

Technical case study – Connections

Background

In Car Insurance, the prices for the tariffs are very variable and depend on a lot of parameters. We cannot calculate prices ourselves, so we need to connect to each insurance to ask for prices.

Your task is to take the data provided by our user and then prepare an API call to the FOO insurance to receive prices for car insurance tariffs.

Challenges

- **Mapping:** We have our own format for the input parameters, and each of the insurances have their own. Sometimes, a mapping is not just mapping the key, but also mapping the value or even combining values.
- **Creating the XML:** Should you use SimpleXML to build the request, or another XML framework, or is there an alternative? Find a good solution and have arguments for and against your choice.

Task

Data gathering

Create a command that will read the input parameters and echo the XML. You could read the input from a file and output to the console or do it in another way – whatever is easiest for you.

There is no exact specification of how to create, try to infer from the example XML and the parameters what should be mapped where.

The goal is not to have every value mapped; we expect at least the mappings given in the chapter “Mappings”.

The format for the input can be defined by you - p.ex. JSON.

You have free choice of frameworks/libraries.

Acceptance criteria:

- You are prepared to explain your architectural decisions, in key decisions having more than one possible solution and explaining the pros and cons of your choice.
- The command works and converts the parameters to an XML.
- **The mapping is implemented in a way that the product manager can double check it.**
- You assure through automated test that the mapping is correct in all edge cases.
- There is error handling for missing / wrong input.
- You can create a request for both sets of input parameters and receive sensible output (Not everything mapped, but what is mapped should make sense)

Mappings

Tag	Mapping
CondPpalEsTomador	YES/NO whether the holder is the main driver.

ConductorUnico	YES/NO whether there is more than one driver.
FecCot	Current date as ISO
AnosSegAnte	Number of years in previous insurance as *full years* (see glossary)
NroCondOca	Number of additional drivers
SeguroEnVigor	If there is a previous insurance, and the previous insurance is still valid, YES. NO otherwise.

Glossary

Full years	Years calculated only looking at the year part – from 01.01.2015 to 31.12.2016 is one year, as is from 31.12.2015 to 01.10.2016.
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Appendix

A1. First set of input parameters - young driver

Parámetro	Valor
car_brand	SEAT
car_fuel	Gasolina
car_model	IBIZA
car_power	No estoy seguro
car_purchaseDate	
car_purchaseSituation	NUEVO
car_registrationDate	
car_version	00540140903
customer_journey_ok	1
driver_birthDate	2002-06-05
driver_birthPlace	ESP
driver_birthPlaceMain	ESP
driver_children	NO
driver_civilStatus	SOLTERO
driver_id	36714791Y
driver_idType	dni
driver_licenseDate	2020-12-15
driver_licensePlace	ESP
driver_licensePlaceMain	ESP
driver_profession	Estudiante
driver_sex	MUJER
holder	CONDUCTOR_PRINCIPAL
holder_birthDate	
holder_civilStatus	
holder_id	
holder_idType	
holder_licenseDate	
holder_profession	
holder_sex	
occasionalDriver	NO
occasionalDriver_birthDate	
occasionalDriver_civilStatus	
occasionalDriver_id	
occasionalDriver_idType	
occasionalDriver_licenseDate	
occasionalDriver_profession	
occasionalDriver_sex	
occasionalDriver_youngest	
prevInsurance_claims	
prevInsurance_claimsCount	0
prevInsurance_company	

prevInsurance_companyYear	
prevInsurance_contractDate	
prevInsurance_email	
prevInsurance_emailRequest	NO
prevInsurance_exists	NO
prevInsurance_expirationDate	
prevInsurance_fineAlcohol	
prevInsurance_fineOther	
prevInsurance_fineParking	
prevInsurance_fineSpeed	
prevInsurance_fines	
prevInsurance_modality	1
prevInsurance_years	
reference_code	1TT02TT11
use_carUse	OCASIONAL
use_kmsYear	6000
use_nightParking	CALLE
use_postalCode	28001

A2. Second set of input parameters – old holder with second young driver

Parámetro	Valor
car_brand	RENAULT
car_fuel	Diesel
car_model	CLIO
car_power	No estoy seguro
car_purchaseDate	
car_purchaseSituation	NUEVO
car_registrationDate	
car_version	00490150754
customer_journey_ok	1
driver_birthDate	1948-03-02
driver_birthPlace	ESP
driver_birthPlaceMain	ESP
driver_children	NO
driver_civilStatus	CASADO
driver_id	53990338T
driver_idType	dni
driver_licenseDate	1968-03-02
driver_licensePlace	ESP
driver_licensePlaceMain	ESP
driver_profession	Administrativo
driver_sex	HOMBRE
holder	CONDUCTOR_PRINCIPAL
holder_birthDate	
holder_civilStatus	
holder_id	
holder_idType	
holder_licenseDate	
holder_profession	
holder_sex	
occasionalDriver	SI
occasionalDriver_birthDate	1993-03-02
occasionalDriver_civilStatus	SOLTERO
occasionalDriver_id	01234567L
occasionalDriver_idType	dni
occasionalDriver_licenseDate	2012-07-27
occasionalDriver_profession	Administrativo
occasionalDriver_sex	MUJER
occasionalDriver_youngest	HIJO
prevInsurance_claims	NO
prevInsurance_claimsCount	0
prevInsurance_company	ALLIANZ
prevInsurance_companyYear	8
prevInsurance_contractDate	2013-03-03

prevInsurance_email	
prevInsurance_emailRequest	NO
prevInsurance_exists	SI
prevInsurance_expirationDate	2021-03-02
prevInsurance_fineAlcohol	
prevInsurance_fineOther	
prevInsurance_fineParking	
prevInsurance_fineSpeed	
prevInsurance_fines	NO
prevInsurance_modality	NO_ESTOY_SEGURO
prevInsurance_years	8
reference_code	1TT17TT11
use_carUse	DIARIO
use_kmsYear	10000
use_nightParking	GARAJE_INDIVIDUAL
use_postalCode	

A3. Sample request given to use by the Foo insurance.

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