

## Hands On 05

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- 1)  $A = \pi \text{ first\_name, last\_name (actors)}$   
 $B = \pi \text{ first\_name, last\_name (directors)}$   
 $A \cap B$
- 2)  $A = \pi \text{ first\_name, last\_name (actors)}$   
 $B = \pi \text{ first\_name, last\_name (directors)}$   
 $A - B$
- 3)  $A = \pi \text{ first\_name, last\_name (actors)}$   
 $B = \pi \text{ first\_name, last\_name (directors)}$   
 $A \cup B$
- 4)  $A = \pi \text{ id (movies)}$   
 $B = \pi \text{ movie\_id (movies\_directors)}$   
 $C = A - B$   
 $D = \rho \text{ id\_movie} \leftarrow \text{id (C)}$   
 $E = D \bowtie \text{id\_movie} = \text{id movies}$   
 $\pi \text{ name (E)}$
- 5)  $A = \gamma \text{ actor\_id; count(movie\_id)} \rightarrow \text{Total (roles)}$   
 $B = \sigma \text{ Total} \geq 2 (A)$   
 $C = \pi \text{ actor\_id (B)}$   
 $D = \pi \text{ id (actors)}$   
 $E = D - C$   
 $F = \rho \text{ id\_a} \leftarrow \text{id (E)}$   
 $G = F \bowtie \text{id\_a} = \text{id actors}$   
 $\pi \text{ first\_name, last\_name (G)}$
- 6)  $A = \gamma \text{ movie\_id; count(actor\_id)} \rightarrow \text{Total ( roles )}$   
 $B = \sigma \text{ Total} \geq 2 ( A )$   
 $C = \pi \text{ movie\_id ( B )}$   
 $D = \pi \text{ id ( movies )}$   
 $E = D - C$   
 $F = \rho \text{ idmovies} \leftarrow \text{id ( E )}$   
 $G = F \bowtie \text{idmovies} = \text{id movies}$   
 $H = G \bowtie \text{id} = \text{movie\_id movies\_genres}$   
 $\gamma \text{ genre, year; count(id)} \rightarrow \text{Total ( H )}$