HW3

Sunday, March 3, 2019 8:37 PM

1) Find the business name of all contractors who have worked at least 10 hours for a customer in the 95819 zip code.

$$\text{CONTRACTOR\_10} \leftarrow \sigma_{\text{hours}\geq 10}(\text{CONTRACTOR} * \text{HIRE})$$
$$\text{CUSTOMER\_95819} \leftarrow \sigma_{\text{zip}=95819}(\text{CUSTOMER})$$
$$\text{RESULT} \leftarrow \Pi_{\text{bus\_name}}(\text{CONTRACTOR\_10} * \text{CUSTOMER\_95819})$$

2) Find the first and last names of all customers who have between 100 and 1000 rewards points.

$$\text{RESULT} \leftarrow \Pi_{\text{first,last}}\left(\left(\sigma_{\text{points}\geq 100 \text{ AND } \text{points}\leq 1000}(\text{REWARDS})\right) * \text{CUSTOMER}\right)$$

3) Find the names of all paint colors that have not been used in a room.

$$\text{UC\_USED\_PAINTED} \leftarrow \Pi_{\text{mfg\_id,color\_id}}(\text{PAINTED})$$
$$\text{UC\_ALL\_PAINT\_COLOR} \leftarrow \Pi_{\text{mfg\_id,color\_id}}(\text{PAINT\_COLOR})$$
$$\text{UNUSED\_PAINT} \leftarrow \text{UC\_ALL\_PAINT\_COLOR} - \text{UC\_USED\_PAINTED}$$

4) Find the business name, discount, and phone number of all contractors who have worked at least 1 hour for customers with the last name of 'Valdez'.

$$CUST\_VALDEZ \leftarrow \sigma_{last='Valdez'}(CUSTOMER)$$
$$CONTRACTOR\_1PLUS \leftarrow \sigma_{hours\geq 1}\left((HIRE * CONTRACTOR) * CONTRATOR\_PHONE\right)$$
$$RESULT \leftarrow \Pi_{bus\_name,discount,phone}(CUST\_VALDEZ * CONTRACTOR\_1PLUS)$$

5) Find the first and last names of all customers who have used a paint color named "Blushing Pink" in a room named "Bedroom 1"

$$BLUSHINGPINK\_BEDROOM1 \leftarrow \sigma_{name='BlushingPink' \text{ AND } rm\_name='Bedroom1'}(PAINTED * PAINT\_COLOR)$$
$$RESULT \leftarrow \Pi_{first,last}(BLUSHINGPINK\_BEDROOM1 * CUSTOMER)$$