Final Project 2022FSSW567-A

Team Members:

1. Nikhil Kumar G
2. Ruifeng Zhang
3. Shiv Chirayu Shah
4. Shashank Ramesh Kumar

Part 1-RequirementTesting:

1. Requirement 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.

Ambiguity: Here, in the requirement it is mentioned that we define this function to be an empty method.

Clarification: Instead of keeping this function empty we should use the pass statement in it and this function will later be mocked to be used by other functions.

Improvised version:
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. So just define this method for the software part and use pass statement in it. Later mock this function while doing the testing.

2. Requirement 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.

Ambiguity: Here, since the specification 1 function is going to be empty and have just a pass statement it can't have any two strings coming from it. The function also doesn't specify what its return value should be.

Clarification: Instead of saying that the two strings will come from specification 1 it can instead say that we can get the two strings from the mocked function of specification 1 during testing. The decode function can return the check digits for comparison and the decoded output in a dictionary, since nothing is mentioned about that.

Improvised version:

The system shall be able to decode the two strings coming from the mocked function of the Hardware scanner function in specification #1. It will decode them into their respective fields and identify the respective check digits for the fields, following the same format in the above example. The decode function will then be able to return the check digits for verification purpose along with a dictionary containing all the fields.

3. Requirement 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. 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.

Ambiguity: Here, in the requirement it is mentioned that we can define the database function and leave it empty. There is nothing mentioned about what the encode function should return. The requirement doesn't talk about mocking the database and then getting the information fields. There is no mention of the type of data that will be queried from the database.

Clarification: Instead of keeping the database function empty we can make this function make use of a pass statement. The requirement should mention that the database function will be mocked to get the information fields into the encode function. The encode function should return the check digits calculated by using the method seen in the example. It should also return a string of the two MRZ string lines. The type of data which will be a 'dictionary' that will be stored in the database should be mentioned.

Improvised version:

The system shall be able to encode travel document information fields queried from a mocked database function into the two strings for the MRZ in a travel document. The information fields in the database can be stored in the form of dictionary. This is the

opposite process compared to specification #2. Assume that the database function is not ready so just keep it empty and make use of the pass statement inside it. For testing purposes, you can mock it to return the database information of the person who is travelling. The encode function should then return the check digits for verification purpose along with the encoded MRZ Strings.

4. Requirement 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.

Ambiguity: The requirement doesn't talk about the source of the check digits and information fields. The requirement doesn't talk about what should the output of this function be exactly when reporting a mismatch.

Clarification: The requirement can say that the check digits returned the encode and decode function can be the inputs to this function and they will be compared to see if they differ. If any check digit doesn't match with the corresponding field's check digit, then a mismatch will be reported for that information field in the form of a return statement.

Improvised version:

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 check digits will be obtained from the encode and decode functions and then they will be compared with each other to find which information field doesn't match with its respective check digit. The output of this function will be a return statement showing if there is any mismatch in the fields and check digits.