrafts industry	Rajasthan Handicrafts business to grow by 40%	Complete the project on time, within budget by maintaining quality standards
Increase customer loyalty	Repeat project from Rajasthan Government	Rajasthan Government to award similar project within next 6 months	Complete the project on time, within budget by maintaining quality standards

Objective	KPI / Measure	Target	Initiative
Exposure to WHO standards	Water quality to sustain marine life	Ensure 100% fish species are alive	Ensure quality standards as per WHO guideline
Employee Growth	Recognition by Govt, of Rajasthan in terms of performance certificate to key performers	At least 10% of the workforce should be recognized	Complete the project on time, within budget by maintaining quality standards
Exposure to a new technology (CV)	Lake cleaning done by this technology	Ensure that at least 5 officials are trained in this technology	Organize KT Session regularly

QUALITY PLAN

1. INTRODUCTION

This document describes the Quality Plan, Inspection Methodology and Test Matrix to be used for the project so that the final deliverables comply with the specifications and tender requirement.

2. PURPOSE

The purpose of this document is to detail out the Quality Plan. Inspection Methodology and Test Matrix to be adopted for ensuring the quality of the equipment and materials being supplied and defining the roles ofvarious agencies involved and the quality system to be adhered to.This document will outline the criteria of following:

- Plan Quality Management
- Assure Quality
- Control Quality
- Improve Quality

3. SCOPE

This document is applicable for:

- Inspection of Procurement of all equipment and material along with inspection of deliverable before handing over to customer.
- Project acceptance criteria
- Internal Standards to be followed

4. REFERENCES

Tender Document

5. DEFINITIONS

5.1 OWNER/CUSTOMER

Owner shall mean the project owner Rajasthan Government

5.2 Package CONTRACTOR.

Package CONTRACTOR shall mean the Project company whose scope includes Engineering, Procurement, Construction and Commissioning of the Unit / Facilities / System on Lump Sum basis, covered under the specified scope of work as per the Contract document.

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5.3 SUPPLIER

Supplier means any party supplying any of the equipment, material, products and services to the Package Contractor.

6. PLAN QUALITY MANAGEMENT:

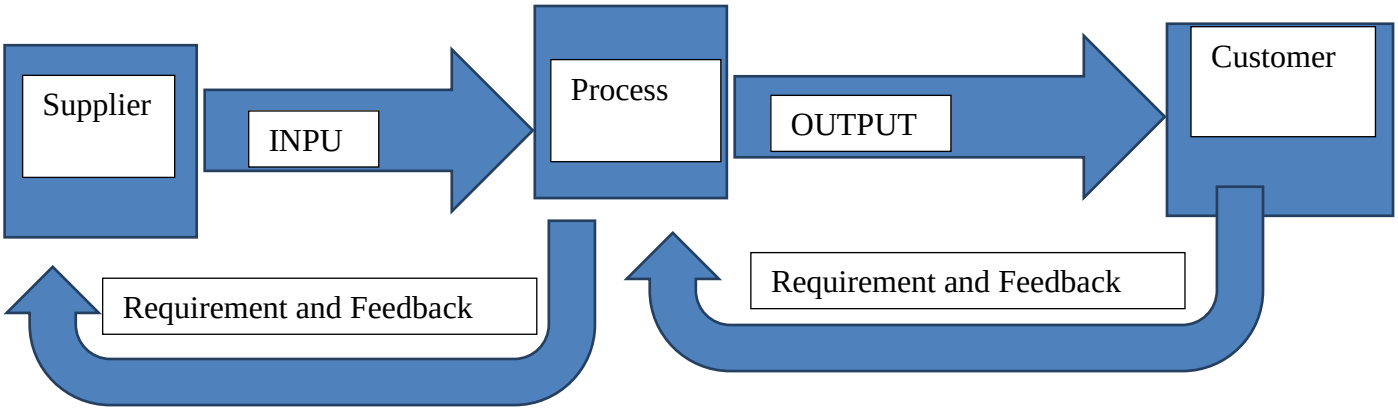
It is the process of identifying quality requirements and standards to be followed for the project and the deliverables. Following documents will be prepared in the beginning:

6.1 Quality Management Plan including Quality Assurance Plan
6.2 Quality Matrix

Quality Management Plan including Quality Assurance Plan

SIPOC Model:

SUPPLIERS	INPUTS	PROCESS	OUTPUT	CUSTOMER
Fountain Supplier	Prototype	Quality Check and validation	Fountain	Rajasthan Government
Fish Supplier	Fish sample	Quality Check and validation	Fish Species	
Sampling Supplier	Sampling sample	Quality Check and validation	Sampling	
Chemical for lake cleaning supplier	Chemical spec	Quality Check and validation	Chemicals	



Project Deliverables

1. Construction of a channel to divert the city drain
2. Increasing aquatic life to lake via scientific injection of new fish species
3. 4 Bubblers/fountain in the lake
4. Water quality to sustain marine life as per WHO standards
5. Developing nesting islands

Success / Acceptance Criteria

1.Biological oxygen demand (BOD) of lake less than 15
2. Completion of drain channel
3. Successful running of 4 fountains
4. Surviving fish species (at least 10)
5. Plantation of 500 tress around the main lake area
6. Developed nesting island

QUALITY ASSURANCE PLAN (QAP) / INSPECTION AND TEST PLAN (ITP)

It is a document generated by the supplier with complete listing of various inspection stages, tests, material certification requirements and parties involved with their respective roles in inspection; indicating the requirements of Hold (H), Witness (W) Inspection, and Review (R) of Quality control documents / records for an item. QAP and ITP are considered synonymous

7. Manage Quality

An effective Quality Assurance System to be ensured so that all equipment and material supplied for the Project meet the required Quality standards and specifications.

Following Documents will be maintained:

- Quality Assurance Manual including Organogram and standard Quality Plan for supply of equipment and material from the Supplier.
- Procedure for Coordination with Supplier and OWNER.
- Procedure for flow of documents, information.
- Non-conformity control in case of deviation from specifications
- Procedure for Expediting and Monitoring the manufacturing and delivery of all items.
- Final Clearance Procedure for equipment and material for dispatch from
- Standard Formats for Inspection reports, inspection certificates, expediting, status & monitoring of orders etc.
- Supplier shall necessarily appoint at their cost, a reputedThird Party Inspection Agencies for the complete contract.

QUALITY CONTROL RECORDS

These are the documents, which demonstrate achievement of required Quality and effective operation of quality systems during manufacturing of an item. These include following as a minimum:

1. Material Test Certificates
2. Visual and dimensional inspection records
3. Stage Inspection Records / Test Reports
4. Procedure Qualification Records
5. Quality Assurance Plan and relevant records.
6. Any other test reports as specified in relevant codes / specifications.

AUDITS OF CONTRACTORS QUALITY SYSTEM:

Periodic audit of the Quality System of the company along with of supplier at frequent interval to be conducted from the date of award of Contract. Such audits may include visits to supplier works. In the event of any inadequacies / non-conformities in the Quality System noticed by QC team, the Quality manager shall take immediate corrective measures and submit documentary evidence for satisfactory implementation of the corrective measures. Noncompliance to the system will lead to rejection of the material.

8. Control Quality:

Following processes can be adopted to control and monitor quality.

8.1 Check List
8.2 Check Sheet
8.3 Cause ad effect Diagram
8.4 Control Charts
8.5 Quality metrics
8.6 Inspection
8.7 Testing

Quality plan for rejuvenating JAL MAHAL project is attached herewith as a separate file prepared in MS Project.

TEST MATRIX

Methodology:

The following major milestones have been considered for preparing Test Matrix in the project –

1. Construction of Channel to divert the city Drain
2. Dredging (mud cleaning)
3. Developing Nesting Islands
4. Lake Cleaning through biological treatment
5. Installation and commissioning of Fountains in the lake
6. Increasing Aquatic life to lake via scientific injection of new fish species
7. Plantation of Trees

For each of the above mentioned major milestones, key activities for testing have been identified and accordingly, test cases have been identified based on which the testing metric have been prepared.

A. Construction of channel to divert the city drain

S.No	Testing Metric- Construction of Channel to divert the city Drain	Data retrieved during test case development & execution
1	Total No of Requirements	7
2	Average no of test cases written per requirement	10
3	Total no. of Test cases written for all requirement	70
4	Total no. of Test Cases executed	50
5	No of test cases Passed	40
6	No of Test Cases failed	5
7	No of Test Cases Blocked	5
8	No of Test Cases un executed	20
9	Total No of Defects identified	10
10	High Defects Count	3
11	Medium Defects Counts	3
12	Low Defects Count	4

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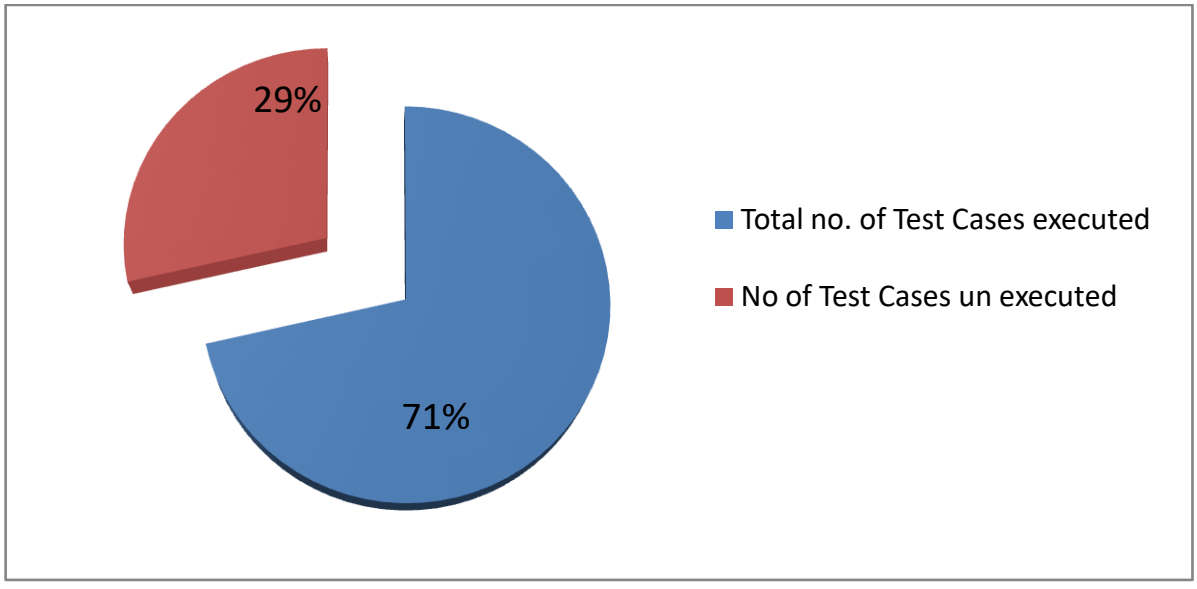

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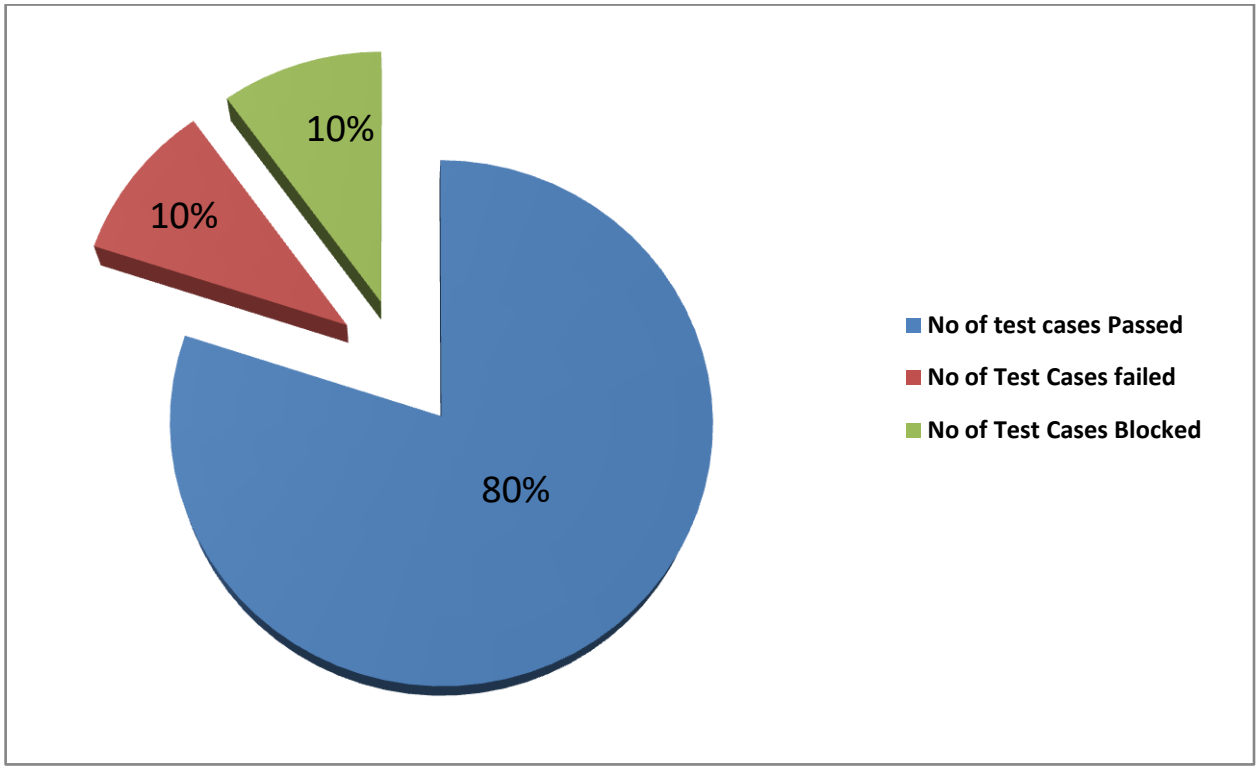

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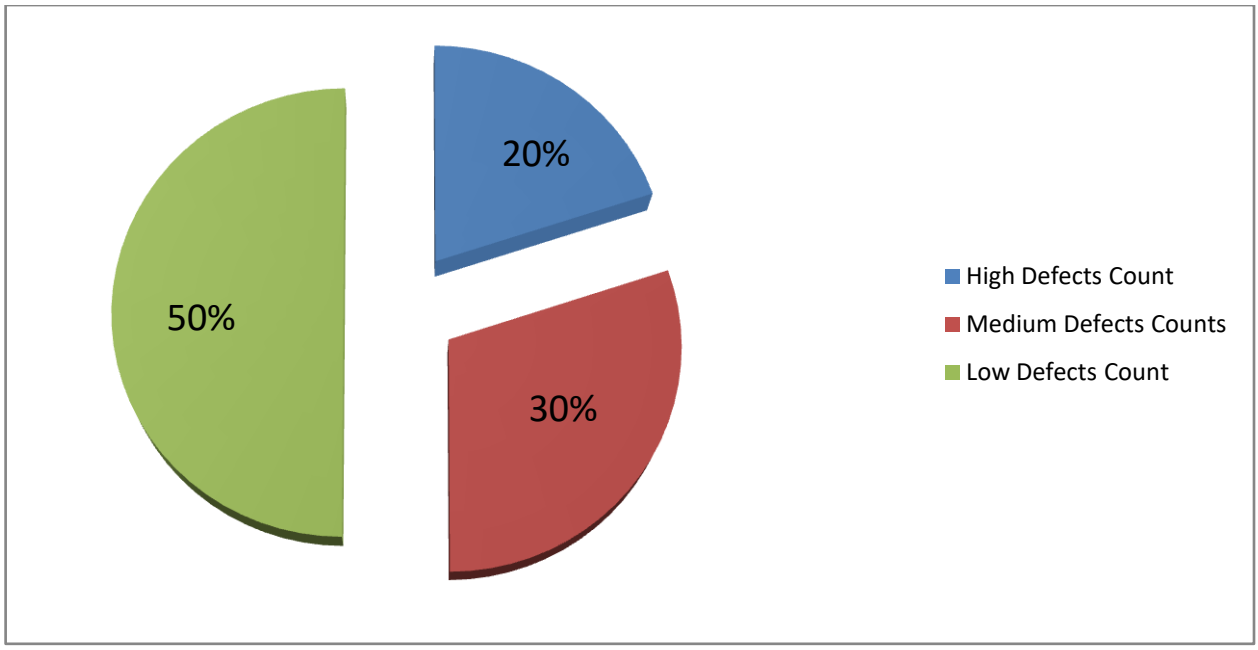

B. Dredging (Mud Cleaning)

S.No	Testing Metric- Dredging (mud cleaning)	Data retrieved during test case development & execution
1	Total No of Requirements	2
2	Avg nof test cases written per requirement	10
3	Total no. of Test cases written for all requirement	20
4	Total no. of Test Cases executed	15
5	No of test cases Passed	10
6	No of Test Cases failed	3
7	No of Test Cases Blocked	2
8	No of Test Cases un executed	5
9	Total No of Defects identified	6
10	High Defects Count	3
11	Medium Defects Counts	2
12	Low Defects Count	1

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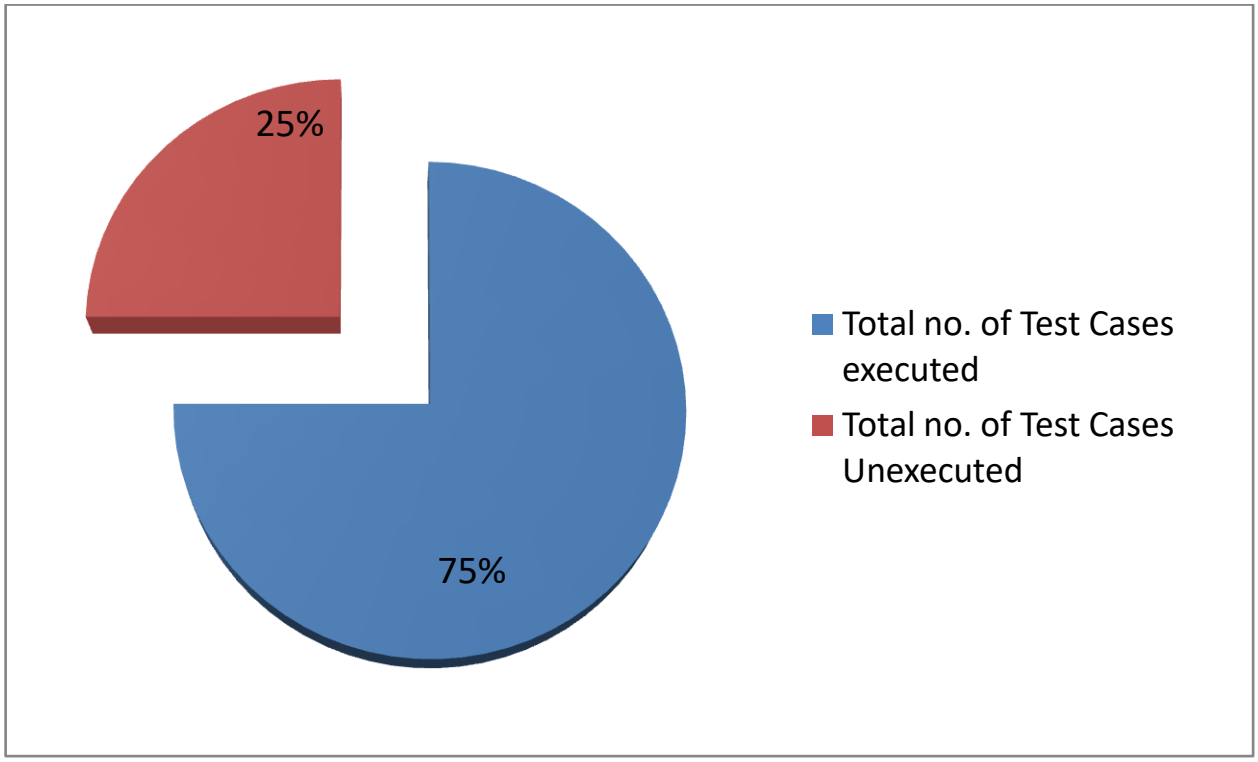

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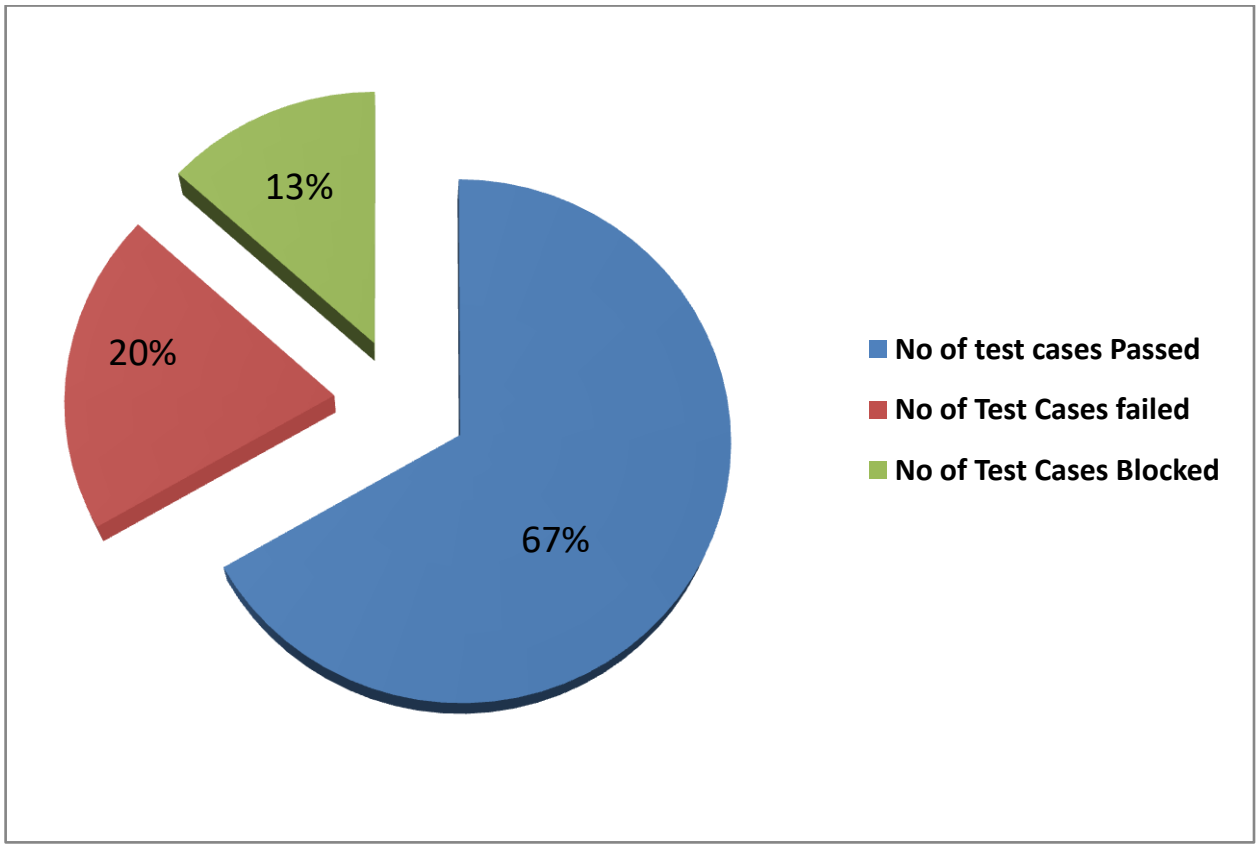

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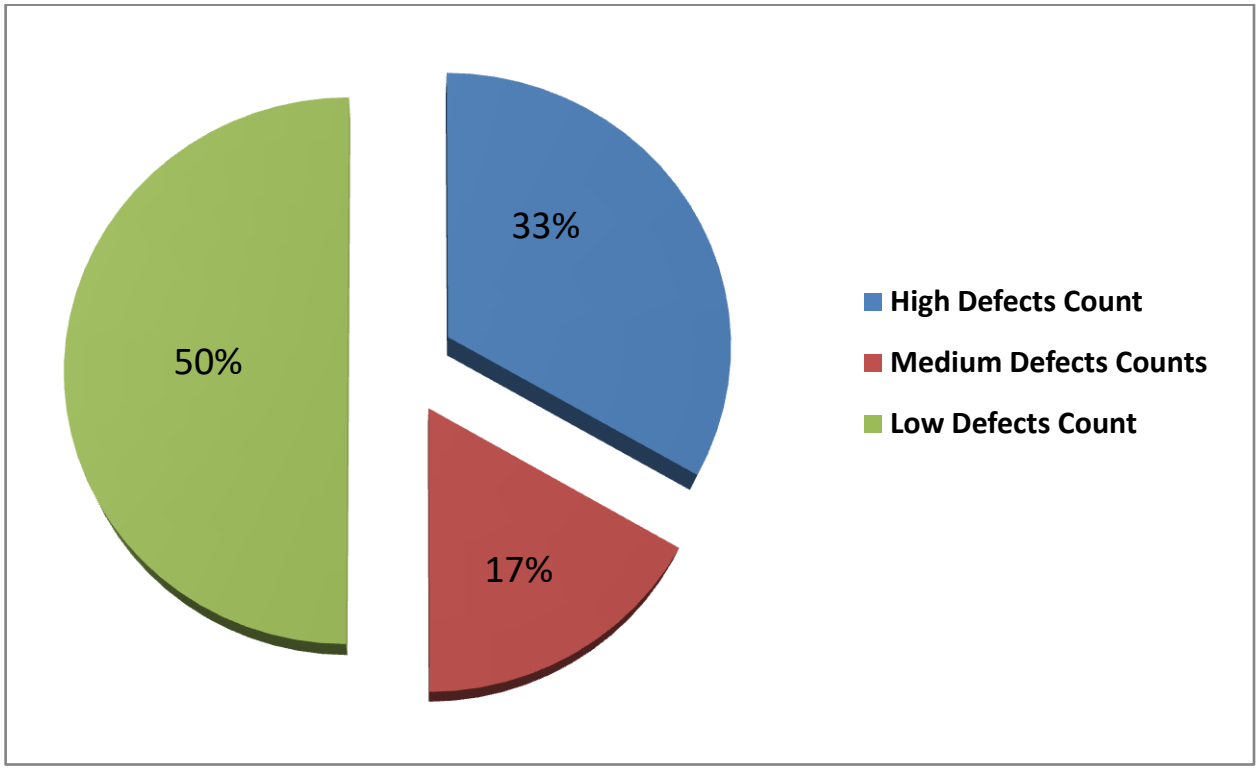

C. Developing Nesting Island

S.No	Testing Metric- Developing Nesting Islands	Data retrieved during test case development & execution
1	Total No of Requirements	1
2	Avg nof test cases written per requirement	20
3	Total no. of Test cases written for all requirement	20
4	Total no. of Test Cases executed	16
5	No of test cases Passed	12
6	No of Test Cases failed	2
7	No of Test Cases Blocked	2
8	No of Test Cases un executed	4
9	Total No of Defects identified	5
10	High Defects Count	1
11	Medium Defects Counts	2
12	Low Defects Count	2

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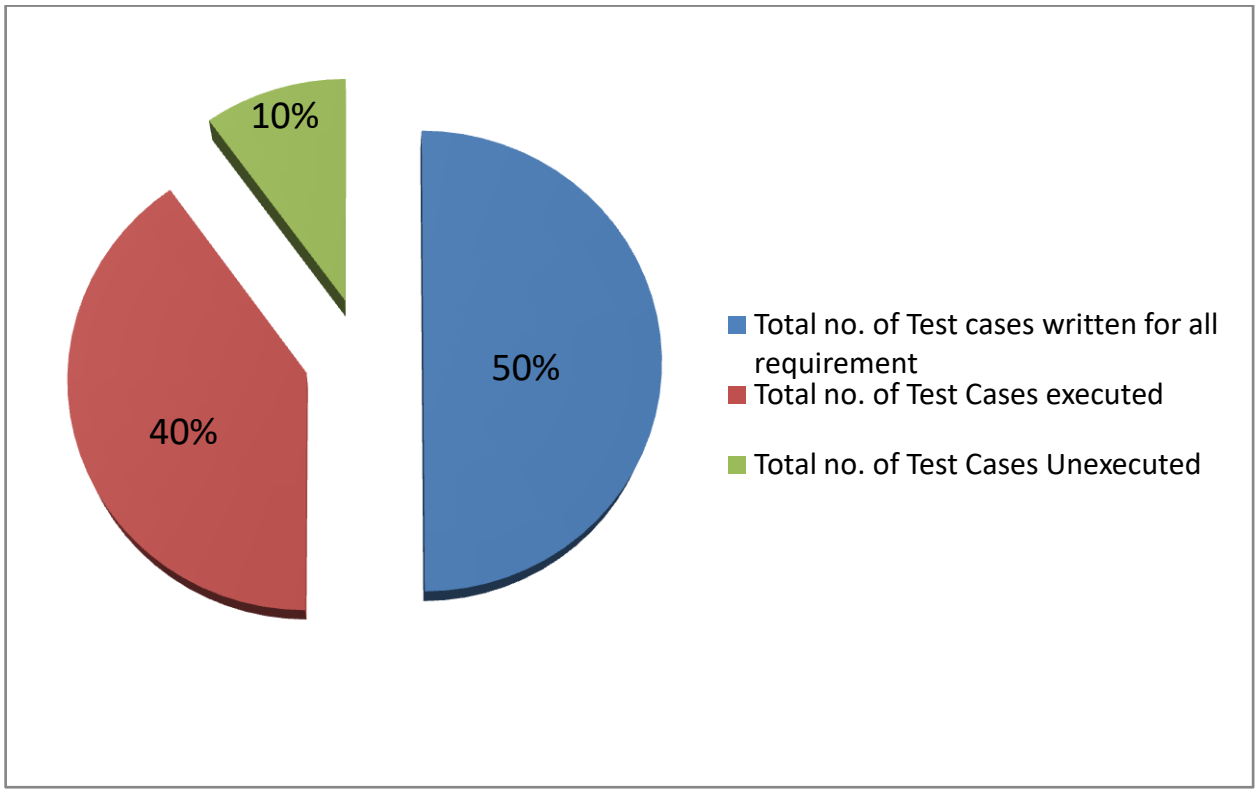

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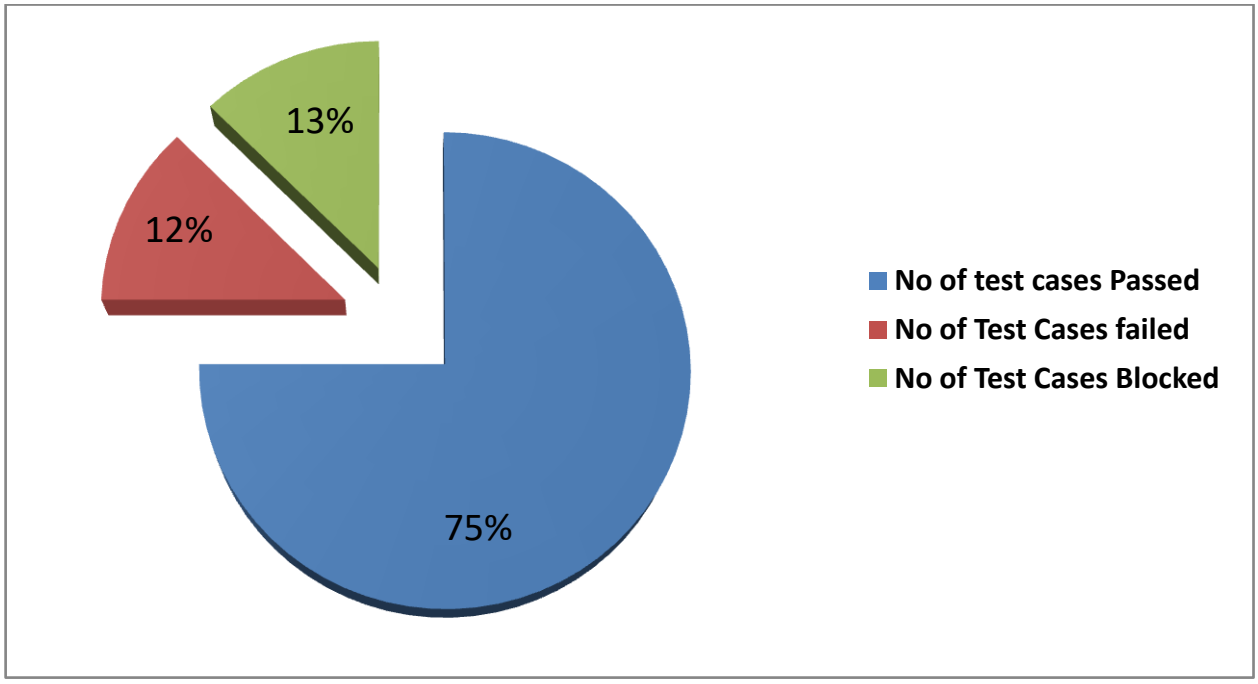

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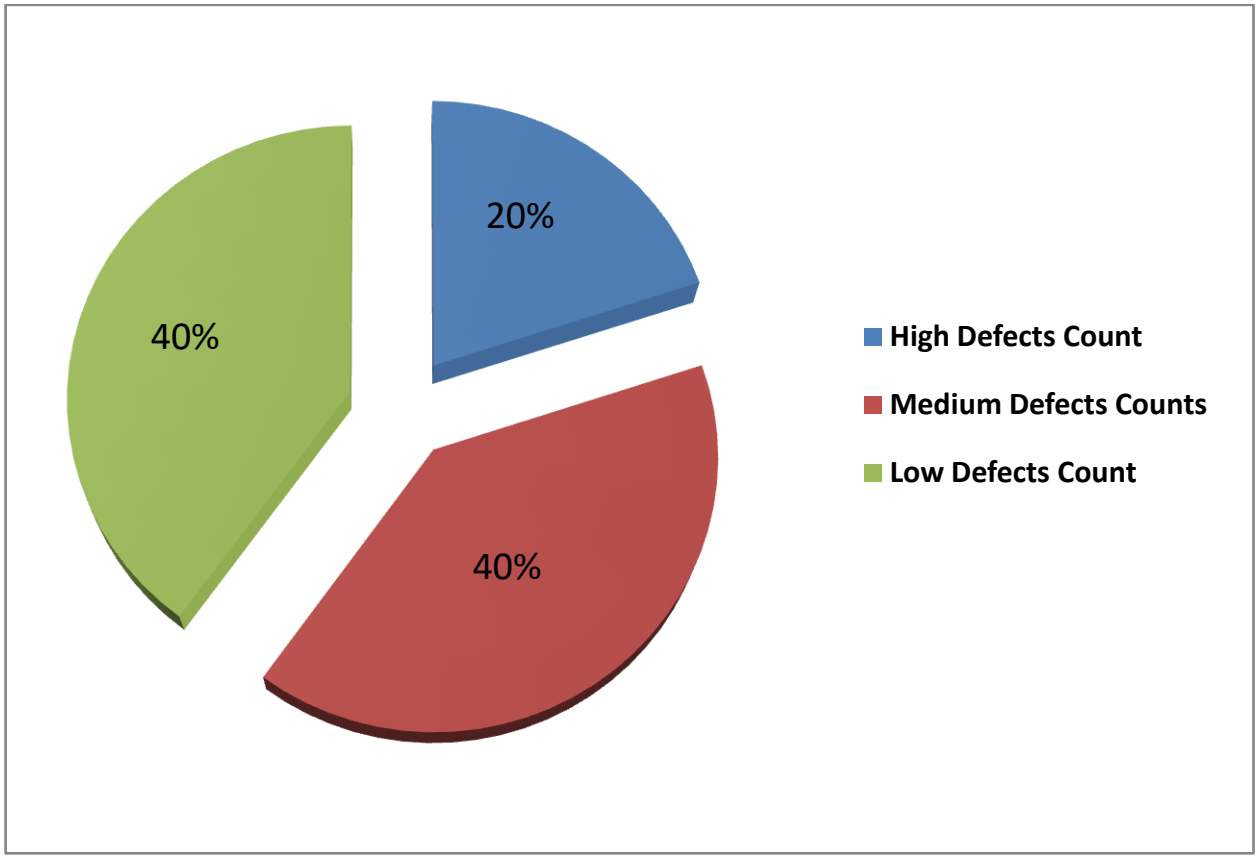

D. Developing Nesting Island

S.No	Testing Metric- Lake Cleaning through biological treatment	Data retrieved during test case development & execution
1	Total No of Requirements	2
2	Avg no of test cases written per requirement	15
3	Total no. of Test cases written for all requirement	30
4	Total no. of Test Cases executed	25
5	No of test cases Passed	22
6	No of Test Cases failed	1
7	No of Test Cases Blocked	2
8	No of Test Cases un executed	5
9	Total No of Defects identified	10
10	High Defects Count	2
11	Medium Defects Counts	3
12	Low Defects Count	5

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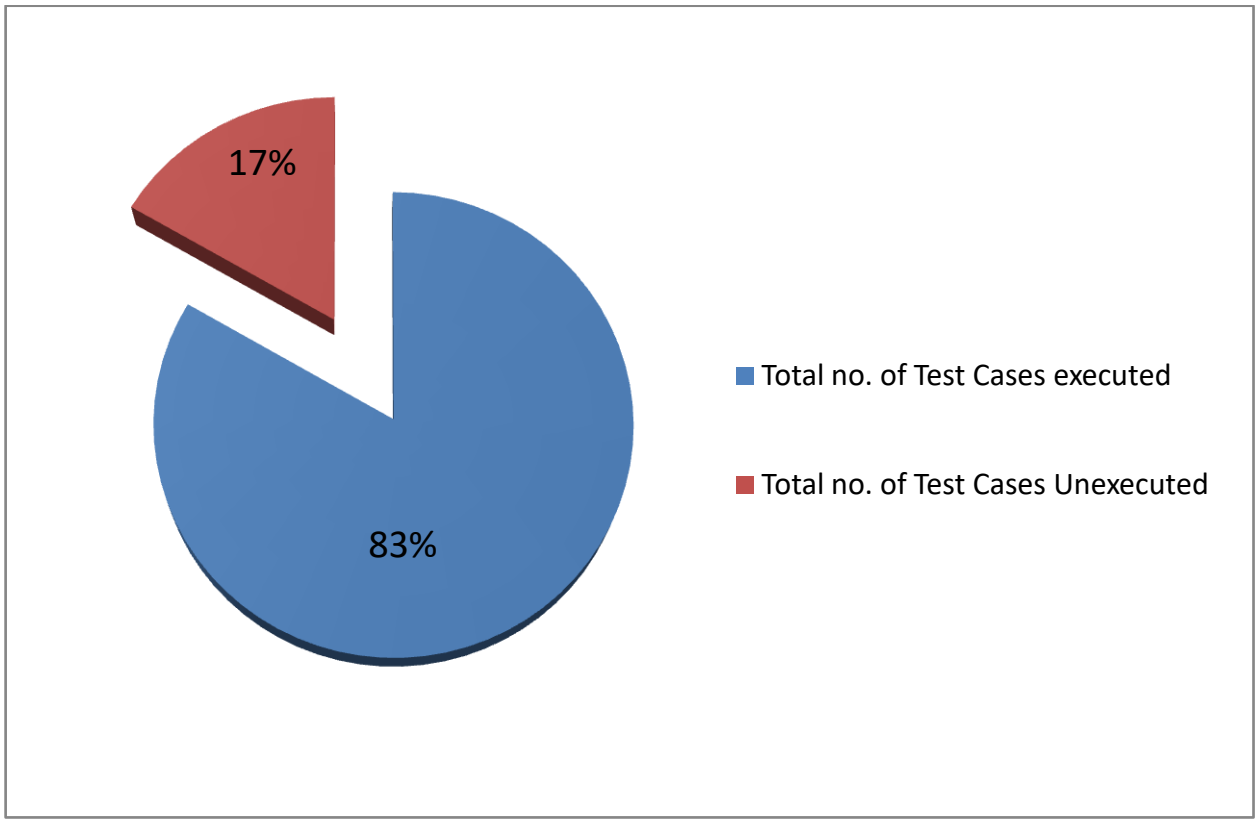

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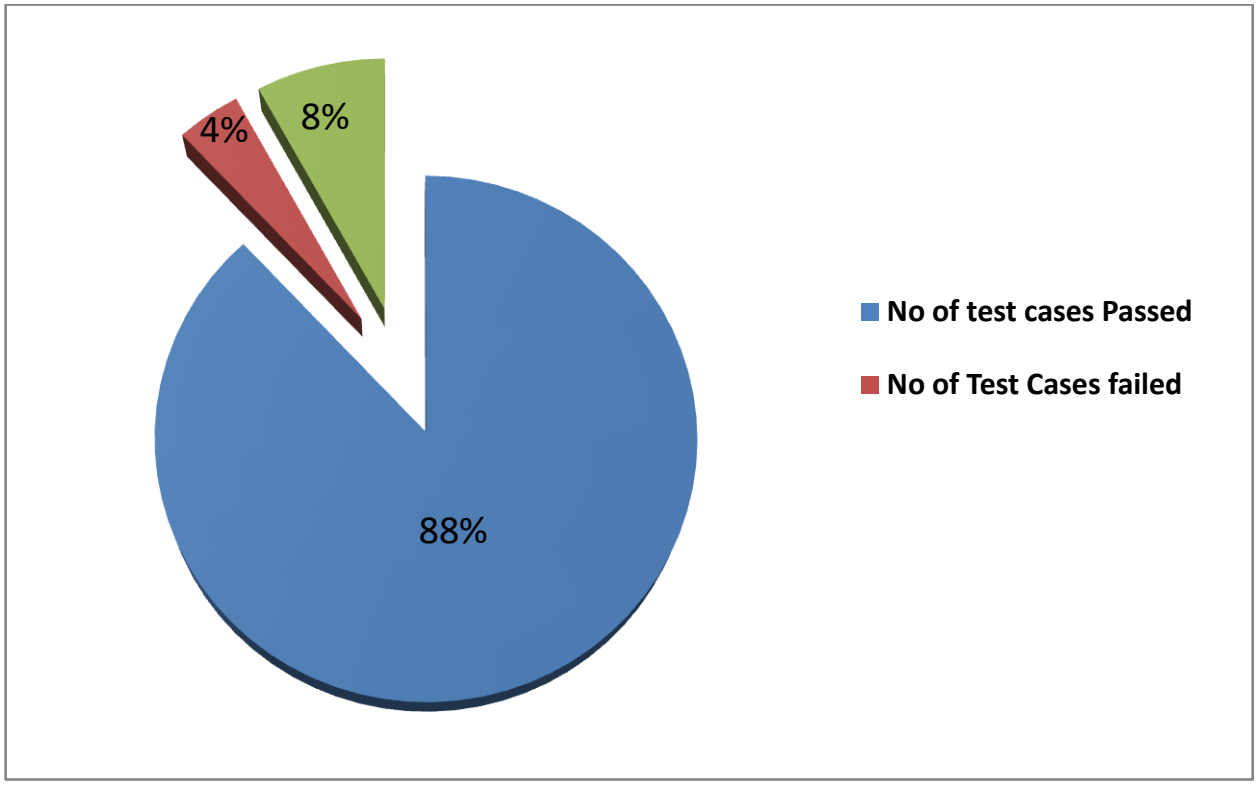

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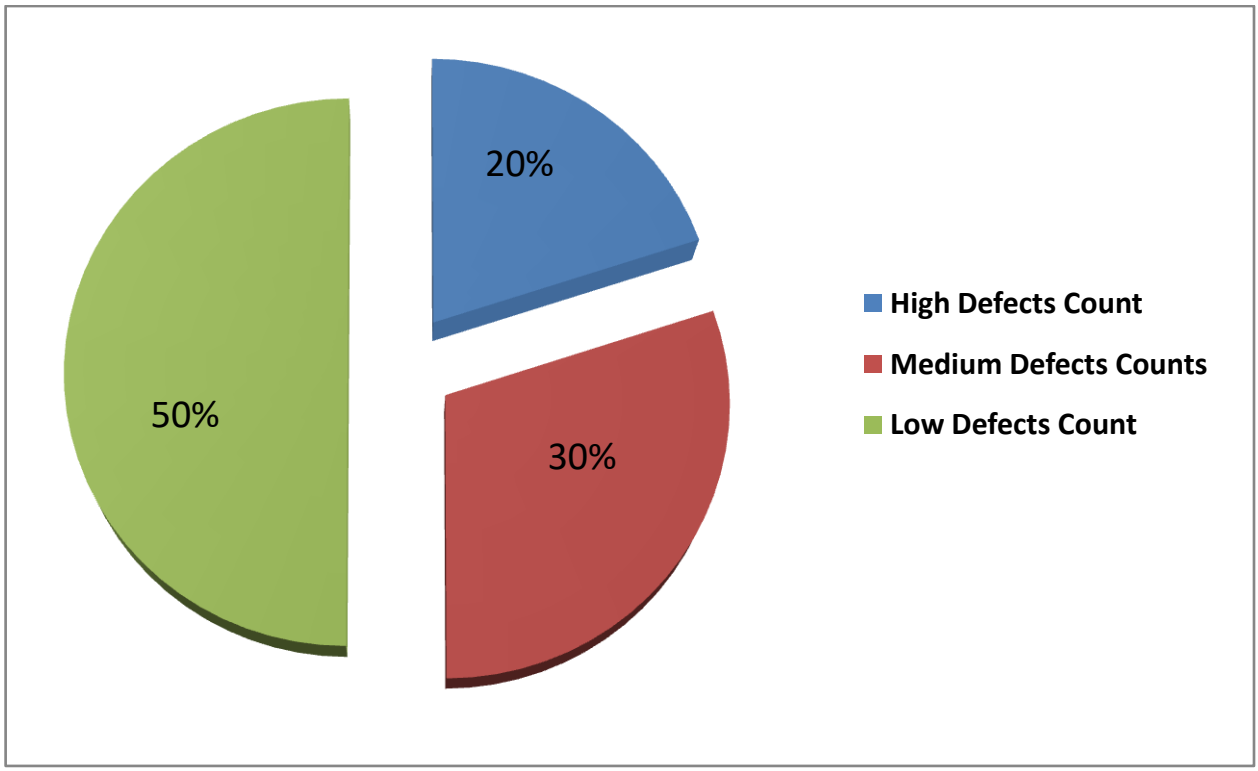

E. FOUNTAIN ON LAKE

S.No	Testing Metric- Installation and commissioning of Fountains in the lake	Data retrieved during test case development & execution
1	Total No of Requirements	3
2	Avg no of test cases written per requirement	15
3	Total no. of Test cases written for all requirement	45
4	Total no. of Test Cases executed	40
5	No of test cases Passed	36
6	No of Test Cases failed	1
7	No of Test Cases Blocked	3
8	No of Test Cases un executed	5
9	Total No of Defects identified	5
10	High Defects Count	0
11	Medium Defects Counts	2
12	Low Defects Count	3

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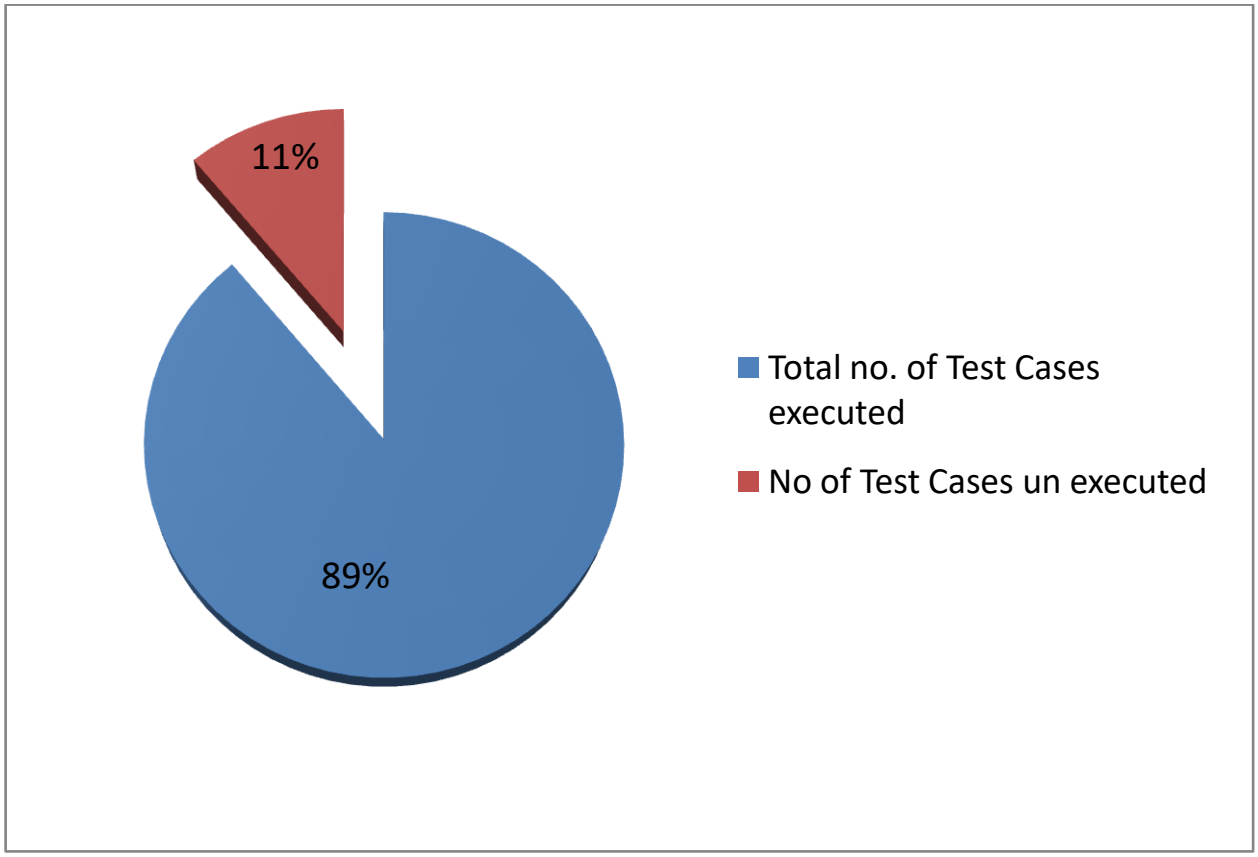

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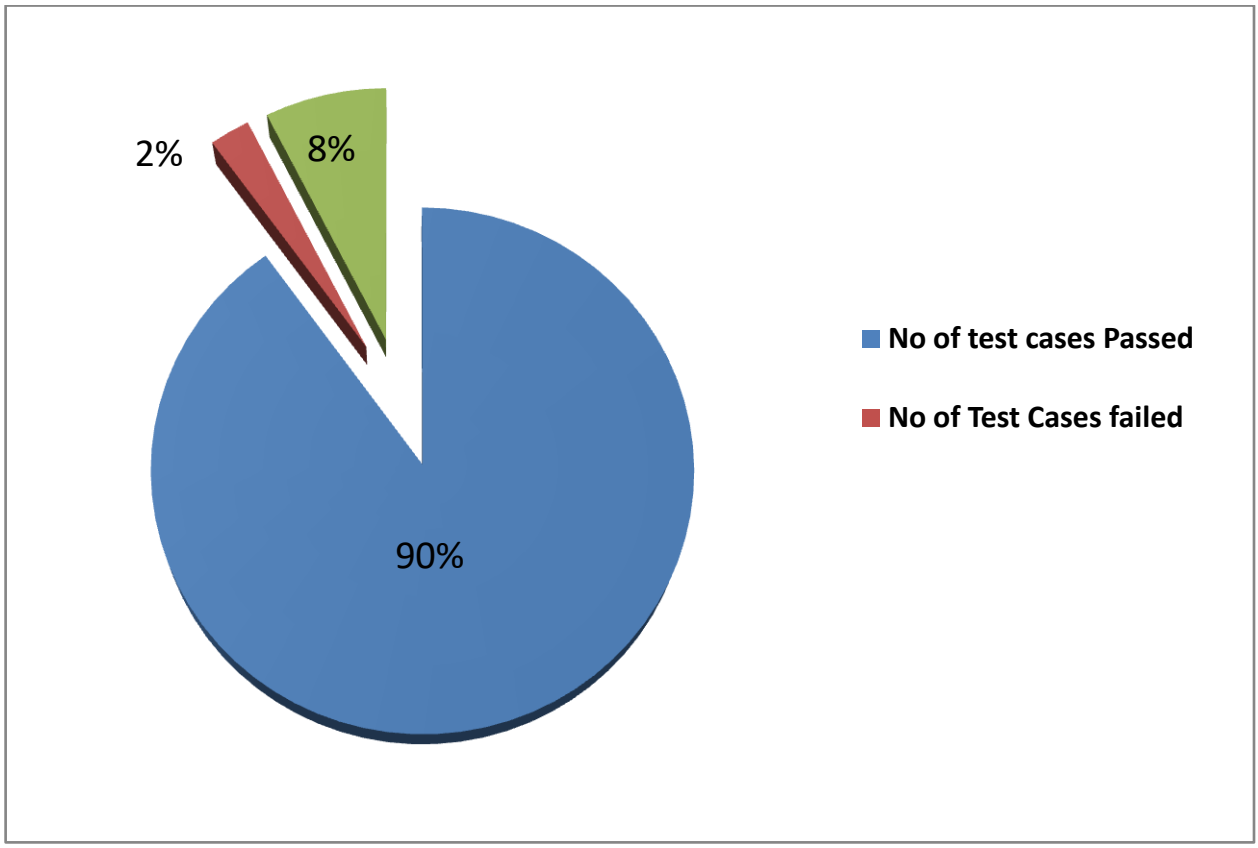

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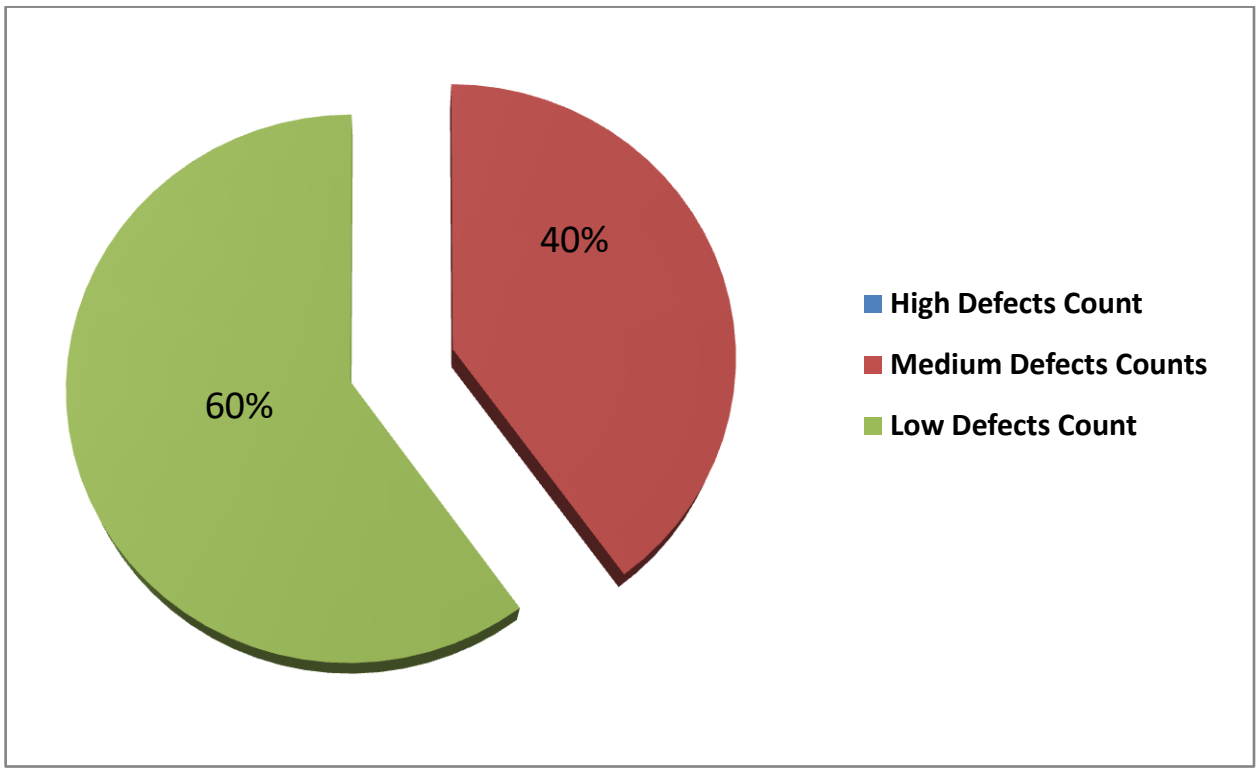
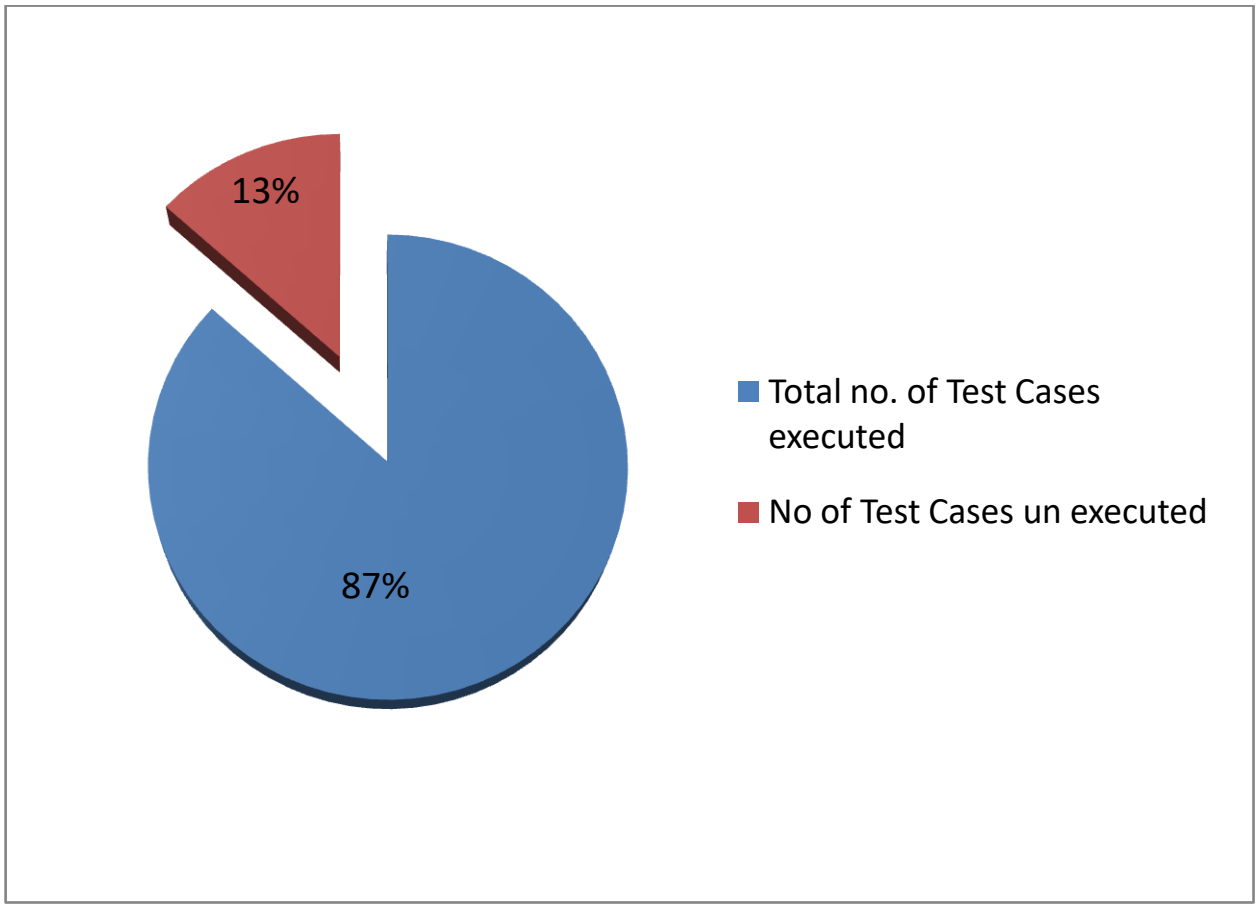


F. FOUNTAIN ON LAKE

S.No	Testing Metric- Increasing Aquatic life to lake via scientific injection of new fish species	Data retrieved during test case development & execution
1	Total No of Requirements	3
2	Avg nof test cases written per requirement	20
3	Total no. of Test cases written for all requirement	60
4	Total no. of Test Cases executed	52
5	No of test cases Passed	45
6	No of Test Cases failed	4
7	No of Test Cases Blocked	3
8	No of Test Cases un executed	8
9	Total No of Defects identified	12
10	High Defects Count	2
11	Medium Defects Counts	4
12	Low Defects Count	6

Test Case Analysis Data (Executed vs Unexecuted)



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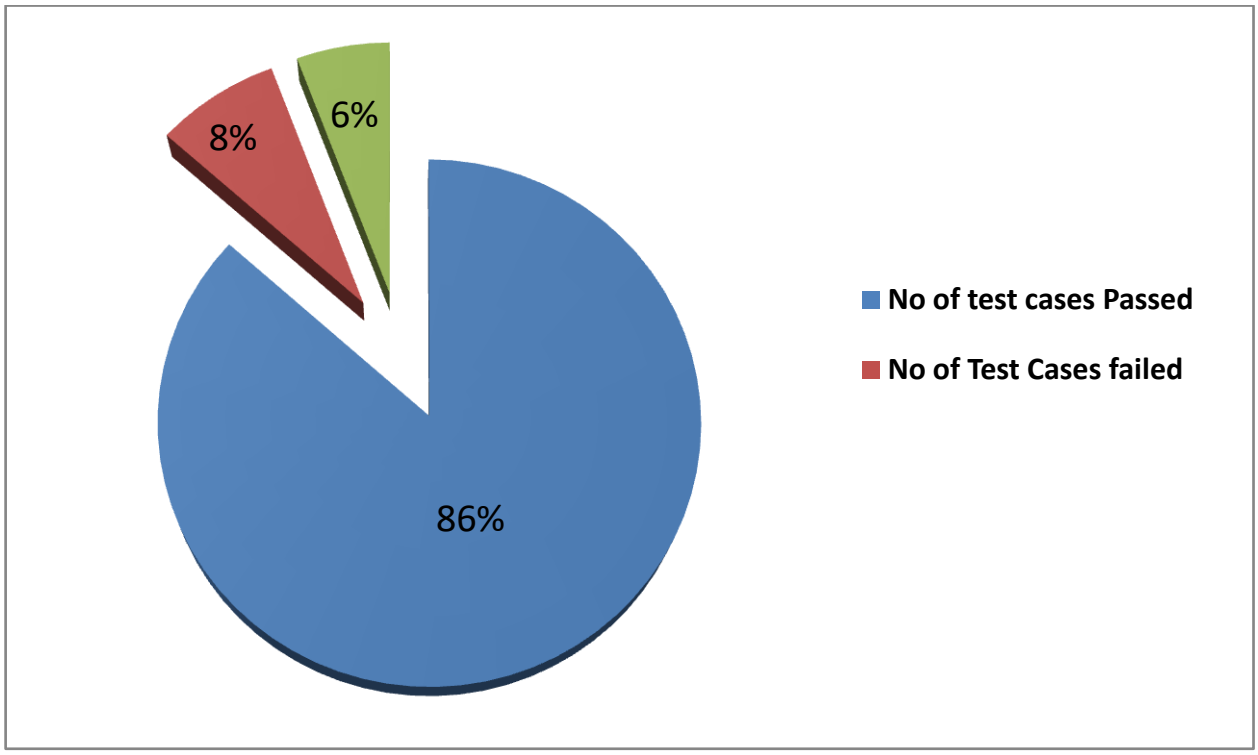

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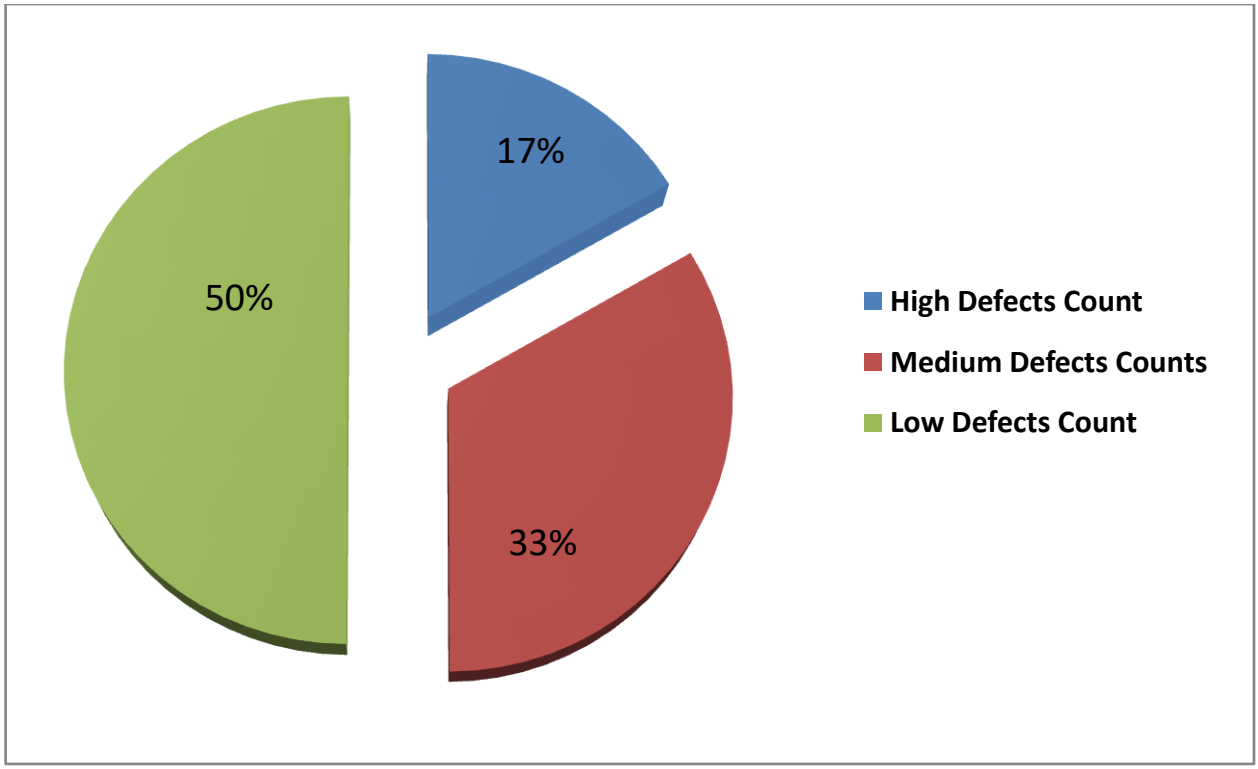

G. PLANTATION OF TREES

S.No	Testing Metric- Plantation of Trees	Data retrieved during test case development & execution
1	Total No of Requirements	2
2	Avg no of test cases written per requirement	20
3	Total no. of Test cases written for all requirement	40
4	Total no. of Test Cases executed	35
5	No of test cases Passed	30
6	No of Test Cases failed	2
7	No of Test Cases Blocked	3
8	No of Test Cases un executed	5
9	Total No of Defects identified	6
10	High Defects Count	1
11	Medium Defects Counts	2
12	Low Defects Count	3

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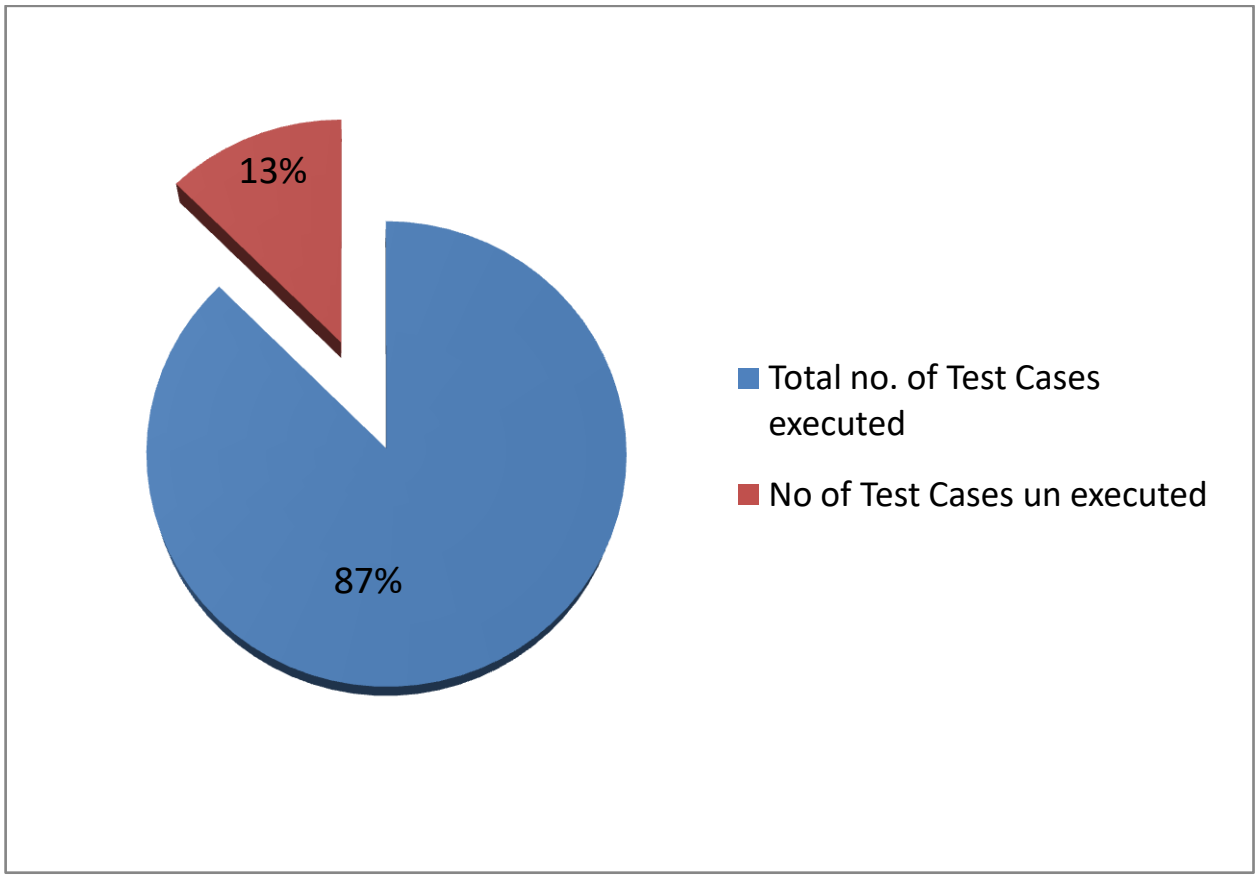

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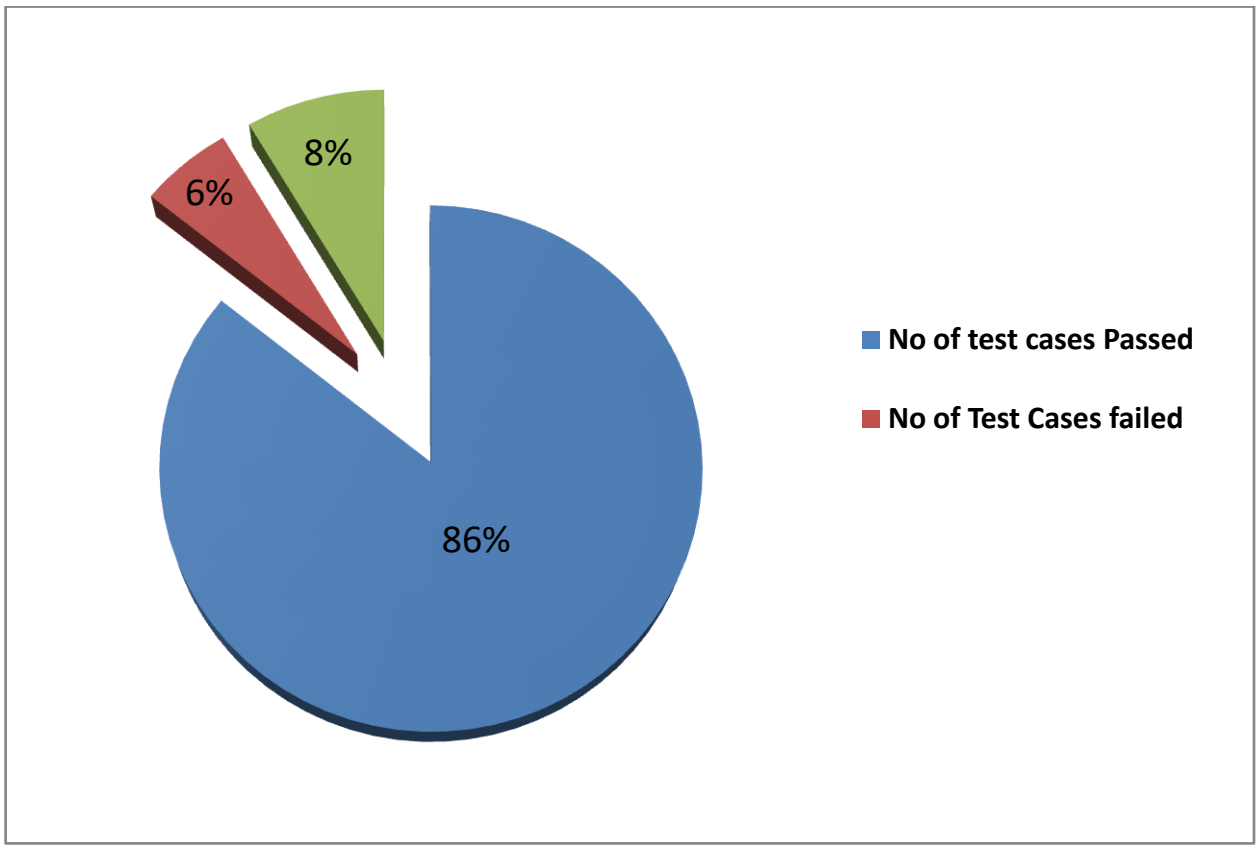

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