

## Exercises to practice for the midterm

### Exercise 01

The directory of a company's customers is organized in a text string like the one below, where each line contains the customer's name, email, phone number, tax ID, and the discount applied to the customer. The lines are separated with the line change character and the first line contains the names of the fields with the information contained in the directory.

```
"tin;name;email;telephone;discount\n01234567L;Paul Harry; paulharry  
@mail.com;656343576;12.5\n71476342J;Alice  
Brown;alice@mail.com;692839321;8\n63823376M;Peter  
Williams;peter@mail.com;664888233;5.2\n98376547F;Rose  
Anderson;rose@mail.com;667677855;15.7"
```

Write a program that generates a dictionary with the information of the directory, where each element corresponds to a client and has as key its tin and as value another dictionary with the rest of the information of the client. The dictionaries with the information of each client will have as keys the names of the fields and as values the information of each client corresponding to the fields. That is to say, a dictionary like the following:

```
{'01234567L': {'name': 'Paul Harry', 'email': 'paulharry@mail.com', 'telephone': '656343576',  
'discount': 12.5}, '71476342J': {'name': 'Alice Brown', 'email': 'alice@mail.com', 'telephone':  
'692839321', 'discount': 8.0}, '63823376M': {'name': 'Peter Williams', 'email': 'peter@mail.com',  
'telephone': '664888233', 'discount': 5.2}, '98376547F': {'name': 'Rose Anderson', 'email':  
'rose@mail.com', 'telephone': '667677855', 'discount': 15.7}}
```

### Exercise 02

Define a function that receives a list of invoices, a TIN (Tax Identification Number) and a month, and returns a dictionary with the number of invoices issued to that TIN in the indicated month and the total invoiced in that month.

The function must meet the following requirements:

- The input parameters shall be a list of invoices, a string with a TIN and another string with the month.
- Each invoice will be represented by a dictionary with the keys tin (customer's TIN number), month (month of invoice issue), amount (amount invoiced excluding VAT), vat (VAT percentage to be applied).
- A list with the total of each invoice (after VAT) must be created for the specified TIN number and month using functional programming or list comprehension.

- The function must return a dictionary with the number of invoices and the total invoiced to the VAT in the indicated month.

Example of invoice:

```
{'tin': 'B12345678', 'month': 'March', 'amount': 1000, 'vat': 10}
```