**Test Plan for DataFlex Web Service: ISBN Validation**

**1. Introduction**

The purpose of this test plan is to verify the functionality and correctness of the IsValidISBN10 operation provided by the DataFlex ISBN Web Service. This operation determines whether a given ISBN-10 number is valid based on checksum calculation.

**2. Scope**

* **In Scope:**
  + Functional testing of IsValidISBN10 operation via:
    - SOAP 1.1
    - SOAP 1.2
    - JSON
  + Valid and invalid ISBN-10 inputs
  + Handling of special cases like 'X' as the last digit
* **Out of Scope:**
  + ISBN-13 validation
  + Performance, load, and security testing

**3. Test Objectives**

* Verify that the IsValidISBN10 operation returns correct boolean results for:
  + Valid ISBN-10 numbers
  + Invalid ISBN-10 numbers
* Verify API response structure for SOAP 1.1, SOAP 1.2, and JSON
* Validate error handling for invalid inputs (length, characters, empty string)

**4. Assumptions**

* The service endpoint https://webservices.daehosting.com/services/isbnservice.wso is available and functional.
* No authentication is required.
* Boolean response will be true or false.

**5. Test Items**

* **Web Service Operation:** IsValidISBN10
* **Parameters:** sISBN (string)

**6. Test Environment**

* **Tools:** Postman / SOAP UI / Curl
* **Protocols Supported:** HTTP POST
* **Content Types:**
  + SOAP 1.1: text/xml; charset=utf-8
  + SOAP 1.2: application/soap+xml; charset=utf-8
  + JSON: application/json; charset=utf-8
* **Endpoint:** https://webservices.daehosting.com/services/isbnservice.wso

**7. Test Data**

| **Test Case ID** | **Test Data (sISBN)** | **Expected Result** |
| --- | --- | --- |
| TC001 | 0471958697 (Valid ISBN) | true |
| TC002 | 0471958699 (Invalid checksum) | false |
| TC003 | 0306406152 (Valid ISBN) | true |
| TC004 | 123456789X (Valid ISBN with X) | true |
| TC005 | 1234567890 (Invalid ISBN) | false |
| TC006 | 12345678 (Too short) | false |
| TC007 | ABCDEFGHIJ (Invalid characters) | false |
| TC008 | `` (Empty input) | false |
| TC009 | 12345678901 (Too long) | false |

**8. Test Scenarios & Cases**

**Scenario 1: Valid ISBN-10 input**

* **TC001, TC003, TC004**
* Verify correct response is true for valid ISBN numbers.

**Scenario 2: Invalid ISBN-10 input**

* **TC002, TC005**
* Verify correct response is false for incorrect checksum.

**Scenario 3: Edge cases and invalid formats**

* **TC006, TC007, TC008, TC009**
* Verify proper handling and return false.

**9. Test Execution Steps**

**For SOAP 1.1**

1. Create a SOAP 1.1 request with valid sISBN value.
2. Send HTTP POST request to the endpoint.
3. Verify:
   * HTTP status code = 200
   * Response XML structure matches:
   * <IsValidISBN10Result>true/false</IsValidISBN10Result>
4. Repeat for invalid inputs.

**For SOAP 1.2**

* Same steps as SOAP 1.1, but use application/soap+xml content type.

**For JSON**

1. Send a JSON payload:
2. {
3. "sISBN": "0471958697"
4. }
5. Verify:
   * HTTP status code = 200
   * Response is true or false.

**10. Expected Results**

* Service should return correct boolean response for all test cases.
* No unexpected errors or crashes.

**11. Pass/Fail Criteria**

* **Pass:** Response matches expected result and structure.
* **Fail:** Incorrect response, malformed data, or unexpected errors.

**12. Risks & Mitigations**

* **Risk:** Service downtime during testing
* **Mitigation:** Schedule testing during service availability window.

**13. Deliverables**

* Test Plan Document
* Test Cases Document
* Test Execution Report
* Defect Report (if any)