

## Part 01:Requirement testing

1) The system shall be able to scan the MRZ of a travel document using a hardware device scanner and get the information in MRZ as two strings (line 1 and line 2 from the above Figure). Note that you do not need to worry about the implementation of the hardware device. But you need to define this method for the software part. This means that you define an empty method for this function.

**The ambiguity in the above statement is:**

- It is unclear what information fields should be encoded into two strings for the MRZ
- There is no provision for distinguishing between two lines. It should be able to distinguish the first line's end. There is no length specified for either line; also, length should be specified for each argument.
- There is no information regarding the whole length of the string. We would have believed that one line must be 44 characters long.

2) The system shall be able to decode the two strings from specification #1 into their respective fields and identify the respective check digits for the fields, following the same format in the above example.

**The ambiguity in the above statement is:**

- It is unclear which parts of the MRZ should be processed and decoded into information fields.
- Should we verify each data attribute while decoding it? For instance, the expiration date may be 980230, but February lacks a 30th day.
- We don't know the format of the string's format. Is the document type always one digit in the first line "PISLPAYNENOEMIGLENN"? And is it always followed by one "?"
- Can certain fields be left blank? For instance, middle name.
- Is there a character restriction for names? How should the names and the placeholder "" be arranged?
- There is no information provided regarding the numerical values allocated to data items. How will the system or developer know what the numeric value for input characters should be?

3) The system shall be able to encode travel document information fields queried from a database into the two strings for the MRZ in a travel document. First, we should validate the data from the database. If they are illegal, it should be reported. If one's name is too long, the system should cut and fit it. This is the opposite process compared to specification #2. Assume that the database function is not ready. But for testing purposes, you need to define a method for database interaction and leave it empty.

**The ambiguity in the above statement is:**

- Can we assume that all data retrieved from the database is always legal? What happens if certain unauthorized inputs are detected?
- What if a person's name is too lengthy to be encoded?

4) The system shall be able to report a mismatch between certain information fields and the check digit. The system shall report where the miss match happened, i.e., which information field does not match its respective check digit.

**The underlined part was the ambiguity found in this requirement as**

- It is also unclear how the system should report a mismatch between certain information fields and the check digit and how the user should be notified of a mismatch. It does not clarify what should be the correct check digit if there is a mismatch.

**Additionally, requirements that should be added are as follows:**

- 1) There should be requirement regarding how the system will handle the decoding and encoding of characters outside the Latin alphabet
- 2) It is not stated how the system should check the accuracy of the data fields.