**Python Programming Exercise**

Below is the programming task we would like you complete.

Your task is to write some code/script to analyze a report that we get from our partners

that lists various events that happen to units.

An example file looks like:

SHIP 123456789012347 ABC

123 screen

124 power

RECV 123456789012347 XYZ

27 camera

The format for each record is:

<EVENT> <IMEI> <SKU>

<FAULT\_CODE> <FAULT\_DESCRIPTION>

The 'EVENT' is either 'SHIP' or 'RECV'. (NOTE: SHIP = SEND)

SHIP means that the partner shipped the unit out of their warehouse

RECV means that the partner received the unit into their warehouse.

- 'IMEI' is a unique identifier for the device

see: https://en.wikipedia.org/wiki/International\_Mobile\_Equipment\_Identity for more information.

There should be a 15-digit IMEI and have a valid check digit (see check digit computation).

Records with invalid IMEIs should be reported, but otherwise ignored.

- 'SKU' is a stock-keeping unit that identifies the make/model of the unit.

See https://en.wikipedia.org/wiki/Stock\_keeping\_unit

- 'FAULT CODE' is an integer code describing the fault the device has.

- 'FAULT DESCRIPTION' is a string description the fault.

**1. Write a Python script that will take an input file and is able to parse the input file and report on the following:**

1. Provide the total number of devices that are currently at the partner, by SKU.

Assume the events in the file represent all events that have ever occurred.

E.g.:

Inventory:

ABC 1

XYZ 50

1. Provide a list of invalid records that are in the file including:
2. why they are invalid.
3. the record index.

E.g.: Invalid records: 5 Invalid IMEI, 10 Invalid event

1. Provide a list of all the “Fault Codes” and their “Faults”

Output what the mapping is.

E.g.:

Fault code mapping:

123 screen

124 power

27 camera

**The script can use any Python standard library.**

**2. Design an SQL schema to store the data (i.e.: write the 'CREATE TABLE' DDL commands).**

Please send this back to us when you have time. I think you should allow a couple of hours.