### **Test Plan**

## **1. Objective**

The goal of this test plan is to ensure the quality, functionality, and reliability of the API that returns the word corresponding to a given positive number, limited to quadrillions.

API Endpoint: [Number Conversion API](https://www.dataaccess.com/webservicesserver/NumberConversion.wso?op=NumberToWords)

## **2. Scope**

### **Scope of Testing:**

1. **Functional Testing:**
   * Verify API functionality based on documentation.
   * Ensure correct number-to-word conversion.
   * Validate different input values, including edge cases.
2. **Data Validation Testing:**
   * Ensure correct response for valid and invalid inputs.
   * Test input boundaries and error handling.
3. **Error Handling Testing:**
   * Validate proper error messages and HTTP response codes.
   * Ensure API handles unexpected inputs gracefully
4. **Regression Testing:**
   * Ensure new updates do not affect existing functionality.
5. **Compatibility Testing:**
   * Test across different browsers and devices.
6. **Load & Stress Testing:**
   * Assess system stability under heavy loads.
7. **Documentation Review:**

* Validate API documentation accuracy and completeness.

## **3. Inclusions**

* **Valid Number Inputs:**
  + Single-digit numbers (e.g., 1, 5, 9)
  + Double-digit numbers (e.g., 10, 23, 99)
  + Large numbers (e.g., 1000, 1,000,000, quadrillions)
* **Boundary Value Testing:**
  + Minimum and maximum values within API limits.
* **Negative & Edge Cases:**
  + Negative numbers, decimals, alphanumeric values, special characters.
* **Concurrency Testing:**
  + Multiple users making simultaneous API requests.
* **Security & Performance Testing:**
  + Unauthorized access, encryption validation, API rate limits.

## **4. Test Environments**

### **Platforms:**

* **Windows 10:** Chrome, Firefox, Edge
* **Mac OS:** Safari
* **Android:** Chrome
* **iOS:** Safari

### **URLs:** <https://www.dataaccess.com/webservicesserver/NumberConversion.wso>

### **5. Defect Reporting Procedure**

* **Tool:** JIRA
* **Defect Triaging:**
  + Assign priority/severity levels.
  + Report to designated team members.
  + Track status updates and resolution times.
* **Roles:**
  + **Frontend POC:**
  + **Backend POC:**
  + **DevOps:**

## **6. Test Strategy**

* **Test Design Techniques:**
  + Equivalence Partitioning
  + Boundary Value Analysis
  + Decision Table Testing
  + State Transition Testing
  + Use Case Testing
* **Testing Phases:**
  + **Smoke Testing:** Verify critical functionalities.
  + **Sanity Testing:** Check bug fixes.
  + **Regression Testing:** Ensure updates don’t break existing features.
  + **Exploratory Testing:** Identify hidden defects.
  + **End-to-End Testing:** Validate real user scenarios.

## **7. Test Schedule**

| **Task** | **Estimated Duration** |
| --- | --- |
| Test Plan Creation | Sprint 1 |
| Test Case Writing | Sprint 1 |
| Test Execution | Sprint 2 |
| Report Submission | End of Sprint 2 |

## **8. Test Deliverables**

* Test Plan
* Test Scenarios
* Test Cases
* Test Execution Report
* Defect Report
* Test Summary Report

## **9. Entry & Exit Criteria**

### **Test Execution**

#### **Entry Criteria:**

* Test cases are approved.
* Application is ready for testing.

#### **Exit Criteria:**

* All test cases executed.
* Defects are logged and addressed.
* Test summary report prepared.

### **Test Closure**

#### **Entry Criteria:**

* All test cycles are complete.

#### **Exit Criteria:**

* Final test summary report is approved.

## **10. Tools**

* **JIRA:** Bug Tracking
* **Mind Map Tool:** Test Planning
* **Snipping Tool:** Screenshots
* **Word & Excel:** Documentation

## **12. Approvals**

* **Client Approvals Needed For:**
  + Test Plan
  + Test Scenarios
  + Test Cases
  + Final Reports
* **Testing Progress Depends on Timely Approvals.**