Homework Assignment Databases 1
2026

We have the following database schema.

```
Film ( filmid, title, company, year, director )
Actor ( actid, name, byear, gender )
PlaysIn ( filmid, actid, role )
```

Below you see four queries in natural language and some expressions in RA. We abbreviate the table names to their first letter. Gender ='F' means 'Female'. The relational division is denoted using a %. We suppose every movie has one director. We ignore the problems related to nonuniqueness of titles.
The question is: which queries correspond to which expressions. Each query may correspond to zero, one or more expressions.

Q1: Which female actresses (name) belong to the millennial generation (born between 1981 and 1996)?

Q2: In which films (title) from 2025 don't play any actors from the millennial generation?

Q3: Which actors (actid) play in all movies of director Wes Anderson?

Q4: Which actors (actid) played only James Bond in the eighties?

E1: $\pi_{naam}(\sigma_{gender='F' \wedge byear \geq 1981 \wedge byear \leq 1996} (A))$

E2: $\pi_{actid}(\sigma_{gender='F' \wedge byear \geq 1981 \wedge byear \leq 1996} (P \% A))$

E3: $\pi_{title}(\sigma_{year=2025 \wedge byear \geq 1981 \wedge byear \leq 1996} (F \bowtie A))$

E4: $\pi_{title}(\sigma_{year=2025}(F)) - \pi_{title}(\sigma_{year=2025}(F) \bowtie \pi_{filmid}(P \bowtie \pi_{actid}(\sigma_{byear \geq 1981 \wedge byear \leq 1996}(A))))$

E5: $\pi_{title}(\sigma_{year=2025}(F) \bowtie \pi_{filmid}(P \bowtie \pi_{actid}(\sigma_{byear \geq 1981 \wedge byear \leq 1996}(A))))$

E6: $\pi_{actid} (P \% \pi_{filmid}(\sigma_{director='Wes\ Anderson'}(F)))$

E7: $\pi_{actid} (\pi_{actid,filmid}(P) \% \pi_{filmid}(\sigma_{director='Wes\ Anderson'}(F)))$

E8: $\pi_{actid}(P) - \pi_{actid}(\sigma_{role \neq 'James\ Bond' \vee year<1980 \vee year>1989}(P \bowtie F))$

E9: $\pi_{actid}(P \bowtie \pi_{filmid,actid}(\sigma_{role='James\ Bond' \wedge year \geq 1980 \wedge year \leq 1989}(P \bowtie F)))$