

# **Empowering India: Analysis of the Evolution of Union Budget Allocations for Sustainable Growth**

## **Performance Testing**

### **Introduction**

- Performance testing evaluates how efficiently the Union Budget Allocation Analysis System performs under different conditions.
- It ensures the system can process large volumes of historical budget data, generate reports quickly, and provide accurate insights without delays.

### **Objectives of Performance Testing**

- Measure system response time while loading large budget datasets.
- Evaluate processing speed for trend and comparative analysis.
- Ensure dashboards load efficiently in Tableau.
- Check system stability under high user access.
- Verify accuracy of computed results during heavy data operations.

### **Types of Performance Testing**

- Load Testing – Tests system behavior under expected user load.
- Stress Testing – Tests system beyond normal limits.
- Scalability Testing – Measures system capability when data size increases.
- Response Time Testing – Measures time taken to load datasets, generate charts, and produce reports.

### **Performance Metrics**

- Response Time (Seconds)
- Throughput (Data processed per second)
- CPU Usage
- Memory Utilization
- Data Processing Speed

- Dashboard Load Time

## Expected Results

- Fast data processing with minimal delay.
- Dashboard loading within acceptable time (2–5 seconds).
- Stable system performance under multiple users.
- Accurate trend analysis without data loss.
- Efficient handling of large historical datasets.

## Conclusion

- Performance testing ensures that the Union Budget Allocation Analysis System is reliable, scalable, and efficient.
- It supports policymakers in making informed decisions for sustainable growth.