Ejercicio 7

7.1

$$\text{CamionesBy12Ruedas} \leftarrow \left(\sigma_{\text{cant\_ruedas} \geq 8 \wedge \text{cant\_ruedas} \leq 12}(\text{camion})\right)$$

$$\pi_{\text{vehiculo.patente, largo, max\_toneladas, cant\_ruedas, tiene\_acoplado, modelo, marca, peso, km}}\left[\pi_{\text{patente}}\left(\sigma_{\text{km\_service} < 1000}(\text{service})\right) \bowtie \text{CamionesBy12} \bowtie \text{vehiculo}\right]$$

7.2

$$\text{AutosServicesCambioAceite} \leftarrow \pi_{\text{patente, es\_electrico, tipo\_motor}}\left[\sigma_{\text{observaciones} = \text{"cambio de aceite"} \wedge \text{km\_service} < 13000}(\text{service}) \bowtie \text{auto}\right]$$

$$\text{AutosServiceInspeccionGral} \leftarrow \left[\sigma_{\text{observaciones} = \text{"inspeccion general"}}(\text{service}) \bowtie \left(\sigma_{\text{nombre} = \text{"filtro de combustible"}}(\text{parte}) \bowtie \text{service\_parte}\right)\right] \bowtie \text{auto}$$

$$\pi_{\text{auto.patente}}\left(\text{AutosServiceCambioAceite} \cup \text{AutosServicesInspeccionGral}\right)$$

7.3

$$\text{CamionesMas350000Km} \leftarrow \left[\pi_{\text{patente, largo, max\_toneladas, cant\_ruedas, tiene\_acoplado}}\left(\sigma_{\text{km} > 350000}(\text{vehiculo} \bowtie \text{camion})\right)\right]$$

$$\text{Camion} \leftarrow \text{Camion} - \text{CamionesMas350000Km}$$

7.4

$$\text{Services2019} \leftarrow \pi_{\text{fecha, patente}}\left(\sigma_{\text{fecha} \geq 01\text{-}01\text{-}2019 \wedge \text{fecha} \leq 31\text{-}12\text{-}2019}(\text{service})\right)$$

$$\pi_{\text{nombre}}\left((\text{parte} \bowtie \text{serviceParte}) \div \text{Services2019}\right)$$

NOTA

7.5

$$\text{MatriculaAutosElectricos} \leftarrow \left[\pi_{\text{Matricula}}\left(\sigma_{\text{Es\_electrico} = \text{True}}(\text{AUTO})\right)\right]$$

$$\pi_{\text{Matricula, Modelo, Marca, Peso}}\left(\text{VEHICULO} \bowtie \text{MatriculaAutosElectricos}\right)$$

7.6

$$\text{PARTE} \leftarrow \text{PARTE} \cup (\text{"Aleron"}, 3400)$$

7.7

$$\text{Service\_Parte} \leftarrow \text{Service\_Parte} - \left(\sigma_{\text{Matricula} = \text{"AAA564"}}(\text{Service\_Parte})\right)$$

$$\text{Service} \leftarrow \text{Service} - \left(\sigma_{\text{Matricula} = \text{"AAA564"}}(\text{Service})\right)$$

7.8

$$\text{PrecioParte} \leftarrow \text{Precio\_Parte} * 1.15\ (\text{PARTE})$$

7.9

$$\pi_{\text{Matricula, Modelo, Marca, Peso, Km}}\left(\text{VEHICULO} \bowtie \left(\pi_{\text{Matricula}}\left(\sigma_{\text{Fecha} \geq 01\text{-}01\text{-}2019 \wedge \text{Fecha} \leq 31\text{-}12\text{-}2019}(\text{Service})\right)\right)\right)$$