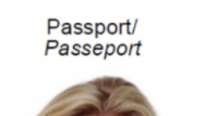


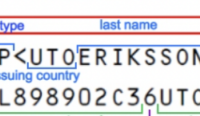
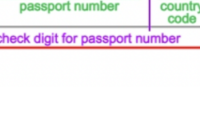
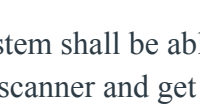


Final Project Part 1 Requirements Testing
SSW 567

Joseph Carbonell, Prateek Singh Chauhan, Brianna Garland, Veronika Myshkina,
& Neel Hiteshkumar Savani

Original Requirements

		Type/ Type	Country code/ Code du pays	Passport No/ N° de passeport
		P	UTO	L898902C3
		Surname/ Nom	ERIKSSON	
		Given names/ Prénoms	ANNA MARIA	
		Nationality/ Nationalité	UTOPIAN/UTOPIENNE	
		Date of Birth/ Date de naissance	12 AUG/AOÛT 74	
		Sex/ Sexe	Place of birth/ Lieu de naissance	Personal No./ N° personnel
		F	ZENITH	Z E 184226 B
		Date of issue/ Date de délivrance	Authority/ Autorité	PASSPORT OFFICE
		16 APR/AVR 07		
		Date of expiry/ Date d'expiration	Holder's signature/ Signature du titulaire	<i>Anna Maria Eriksson</i>
		15 APR/AVR 12		

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.
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.
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.
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.

Identification of Ambiguities in Requirements

Original 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.

Ambiguities:

- I. This requirement mentions MRZ but does not explain what it is
- II. This requirement also does not specify which hardware device scanner to use.
- III. The requirement talks of gathering information using a device but not what information is to be gathered
- IV. The part of this requirement describing what to do with the hardware implementation but the way in which it is described makes it confusing and could be described in clearer wording.

Original 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.

Ambiguities:

- I. This requirement says that it must decode the strings into their respective fields but it does not say how or what those fields are.
- II. The requirement also mentions check digits but does not mention where those come from other than showing the example.

Original 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.

Ambiguities:

- I. “Travel document information” is ambiguous. A passport has a lot of different information that is not relevant for this application.
- II. This requirement does not mention that for testing purposes you would also need a mock function for the database.
- III. Does not specify what we are testing.

Original 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.

Ambiguities:

- I. “Mismatch between certain information fields” is vague.
- II. Does not specify *how* the system shall report the mismatch.

Rewritten Requirements

Rewritten Requirement 1:

The system shall be able to scan the MRZ or machine readable zone of a travel document. The system should be able to do this using the [Documentation did not provided the name of the scanner, Insert scanner name here] hardware device scanner to take information from the scanned MRZ and take the information in as two strings (Line 1: Type of passport, the issuing country, and the name of the holder. Line 2: passport number, country code, birth date, gender, expiration date, and personal number). For the purpose of this system, the actual implementation of the hardware device does not need to occur, but instead creating an empty function that mocks it to be able to show where it would be of use.

Rewritten Requirement 2:

The system shall be able to decode or take the information from the two strings and assign the values to corresponding variables as well as storing the four check digits for the fields. These check digits are located between and at the end of the information fields. For the first line, type of passport, the issuing country, and the name of the holder. For the second line, passport number, country code, birth date, gender, expiration date, and personal number.

Rewritten Requirement 3:

The system shall be able to make a call to the database and retrieve needed travel document information for the MRZ - the document type, issuing country, last name, first name, middle name, passport number, check digit for passport number, country code, birth date, check digit for birth date, sex, expiration date, check digit for expiration date, personal number, check digit for personal number. Create a database interaction method, but leave it empty (assume it is not ready). For testing purposes, create a mock function using this method. The encoded information from this requirement shall be checked against the original information from Requirement 1, before it is decoded. The strings must match.

The system shall have another function that concatenates, or encodes, the retrieved information into the two MRZ lines. Line 1 contains the document type, issuing country, last name, first name, middle name. Line 2 contains the passport number, check digit for passport number, country code, birth date, check digit for birth date, sex, expiration date, check digit for expiration date, personal number, check digit for personal number.

Rewritten Requirement 4:

The system shall be able to check Line 2 of the MRZ field to see if all 4 check numbers are correct (check digit for passport number, check digit for birth date, check digit for expiration date, check digit for personal number). Given the fields for the passport number, birth date, expiration date, personal number (from Requirement 1), the system shall calculate the appropriate check number, and then compare it to the given check number (from Requirement 1). If at least one calculated check number does not match the given check number, the system shall output a message that informs the user that the passport is fake.